Final

AMERICAN RIVER WATERSHED COMMON FEATURES, AMERICAN RIVER CONTRACT 3A

Supplemental Environmental Impact Report/ Environmental Assessment

United States Army Corps of Engineers
Sacramento District
and
Central Valley Flood Protection Board

September 2022

ESA

US Army Corps of Engineers®

CENTRAL VALLEY FLOOD PROTECTION BOARD
PUBLIC SAFETY
FLOOD RISK REDUCTION
STATE OF CALIFORNIA

Preface

The American River Contract 3A project (Proposed Action) includes the installation of levee erosion protection features along the left bank of the Lower American River in the same location as Interstate 80 and upstream of the City of Sacramento's Sutter's Landing Park in the American River Parkway. Most of the levee improvements included in the Proposed Action were analyzed in the 2016 American River Watershed Common Features General Reevaluation Report (ARCF GRR) Final Environmental Impact Statement/Final Environmental Impact Report (FEIS/FEIR). This document is arranged as a Supplemental EIR (Part 1) and a Supplemental Environmental Assessment (SEA) (Part 2) to supplement the ARCF GRR FEIS/FEIR by addressing the environmental impacts from project modifications and design details developed after the ARCF GRR FEIS/FEIR was prepared, approved, and certified. The Supplemental EIR is being prepared by the Central Valley Flood Protection Board (CVFPB) as the State lead agency under the California Environmental Quality Act (CEQA), and the Supplemental EA is being prepared by the U.S. Army Corps of Engineers (USACE) as the lead agency under the National Environmental Policy Act (NEPA).

As described in more detail below, CEQA and NEPA requirements differ, including which project elements require additional environmental analyses and the definition of baselines used to evaluate impacts. The Supplemental EIR (Part 1) and Supplemental EA (Part 2) for the Proposed Action are combined in this document for clarity and completeness.

In accordance with CEQA requirements, Part 1 of this document (the Supplemental EIR) analyzes the proposed project, which includes the Proposed Action components at a greater level of design detail than was available in the ARCF GRR FEIS/FEIR, to support both CEQA lead and responsible agency decision-making. The impacts of the Proposed Action are compared to existing conditions (as of April 2022) to determine impact significance in this Supplemental EIR.

In accordance with NEPA, Part 2 of this document (the Supplemental EA) analyzed only those elements of the Proposed Action which were not previously analyzed in the ARCF GRR FEIS/FEIR and Supplemental NEPA/CEQA documents already prepared for the American River Contracts 1 and 2 projects. Because these prior documents addressed the installation of staging areas, haul routes, borrow sites, potential disposal/stockpiling areas, and mitigation sites, these elements are already authorized for construction, have been considered for their full environmental impacts, and are considered to be part of the NEPA No Action Alternative. The impacts of the Proposed Action are compared to the No Action Alternative to determine impact significance in the Supplemental EA. For NEPA purposes, the Proposed Action includes changes to the ARCF GRR FEIS/FEIR that were not previously analyzed and authorized: (1) staging areas, (2) haul routes, (3) disposal/stockpile site, (4) and erosion protection footprint different from the Project Area defined in the ARCF GRR FEIS/FEIR.

CVFPB will release the Final Supplemental EIR for public and agency review in accordance with CEQA requirements. USACE will release the Final Supplemental EA for public and agency review concurrently with the Final Supplemental EIR. After the review period closes, CVFPB and USACE consider the comments received and prepared responses. These comments and responses, along with any modifications, are incorporated into this Final Supplemental EIR and a Final Supplemental EA with a Finding of No Significant Impact to meet NEPA requirements for the Proposed Action.

Environmental commitments and mitigation measures summarized in the Executive Summary (Table ES-1) apply to the Proposed Action as a whole.

Part 1:
Final

AMERICAN RIVER WATERSHED COMMON FEATURES, AMERICAN RIVER CONTRACT 3A

Supplemental Environmental Impact Report
State Clearinghouse Number 2005072046

Prepared for
Central Valley Flood Protection Board

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EXECUTIVE SUMMARY

ES.1 Summary of the Proposed Action

The Proposed Action includes the installation of erosion protection features along the Lower American River in the project area for the American River Watershed Common Features, Water Resources Development Act of (ARCF) 2016 Project, American River Contract 3A. The American River Watershed Common Features General Reevaluation Report Final Environmental Impact Statement/Environmental Impact Report (ARCF GRR FEIS/FEIR) analyzed the basic erosion protection measures that underlie the Proposed Action in this Supplemental EIR. However, some elements of those measures (specifics of designs, staging areas, construction methods, haul routes, disposal of soil, and mitigation sites) were not analyzed in the ARCF GRR FEIS/FEIR because final designs and specs had not been completed. Through project design and refinement, the U.S. Army Corps of Engineers (USACE) and Central Valley Flood Protection Board (CVFPB), also referred to as the Project Partners in this Supplemental EIR, have now identified specific locations and improvements to address erosion concerns, potential staging areas, haul routes, stockpile sites, and off-site mitigation that constitute this Proposed Action. This Supplemental EIR supplements the ARCF GRR FEIS/FEIR by analyzing the environmental effects of these previously unquantified or unidentified elements of the erosion protection measures planned for the Proposed Action in compliance with the California Environmental Quality Act (CEQA).

ES.2 Summary of Environmental Consequences

Table ES-1 summarizes the results of the resource effects analysis of the Proposed Action on the environment, provided in detail in Sections 3.2 through 3.14 of this Supplemental EIR. The table provides a description of resource baselines and effects and significance conclusions before and after implementation of mitigation, and mitigation measures.

ES.3 Areas of Controversy and Issues to Be Resolved

The ARCF GRR FEIS/FEIR identified several areas of controversy based on the comments received during the public scoping period and during past National Environmental Protection Act (NEPA) and CEQA public processes undertaken by

USACE, the CVFPB, and the Sacramento Area Flood Control Agency (SAFCA). Several of these areas of controversy are applicable to the Proposed Action:

- Construction-related effects on residents and businesses adjacent to the project levees.
- Construction-related impacts on biological resources.
- Vegetation and tree removal.
- Effects on cultural resources and resources significant to Native American tribes.
- Impacts on recreation facilities.
- Impacts on endangered species and their habitat.

TABLE ES-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic	Effect	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.2 Visual Resources	Result in Short-Term Impacts on the Visual Character of the American River Parkway During Construction	S	None	SU
	Result in a Loss of Vegetation Due to Removal and Construction of Levee Improvements Resulting in Short-Term Effects on Visual Resources of Mature Vegetation	S	Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site. Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal. Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.	LTS
	Result in Long-Term Adverse Impact on Visual Resources to Users Within the American River Parkway	S	Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site. Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal. Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.	LTS
	Create a New Source of Substantial Light or Glare that Would Adversely Affect Day or Nighttime Views in the Area	S	Mitigation Measure VIS-1: Shield Temporary Nighttime Lighting.	LTS
3.3 Hydrology and Water Quality	Result in Changes to the Levee Footprint, In-Channel Geometry or Characteristics, River Hydraulics, and/or Impede or Redirect Flood Flows	LTS	None	LTS
	Violate Any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface or Groundwater Quality, Result in Substantial Erosion or Siltation on- or off-site, or Conflict with or Obstruct Implementation of a Water Quality Control Plan.	S	Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat. Mitigation Measure WQ-1: Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.	LTS

LTS = less than significant; S = significant; SU = significant and unavoidable.

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic	Effect	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.4 Vegetation and Wildlife	Result in Short-Term Adverse Effects on Riparian Habitat and Waters of the United States	S	Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site.	SU
			Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal.	
			Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.	
			Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.	
	Result in Long-Term Adverse Effects on Riparian Habitat and Waters of the United States	S	Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site.	LTS
			Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal.	
			Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.	
			Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.	
3.5 Fisheries	Adverse Effects on Fisheries Resources	S	Mitigation Measure FISH-1: Observe In-Water Work Windows.	LTS
			Mitigation Measure FISH-2: Analyze Hazardous Materials Spills and Implement Measures to Control Contamination.	
			Mitigation Measure FISH-3: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.	
			Mitigation Measure FISH-4: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.	
			Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.	
			Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site.	
			Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal.	
			Mitigation Measure WQ-1: Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.	

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TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic	Effect	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.6 Special Status Species	Adverse Effect on Special Status Species: Valley Elderberry Longhorn Beetle	S	Mitigation Measure VELB-1: Implement Current USFWS Avoidance, Minimization, and Compensation Measures for Valley Elderberry Longhorn Beetle.	LTS
	Adverse Effect on Special Status Species: Western Yellow-Billed Cuckoo	S	Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds. Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site. Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal.	LTS
	Adverse Effect on Special Status Species: Swainson's Hawk	S	Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds. Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site. Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal.	LTS
	Adverse Effect on Special Status Species: Bank Swallow	S	Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.	LTS
	Adverse Effect on Special Status Species: Burrowing Owl	S	Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.	LTS
	Adverse Effect on Special Status Species: White-Tailed Kite	S	Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds. Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site. Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal.	LTS
	Adverse Effect on Special Status Species: Purple Martin	S	Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.	LTS
	Adverse Effect on Special Status Species: Other Breeding and Migratory Birds	S	Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds.	LTS
	Adverse Effect on Special Status Species: Western Pond Turtle	S	Mitigation Measure TURTLE-1: Implement Measures to Avoid and Minimize Effects on Western Pond Turtle. Mitigation Measure WQ-1: Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.	LTS

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TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic	Effect	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.6 Special Status Species (cont.)	Adverse Effect on Special Status Species: Pallid Bat	S	Mitigation Measure BATS-1: Implement Measures to Protect Maternity Roosts of Special Status Bats.	LTS
	Adverse Effect on Special Status Species: Western Red Bat	S	Mitigation Measure BATS-1: Implement Measures to Protect Maternity Roosts of Special Status Bats.	LTS
	Adverse Effect on Special Status Species: American Badger	S	Mitigation Measure BADGER-1: Implement Measures to Avoid and Minimize Effects on American Badger.	LTS
	Adverse Effect on Special Status Species: Crotch Bumble Bee	S	Mitigation Measure BEE-1: Implement Measures to Avoid and Minimize Effects on Crotch Bumble Bee. Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site. Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal.	LTS
	Adverse Effect on Special Status Species: Sanford's Arrowhead	S	Mitigation Measure PLANT-1: Implement Measures to Avoid and Minimize Effects on Special Status Plants.	LTS
	Adverse Effect on Special Status Species: Bristly Sedge and Woolly Rose-Mallow	S	Mitigation Measure PLANT-1: Implement Measures to Avoid and Minimize Effects on Special Status Plants.	LTS
	Adverse Effect on Special Status Species: Winter-Run Chinook Salmon	S	Mitigation Measure FISH-1: Observe In-Water Work Windows. Mitigation Measure FISH-2: Analyze Hazardous Materials Spills and Implement Measures to Control Contamination. Mitigation Measure FISH-3: Implement Measures to Avoid and Minimize Effects on Listed Fish Species. Mitigation Measure FISH-4: Implement Measures to Avoid and Minimize Effects on Listed Fish Species. Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat. Mitigation Measure WQ-1: Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.	LTS

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TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic	Effect	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.6 Special Status Species (cont.)	Adverse Effect on Special Status Species: Spring-Run Chinook Salmon	S	Mitigation Measure FISH-1: Observe In-Water Work Windows.	LTS
			Mitigation Measure FISH-2: Analyze Hazardous Materials Spills and Implement Measures to Control Contamination.	
			Mitigation Measure FISH-3: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.	
			Mitigation Measure FISH-4: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.	
			Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.	
			Mitigation Measure WQ-1: Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.	
	Adverse Effect on Special Status Species: Central Valley Fall/Late Fall-Run Chinook Salmon	S	Mitigation Measure FISH-1: Observe In-Water Work Windows.	LTS
			Mitigation Measure FISH-2: Analyze Hazardous Materials Spills and Implement Measures to Control Contamination.	
			Mitigation Measure FISH-3: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.	
			Mitigation Measure FISH-4: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.	
			Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.	
			Mitigation Measure WQ-1: Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.	

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TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic	Effect	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.6 Special Status Species (cont.)	Adverse Effect on Special Status Species: California Central Valley Steelhead	S	Mitigation Measure FISH-1: Observe In-Water Work Windows. Mitigation Measure FISH-2: Analyze Hazardous Materials Spills and Implement Measures to Control Contamination. Mitigation Measure FISH-3: Implement Measures to Avoid and Minimize Effects on Listed Fish Species. Mitigation Measure FISH-4: Implement Measures to Avoid and Minimize Effects on Listed Fish Species. Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat. Mitigation Measure WQ-1: Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.	LTS
	Adverse Effect on Special Status Species: Green Sturgeon	LTS	None	LTS
3.7 Cultural Resources	Damage to or Destruction of Unknown or Subsurface Historic-Period Sites, Prehistoric-Period Archaeological Sites, and Native American Identified Tribal Cultural Resources	S	Mitigation Measure CR-1: Resolve Adverse Effects through a Programmatic Agreement and Historic Properties Treatment Plan. Mitigation Measure CR-2: Prepare an Archaeological Discovery Plan and an Archaeological Monitoring Plan. Mitigation Measure CR-3: Conduct Cultural Resources Awareness Training. Mitigation Measure CR-4: Implement Procedures for Discovery of Cultural Material. Mitigation Measure CR-5: Evaluate Any Tribal Cultural Resources Discovered and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects.	LTS
	Potential Damage to or Destruction of Previously Undocumented Human Remains	S	Mitigation Measure CR-6: Implement Procedures for Discovery of Human Remains.	LTS
3.8 Transportation and Circulation	Temporary Increase in Traffic Load or Temporary Decrease in Capacity along Designated Roadways in the Project Area	S	None	SU
	Increase Exposure of People to Significant Public Safety Hazards Resulting from Construction Activities on or Near the Public Road System	S	Mitigation Measure TR-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.	LTS

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TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic	Effect	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.8 Transportation and Circulation (cont.)	Increase Parking Demand	S	Mitigation Measure TR-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.	LTS
	Increase Hazards Due to a Deterioration of Roadways	S	Mitigation Measure TR-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.	LTS
	Interfere with Emergency Access	S	Mitigation Measure TR-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.	LTS
	Conflict or be Inconsistent with Vehicle-Miles-Traveled Standards	LTS	None	LTS
	Conflict with a Program, Plan, or Ordinance: Decreased Performance or Safety of Alternative Modes of Transportation	S	Mitigation Measure TR-1: Prepare and Implement a Traffic Control and Road Maintenance Plan. Mitigation Measure TR-2: Provide Bicycle and Pedestrian Access.	LTS
3.9 Air Quality	Potential Conflict with Air Quality Plan or Contribute Substantially to Air Quality Violation	S	Mitigation Measure AQ-1: Implement SMAQMD's Basic Construction Emissions Control Practices. Mitigation Measure AQ-2: Implement Enhanced Fugitive Dust Control Practices. Mitigation Measure AQ-3: Develop and Implement a Plan for Enhanced On-Site Exhaust Controls. Mitigation Measure AQ-4: Use Electric Construction Equipment. Mitigation Measure AQ-5: Pay NOx Mitigation Fee to SMAQMD.	LTS
	Potentially Expose Sensitive Receptors to Short-Term Dust Emissions	S	Mitigation Measure AQ-2: Implement Enhanced Fugitive Dust Control Practices.	LTS
	Potentially Expose Sensitive Receptors to Short-Term Emissions of Toxic Air Contaminants	S	Mitigation Measure AQ-1: Implement SMAQMD's Basic Construction Emissions Control Practices. Mitigation Measure AQ-2: Implement Enhanced Fugitive Dust Control Practices. Mitigation Measure AQ-3: Develop and Implement a Plan for Enhanced On-Site Exhaust Controls. Mitigation Measure AQ-4: Use Electric Construction Equipment.	LTS
	Potentially Expose Sensitive Receptors to Major Source of Odor	LTS	None	LTS
	Operational Emissions of Criteria Air Pollutants and Precursors	LTS	None	LTS

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TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic	Effect	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.10 Greenhouse Gas Emissions and Energy Consumption	Temporary, Short-term Generation of Greenhouse Gas Emissions or Conflict with an Applicable GHG Emissions Reduction Plan and Effects of Climate Change	S	Mitigation Measure GHG-1: Avoid, Minimize, and Compensate for Greenhouse Gas Emissions Effects.	LTS
	Result in a Potentially Significant Environmental Impact due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources, During Project Construction or Operation; and/or Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency	LTS	None	LTS
3.11 Noise	Temporary Increase in Ambient Noise Levels or Exposure of Sensitive Receptors to Excessive Noise or Vibration	S	Mitigation Measure NOISE-1: Implement Noise Reduction Practices. Mitigation Measure NOISE-2: Implement Vibration Control Measures.	LTS
3.12 Recreation	Temporary and Short-term Changes in Recreational Opportunities during Project Construction Activities	S	Mitigation Measure REC-1: Avoid and Minimize Effects on Recreational Use.	SU
3.13 Public Utilities and Service Systems	Result in Solid Waste Generation in the Project Area that Would Exceed Landfill Capacity	LTS	None	LTS
	Adversely Affect Emergency Response Services	S	Mitigation Measure UTIL-1: Avoid and Minimize Service Disruptions and Damage to Utilities and Infrastructure.	LTS
3.14 Hazards and Hazardous Materials	Possible Exposure of People and the Environment to Existing Hazardous Materials, Including Cortese-listed Sites	S	Mitigation Measure HAZ-1: Implement Stormwater Pollution Prevention Plan Best Management Practices and Test Site for Contaminants Prior to Construction.	LTS
	Interfere with Emergency Response Plan or Evacuation Plan	S	Mitigation Measure TR-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.	LTS

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Acronyms and Other Abbreviations

Acronym or Abbreviation	Definition
2017 Scoping Plan	*California's 2017 Climate Change Scoping Plan*
AB	Assembly Bill
ACE	annual chance exceedance
AFV	alternative fuel vehicle
APE	Area of Potential Effects
ARCF	American River Watershed Common Features
ARCF GRR	American River Watershed Common Features General Reevaluation Report
ARCF GRR FEIS/FEIR	May 2016 American River Watershed Common Features General Reevaluation Report Final Environmental Impact Statement/Environmental Impact Report
Arid West Supplement	*Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*
Basin Plan	*Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin*
BMP	best management practice
BO	biological opinion
BPWG	Bank Protection Working Group
Business Plan	Hazardous Material Release Response Plan
BWFS	Basin-Wide Feasibility Study
CAA	Federal Clean Air Act
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
Cal EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations

Acronym or Abbreviation	Definition
cfs	cubic feet per second
CHHSL	California Human Health Screening Level
City	City of Sacramento
CNDDB	California Natural Diversity Database
CO	carbon monoxide
County	County of Sacramento
CRHR	California Register of Historical Resources
CSUS	California State University, Sacramento
CUPA	Certified Unified Program Agency
CVFPB	Central Valley Flood Protection Board
CVFPP	Central Valley Flood Protection Plan
CWA	Clean Water Act
cy	cubic yards
dBA	A-weighted decibel
DOT	U.S. Department of Transportation
DWR	California Department of Water Resources
EA	Environmental Assessment
EIS/EIR	environmental impact statement/environmental impact report
EO	executive order
EP	Engineering Pamphlet
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 1992
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FR	*Federal Register*
FTA	Federal Transit Administration
GHG	greenhouse gas
GIS	geographic information system
GPS	Global Positioning System
GRR	general reevaluation report
H:V	slope ratio of horizontal to vertical

Acronym or Abbreviation	Definition
HMMAMP	Habitat Mitigation, Monitoring, and Adaptive Management Plan
HPMP	Historic Properties Management Plan
HPTP	Historic Properties Treatment Plan
HRA	health risk assessment
HSC	California Health and Safety Code
I-5	Interstate 5
I-80	Interstate 80
IEPR	Integrated Energy Policy Report
in/sec	inches per second
IWM	instream woody material
LAR	Lower American River
LARTF	Lower American River Task Force
lb/day	pounds per day
L_{eq}	average hourly noise level
LMA	local maintaining agency
L_{max}	maximum noise level
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendant
mm	millimeters
MRZ	Mineral Resource Zone
MSAT Protocol	Mobile Source Air Toxics Protocol
$MTCO_2e$/year	metric tons of carbon dioxide equivalent per year
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act of 1966
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NN	non-native
NO_x	oxides of nitrogen
NO_2	nitrogen dioxide

Acronym or Abbreviation	Definition
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NTU	nephelometric turbidity unit
NWIC	Northwest Information Center
O&M	operations and maintenance
OHWM	ordinary high-water mark
OSHA	Occupational Safety and Health Administration
PA	*Programmatic Agreement Among the U.S. Army Corps of Engineers and the California State Historic Preservation Officer Regarding the American River Common Features Project, Sacramento and Yolo Counties, California*
Parkway	American River Parkway
Parkway Plan	American River Parkway Plan
Phase 1 ESA	Phase 1 Environmental Site Assessment
$PM_{2.5}$	of 2.5 micrometers or less
PM_{10}	respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
PPV	peak particle velocity
PRC	California Public Resources Code
Project Area	project area for the American River Watershed Common Features, Water Resources Development Act of 2016 Project, American River Contract 3A, Subreach 1
Proposed Action	ARCF 2016 Project, American River Contract 3A
RM	river mile
ROG	reactive organic gases
RPA	Registered Professional Archaeologist
RWQCB	Central Valley Regional Water Quality Control Board
SAFCA	Sacramento Area Flood Control Agency
SAFE Rule	Safer Affordable Fuel-Efficient Vehicles Rule
SAM	Standard Assessment Methodology
SB	Senate Bill
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide

Acronym or Abbreviation	Definition
SPCCP	Spill Prevention Control and Countermeasures Plan
SRA	shaded riverine aquatic (habitat)
SRBPP	Sacramento River Bank Protection Project
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminant
TCR	Tribal Cultural Resource
TRAC	Technical Resource Advisory Committee
UAIC	United Auburn Indian Community
Unified Program	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program
Uniform Act	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
U.S. 50	U.S. Highway 50
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VdB	vibration decibels
VELB	valley elderberry longhorn beetle
VMT	vehicle miles traveled
WCM	Water Control Manual
WRDA	Water Resources Development Act
WRI	weighted relative response index

CHAPTER 1
Introduction

1.1 Proposed Action

1.1.1 Development of the Proposed Action

The Lower American River Task Force (LARTF) is a broad stakeholder group that focuses on flood, environmental, and recreational management issues affecting the lower reach of the American River from Folsom Dam to the Sacramento River. In the mid-1990s, LARTF members called for the formation of the Bank Protection Working Group (BPWG) to help plan, design, and implement bank protection features along the Lower American River (LAR). A primary goal of the BPWG is to support Federal, State, and local efforts to provide the highest level of flood protection for the surrounding community and the conservation of irreplaceable resources along the American River Parkway (Parkway). Together with the U.S. Army Corps of Engineers (USACE), the Central Valley Flood Protection Board (CVFPB), the California Department of Water Resources (DWR), and the Sacramento Area Flood Control Agency (SAFCA), the BPWG successfully helped to design and implement five bank protection sites along the LAR that integrated bank protection and habitat. Construction of these sites, referred to as LAR Sites 1–5, was authorized under the Sacramento River Bank Protection Project.

During that same era, the American River Watershed Common Features (ARCF) and the Folsom Dam Modifications projects, which were a part of the 1996 American River Watershed Project, were authorized by Congress in the 1996 Water Resources Development Act (WRDA), with the goal of providing a higher level of flood protection to the Sacramento area. These projects were intended to improve LAR levees to control seepage and increase stability, enlarge the outlet capacity of Folsom Dam, and raise Folsom Dam to increase the level of flood protection for the City and County of Sacramento. In 2002, LARTF participants cooperated in preparing the Lower American River Corridor Management Plan to provide a framework for integrated management of this reach of the river. This management plan served as a catalyst for updating the 1985 American River Parkway Plan in 2008.

Now, with both the Folsom Dam Joint Federal Project and the levee improvements of the American River Common Features WRDA projects completed, the ability to manage large flood events has been improved along the LAR by allowing more water to be safely released from Folsom Dam/Reservoir earlier in a major storm event. There is more flood storage capacity in Folsom Reservoir to control peak inflows and better manage the

releases, up to 160,000 cubic feet per second (cfs) into the LAR during flood emergencies. However, at the time the above-referenced projects were studied, the extent of erosion impacts was not well understood, and none of these projects implemented bank erosion protection measures to address the increased erosion potential from higher and longer releases from Folsom Dam.

As a result, in 2015, LARTF members called for the re-formation of the BPWG to help advise, plan, design, and implement bank erosion protection features along the LAR. The intent was to better understand how the river channel may respond under an extended 160,000 cfs release from Folsom Dam during an extreme flow event. A flow event of this magnitude could have the potential to induce substantial erosion and affect valuable resources in the Parkway and potentially lead to flooding in surrounding urban areas. Because of the highly technical issues facing the BPWG under this scenario, a multi-disciplinary committee composed of various agency and interested party stakeholders was developed. The committee initially consisted of flood control technical experts and was referred to as the Technical Advisory Committee. The need for additional natural resource expertise was identified and formed as the Resource Advisory Committee (RAC). Together, the Technical Advisory Committee and Resource Advisory Committee form the larger Technical Resource Advisory Committee (TRAC) to help consider both existing condition resource impacts and potential short-term and long-term impacts.

The work of the TRAC and its consultant team has focused on technical issues, including use of a more risk-based approach and consistency with identifying and evaluating erosion sites to be consistent with USACE and State (DWR, CVFPB, and Urban Levee Design Criteria) requirements. The efforts of these working groups have resulted in identifying the Proposed Action in this document.

1.1.2 Summary of the Proposed Action

The American River Watershed Common Features General Reevaluation Report Final Environmental Impact Statement/Environmental Impact Report (ARCF GRR FEIS/FEIR) analyzed the basic erosion protection measures that underlie the Proposed Action in this Supplemental EIR. However, some elements of those measures (specifics of designs, staging areas, construction methods, haul routes, disposal of soil, and mitigation sites) were not analyzed in the ARCF GRR FEIS/FEIR because final designs specifications had not been completed. Through project design and refinement, USACE and CVFPB have now identified specific locations and improvements to address erosion concerns, potential staging areas, haul routes, stockpile sites, and off-site mitigation that constitute the Proposed Action. This EIR supplements the ARCF GRR FEIS/FEIR by analyzing the environmental effects of these previously unquantified or unidentified elements of the erosion protection measures planned for the Proposed Action.

The Proposed Action in this document consists of: (1) the installation of approximately 3,000 linear feet of erosion protection and on-site riparian habitat features along one

levee segment of the LAR (Site 1-1); and (2) associated staging areas, stockpile sites, and haul routes. All activities for the Proposed Action comprise the Project Area.

1.2 Proposed Action Area

The Proposed Action is located in the City of Sacramento and in Sacramento County, California, along the left bank of the American River in the same location as Interstate Business 80 (also known as the Capitol City Freeway) and upstream of the City of Sacramento's Sutter's Landing Park in the American River Parkway.

1.3 Purpose of and Need for Proposed Action

The Proposed Action has been formulated to achieve the purpose, needs, and objectives identified in the ARCF GRR. The Proposed Action needs and objectives define the underlying need for the project to which USACE is responding, in conformance with the requirements of the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] 1502.13 and 33 CFR Part 325, Appendix B).

The purpose described in the ARCF GRR is to reduce the overall flood risk within the study area. An unacceptably high risk of flooding from levee failure threatens the public safety of approximately 530,000 people, as well as property and critical infrastructure throughout Sacramento. The purpose of the Proposed Action is to construct multiple erosion control measures within the LAR to allow conveyance of the 200-year (160,000 cfs) flood flow without risk of levee failure.

The Sacramento metropolitan area is one of the most at-risk areas for flooding in the United States and has a high probability of flooding due to its location at the confluence and within the floodplain of two major rivers, the Sacramento and American Rivers. Both of these rivers have large watersheds with very high potential runoff. Past runoff events have overwhelmed the existing flood management system, which was designed and built many years ago, before modern construction methods were employed. High flows in the American River associated with flood flows are eroding critical components of the flood management system. In addition to the high risk of flooding, the consequences of flooding in the study area would be catastrophic in terms of life loss and property damage.

The Proposed Action is needed to reduce the risk of levee failure associated with erosion, particularly during high-flow events on the LAR. Site 1-1 is located along a portion of the LAR where the levee is steep and relatively close to the river channel. During high flows, this is subjected to high velocities that significantly increase the risk of erosion, possibly leading to levee failure. The Proposed Action would strengthen the levee system within LAR Site 1-1 and reduce the risk of levee failure from erosion and the risk of a catastrophic flood event within the Sacramento metropolitan area. The need for on-site habitat mitigation site is to mitigate for the adverse effects of the Proposed Action and the larger ARCF GRR on biological resources.

1.4 Related Documents

The Proposed Action is a component of a larger effort in the Sacramento region. USACE and the CVFPB jointly published the ARCF GRR Draft EIS/EIR in March 2015, in accordance with the requirements of NEPA and the California Environmental Quality Act (CEQA) (State Clearinghouse No. 2005072046). The Draft EIS/EIR analyzed the impacts of the ARCF GRR to reduce the overall flood risk within the delineated study area. The study area includes the City of Sacramento and surrounding areas. A FEIS/ FEIR was issued in January 2016, and comments were received between January 22 and February 22, 2016. A revised FEIS/FEIR was issued in May 2016. The Record of Decision for the ARCF GRR was signed by the Assistant Secretary of the Army (Civil Works) on August 29, 2016. The ARCF GRR was authorized by Congress in December 2016. The following is a list of ARCF 2016 Project documentation, or documentation for related actions, which may be relevant to this Supplemental EIR:

- May 1988, Sacramento River Flood Control System Evaluation, Initial Appraisal Report—Sacramento Urban Area, Phase I, USACE Sacramento District.
- December 1991, American River Watershed Investigation California Feasibility Report: Part I—Main Report and Part II—EIS/EIR.
- December 1991, American River Watershed Investigation California Feasibility Report, Volume 2, Appendix G: Section 404 Evaluation.
- March 1996, Supplemental Information Report, American River Watershed Project, California: Part I—Main Report and Part II—Final Supplemental EIS/EIR.
- June 27, 1996, Chief's Report on the Final Supplemental EIS, signed by Acting Chief of Engineers, Major General Pat M. Stevens; and July 1, 1997, Record of Decision on the Final Supplemental EIS, signed by Director of Civil Works, Major General Russell L. Furman.
- November 2008, FEIS for 408 Permission and 404 Permit to Sacramento Area Flood Control Agency for the Natomas Levee Improvement Project, Sacramento, CA, prepared by EDAW/AECOM, Sacramento, California.
- October 2010, FEIS on the Natomas Levee Improvement Project Phase 4b Landside Improvement Project, Sacramento, CA, prepared by AECOM, Sacramento, California.
- September 2015, Final Biological Opinion for the American River Common Features General Reevaluation Report, issued by the U.S. Fish and Wildlife Service, Sacramento, California.
- September 2015, Final Fish and Wildlife Coordination Act for the American River Common Features General Reevaluation Report, issued by the U.S. Fish and Wildlife Service, Sacramento, California.

- December 2015 (revised May 2016), American River Watershed Common Features General Reevaluation Report, FEIS/EIR.
- July 2016, FEIR, North Sacramento Streams, Sacramento River East Levee, Lower American River, and Related Flood Improvements Project, prepared for SAFCA by GEI Consultants.
- August 2016, Record of Decision on ARCF GRR 2015 FEIS/EIR signed by Assistant Secretary of the Army (Civil Works), Jo-Ellen Darcy.
- June 2017, Reinitiation of the ARCF Project, Sacramento County, California.
- February 2019, Final Supplemental EA/Initial Study, ARCF Seepage Stability Berm, Reach D Contract 1.
- May 2019, Reinitiation of the ARCF Project, Sacramento County, California.
- June 2019, Final Supplemental EA/Initial Study, ARCF 2016 Project Beach Stone Lakes Mitigation Site.
- November 2019, Final Supplemental EA/EIR, ARCF 2016, Sacramento River East Levee Contract 1.
- June 2020, Reinitiation, with USFWS, of the ARCF Project, Sacramento County, California.
- September 2020, Reinitiation, with NMFS, of the ARCF Project, Sacramento County, California.
- August 2021, Final Supplemental EIS/EIR, ARCF 2016, Sacramento Weir Widening.
- November 2020, Final Supplemental EA/EIR, ARCF 2016, Sacramento River East Levee Contract 2.
- March 2021, Final Supplemental EA/EIR, ARCF, Water Resources Development Act of 2016, American River Contract 1.
- March 2021, Reinitiation of Formal Consultation on the American River Common Features (ARCF) 2016 Project, Sacramento and Yolo Counties, California Biological Opinion
- May 2021, Endangered Species Act Section 7(a)(2) Biological Opinion, Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the American River Watershed Common Features General Reevaluation Report Reinitiation 2020 Biological Opinion
- June 2021, Final General Conformity Determination for ARCF, Water Resources Development Act of 2016.
- September 2021, Final Supplemental EIS/EIR, ARCF, Water Resources Development Act of 2016, American River Contract 2.

1.5 Authority

As part of the larger American River Watershed Common Features Project, the Proposed Action is authorized by Section 101(a)(1)(A) of the WRDA of 1996, Public Law No. 104-303 Section 101(a)(1), 110 Stat. 3658, 3662–3663 (1996), as amended by Section 366 of the WRDA of 1999, Public Law No. 106-53, Section 366, 113 Stat. 269, 319-320 (1999). Additional authority was provided following the interim general reevaluation study in Section 1322(b) of the WRDA of 2016, Public Law No. 114-322, Section 1322, 130 Stat. 1707, also known as the Water Resources Infrastructure Improvements for Nation Act, and Public Law 115-123 (Bipartisan Budget Act of 2018).

1.6 Purpose of the Supplemental Environmental Impact Statement/Environmental Impact Report

This Supplemental EIR fulfills the following purposes: (1) describes the existing environmental resources in the Project Area; (2) evaluates the environmental effects of the alternatives (see Chapter 2, *Alternatives*) on these resources; and (3) identifies measures to avoid, minimize, or reduce any effects to a less-than-significant level. This Supplemental EIR has been prepared in accordance with CEQA. The CVFPB anticipates that USACE can implement the portion of the authorized ARCF project described in this document as the Proposed Action without additional CEQA analysis beyond this Supplemental EIR.

Section 15162 of the State CEQA Guidelines (California Code of Regulations [CCR], Title 14, Section 15000 et seq.) provides that when an EIR has been certified for a project, a subsequent EIR need not be prepared unless a substantial change in the project, a substantial change in the surrounding circumstances, or new information of substantial importance comes to light which reveals the project would have one or more new or substantially more severe significant environmental effects not discussed in the certified EIR. A lead agency may choose to prepare a supplement to an EIR, rather than a subsequent EIR, when conditions that require preparation of a subsequent EIR are met, and "only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation" (State CEQA Guidelines, 14 CCR Section 15163).

This Supplemental EIR supplements (does not replace) the previously certified ARCF GRR FEIS/FEIR and addresses project modifications, changed circumstances, and new information that could not have been known with the exercise of reasonable diligence at the time the prior document was certified, as required under State CEQA Guidelines (14 CCR Section 15163).

The purpose of this Supplemental EIR is to provide the additional information necessary to make the previous EIR adequate for the project as modified. Accordingly, pursuant to the State CEQA Guidelines (14 CCR Section 15163), the Supplemental EIR need contain only the information necessary to analyze the project modifications, changed

circumstances, and new information that triggered the need for additional environmental review. This Supplemental EIR is intended to:

- address new or substantially more severe significant environmental effects related to any project modifications;
- recommend mitigation measures to avoid any new or substantially more severe significant environmental effects or reduce them to a less-than-significant level;
- update impact analysis and mitigation measures where conditions have changed since the publication of the ARCF GRR FEIS/FEIR;
- provide minor additions and changes to the ARCF GRR FEIS/FEIR warranting a Supplemental EIR for the following reasons:
  - there would be no new potentially significant and unavoidable or significant and unavoidable impacts from the Proposed Action;
  - the few new impacts from the Proposed Action can be mitigated to a less-than-significant level with implementation of measures identified in Chapter 3 of this Supplemental EIR, *Environmental Setting, Impacts, and Mitigation Measures*; and
  - applicable measures in the existing Mitigation Monitoring and Reporting Program continue to apply to the Proposed Action.

The analysis in this Supplemental EIR focuses on project modifications and refinements, and details that were not analyzed in the ARCF GRR FEIS/FEIR, including staging areas, haul routes, stockpile sites, and more detailed cultural resources information, which constitute the Proposed Action for this Supplemental EIR. Each topic section includes a discussion of those issues and impacts that were not considered in the ARCF GRR FEIS/FEIR. This Supplemental EIR has been prepared in accordance with the requirements of CEQA for supplemental environmental documents.

1.7 Decision Needed

As the CEQA lead agency, the CVFPB will review and consider the information presented in this Supplemental EIR, evaluate comments received after dissemination of this Supplemental EIR, respond to those comments, and examine the entire administrative record (including the administrative record for the ARCF GRR FEIS/FEIR), when determining whether to approve the proposed project modifications. The ARCF GRR FEIS/FEIR analyzed many elements of the Proposed Action levee reconstruction work, including bank protection and launchable rock trench features. The CVFPB must decide whether to certify the Supplemental EIR under CEQA.

This Supplemental EIR is also intended to be used by SAFCA, DWR, the Central Valley Regional Water Quality Control Board, (RWQCB) and the California State Lands Commission (SLC) as responsible agencies under CEQA. DWR and SAFCA are non-

federal partners to the project and will provide project funds and oversight. A Water Quality Certification under Section 401 of the Clean Water Act will be required, and RWQCB will consider this Supplemental EIR prior to issuing the certification. A State Lands Commission lease may be required prior to constructing and maintaining the project, in which case SLC will consider this Supplemental EIR prior to issuing the lease.

CHAPTER 2
Alternatives

2.1 Introduction

The ARCF GRR FEIS/FEIR previously analyzed the following alternatives: the No Action/No Project Alternative and two action alternatives. The action alternatives considered were similar except that one alternative included widening of the Sacramento Weir and Bypass (Alternative 2). The ARCF GRR FEIS/FEIR found Alternative 2 to be the preferred alternative. This chapter describes the No Action/No Project alternative and the Proposed Action, which consists of previously unanalyzed improvements and related actions to be undertaken within a section of levee along the left bank[1] of the Lower American River (LAR). The Proposed Action levee section described in this chapter extends from River Mile[2] (RM) 3.8 to RM 4.2 and includes design and construction details not previously described in the ARCF GRR FEIS/FEIR.

2.2 No Action/No Project Alternative

The CVFPB is required to consider No Project as one of the alternatives for consideration to comply with the requirements of CEQA. The CEQA No Project Alternative assumes that the project analyzed in the ARCF GRR FEIS/FEIR has not been constructed. Therefore, with the No Project Alternative, it is assumed that no additional features would be implemented by the Federal Government or State and local interests to achieve the project purpose, over and above those elements of the authorized ARCF Project and subsequent approved and certified supplemental EIRs. Under the No Project alternative, the CVFPB would not conduct any additional work to address seepage, slope stability, overtopping, or erosion concerns in the Sacramento metropolitan area. The local maintaining agency (LMA) would address vegetation and encroachments over time under the System-Wide Improvement Framework agreement, which would improve the condition of the levee system, but it would be speculative to assume that any additional work would be conducted to address the seepage, slope stability, overtopping, or erosion concerns in the project area.

Therefore, the CEQA No Project Alternative in the ARCF GRR FEIS/FEIR is incorporated by reference in this EIR.

1 Riverbanks are designated as left (L) or right (R) when facing downstream.

2 River miles are measured from the confluence of the American and Sacramento River at 0 and increase going upstream.

2.3 Proposed Action

The ARCF GRR FEIS/FEIR identified areas within the LAR that require improvements to address ongoing erosion to prevent levee failure. There are two erosion protection measures that were proposed and approved for the American River levees in the ARCF GRR FEIS/FEIR: (1) bank protection; and (2) launchable rock[3] trenches. Terminology used to describe specific features of the levees is shown on **Figure 2-1**.

The levee reach of the LAR analyzed in the ARCF GRR FEIS/FEIR was subdivided into four subreaches for the purpose of erosion analysis, as shown in **Figure 2-2**. The Proposed Action evaluated in this Supplemental Draft EIR consists of implementing measures within Subreach 1, between LAR RM 3.8 and 4.2 (otherwise referred to in this Draft Supplemental EIR as Site 1-1), to prevent erosion, which, if unaddressed, could potentially undermine the levee foundation causing it to fail. This levee segment was identified by the Technical Resource Advisory Committee (TRAC) and Bank Protection Working Group (BPWG) as having a high risk of failure among the LAR Subreaches during high-flow events due to erosion. The Proposed Action includes the erosion protection measures proposed and approved for the American River levees in the ARCF GRR FEIS/FEIR and includes specific locations and design of the proposed erosion protection improvements, construction staging areas, haul routes, stockpile locations, and other details not previously described or identified in the ARCF GRR FEIS/FEIR. The locations of the elements of the Proposed Action are shown on **Figure 2-3**. The Proposed Action is described below in Sections 2.3.2 to 2.3.6, which provide details of proposed design elements, construction considerations, and schedules for each of the components summarized here.

2.3.1 Design Objectives

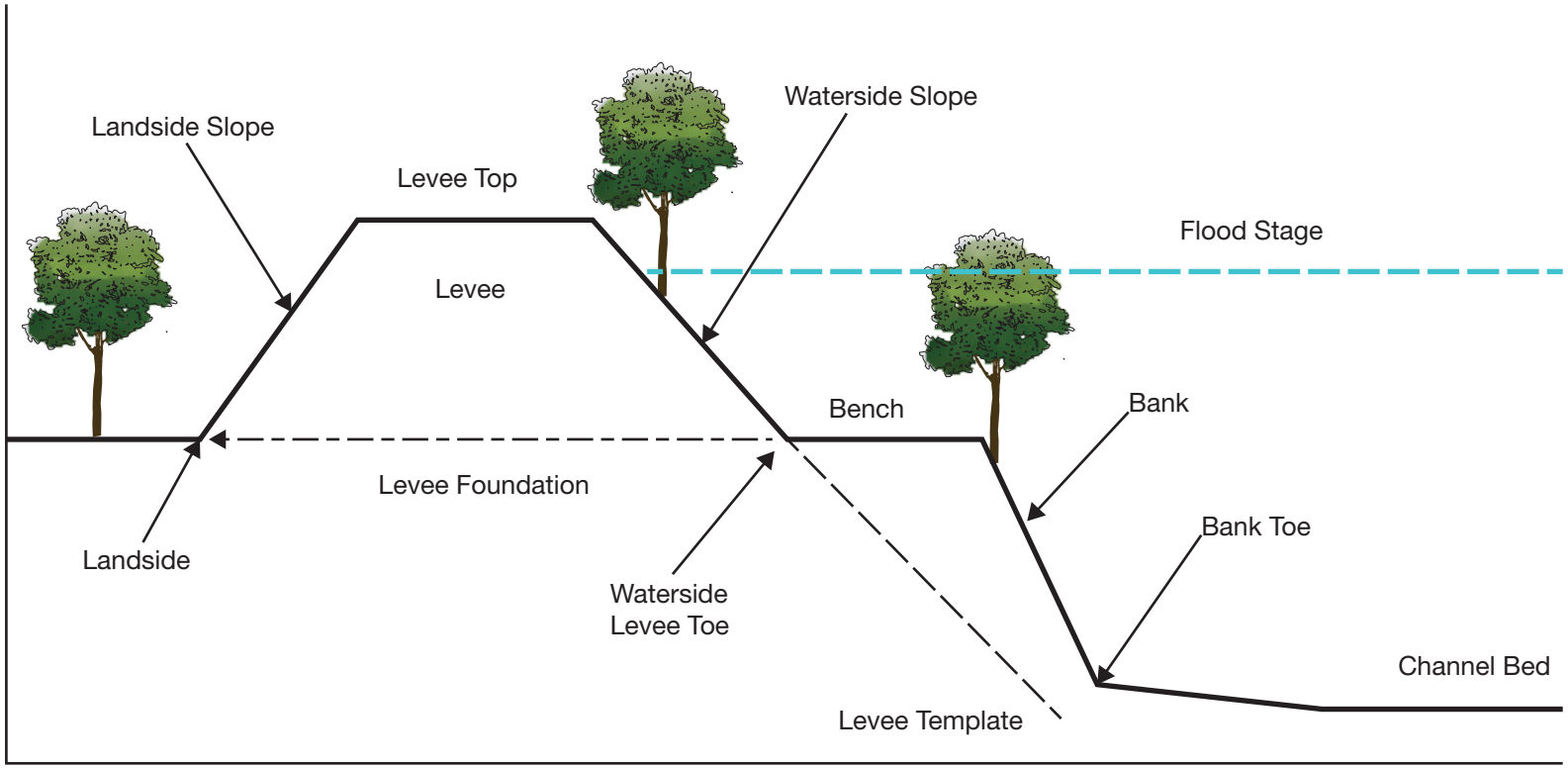
The design objectives included in the ARCF GRR FEIS/FEIR (pages 7 to 13) are incorporated by reference. Additional design objectives for the Proposed Action include:

Hydraulic Capacity: The Proposed Action must avoid or offset hydraulic impacts in order not to increase the risk of levee overtopping.

Environmental Resource Impacts: Although impacts on resources would be avoided where possible, short-term impacts due to construction are considered unavoidable. To compensate for unavoidable impacts on-site, the elements of the Proposed Action have been designed to improve the overall long-term on-site resource conditions, where feasible.

However, off-site mitigation may still be required and could provide substantial opportunities to improve overall ecosystem values along the LAR.

[3] Launchable rock is a term used to describe a type of rock revetment design typically used for locations where it is impractical to install revetment to the maximum predicted scour elevation. The launchable rock is placed as a thick blanket at the toe or bed of the river with adequate volume such that when scour occurs below the blanket, the rock will launch into the eroded area and arrest the progression of bank erosion.



Note: Not to scale, for illustrative purposes only

SOURCE: USACE

ARCF 2016 American River Contract 3A

Figure 2-1
Levee Terminology

ESA

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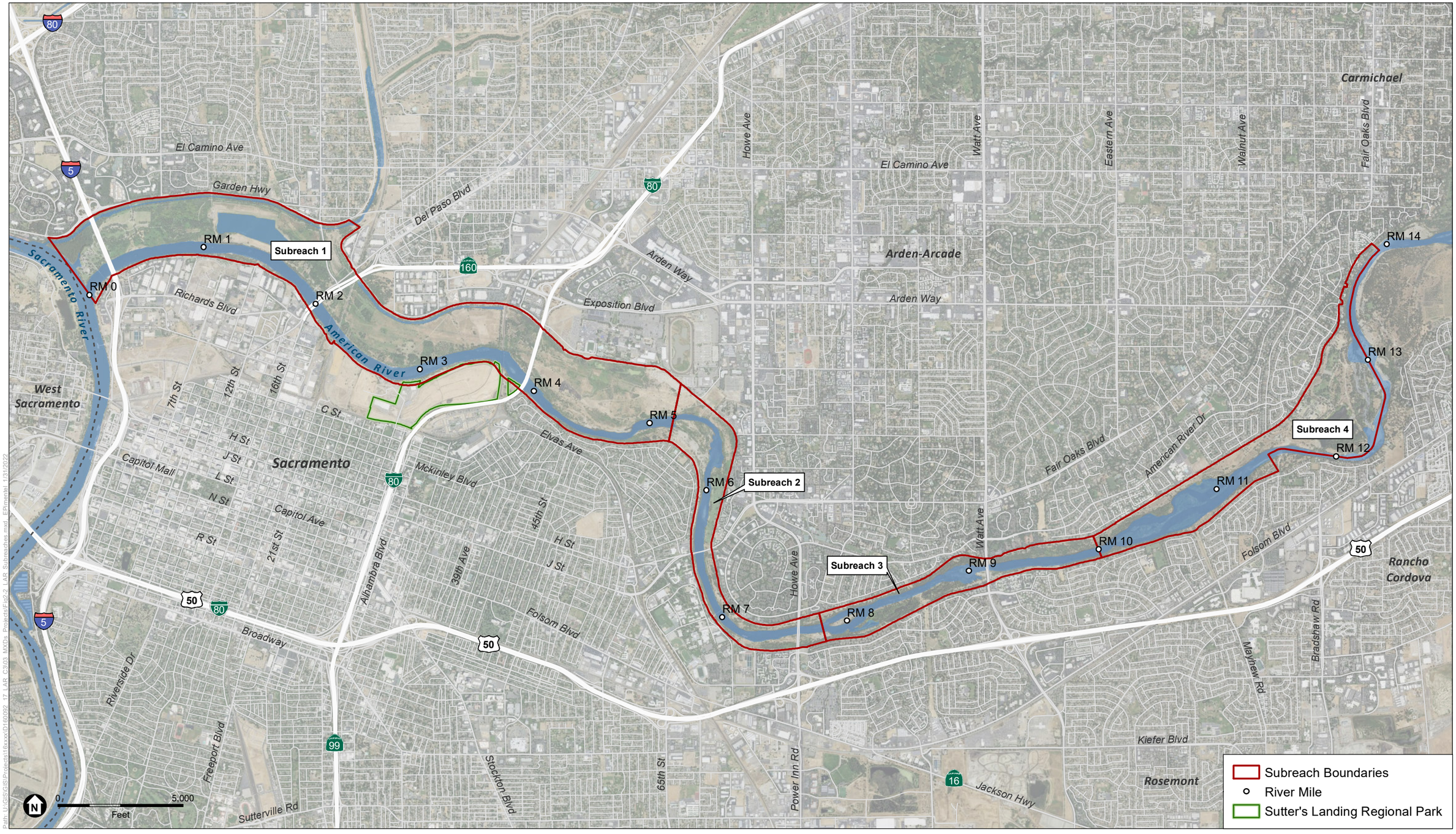

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SOURCE: USDA, 2018; NHC, 2021; ESA, 2022

ARCF 2016 American Rivert Contract 3A

Figure 2-2
Lower American River Subreaches

ESA

Path: U:\GIS\GIS\Projects\16xxxx\D160092_17_LAR_C3\03_MXDs_Projects\Fig2-3_ProjectArea.mxd, EPimentel 1/31/2022

SOURCE: Esri, 2021; USDA, 2018; ESA, 2022

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Figure 2-3
Project Area

ESA

Aesthetics and Recreation: The American River Parkway Plan, consistent with the State and Federal Wild and Scenic Rivers Acts, specifies that erosion control projects should include a revegetation program that screens the project from public view, provides for a naturalistic appearance of the site, and restores affected habitat values.

Infrastructure: Impacts to roadway and major utility infrastructure would be minimized to the extent practicable. Impacts to American River Parkway (interchangeable with Parkway in this Supplemental EIR) infrastructure would also be minimized.

Biological Opinion Requirements: Both the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) issued Biological Opinions (BOs) in 2015 for the ARCF GRR EIS/EIR. Both BOs include Conservation Measures, Reasonable and Prudent Measures, and Terms and Conditions.

The potential effects of the Proposed Action on the species and/or their critical habitat originally covered in the BOs have been re-evaluated based on updated designs to ensure all aspects of the Proposed Action would not jeopardize the continued existence of species or adversely modify critical habitat. The USFWS BO was issued in March 2021 and the NMFS BO was issued in May 2021. Both BOs concluded that the Proposed Action would not jeopardize the continued existence of species or adversely modify critical habitat.

2.3.2 Site 1-1 Erosion Protection Description

Site 1-1 is located on the left bank of the LAR between LAR RM 3.8 and 4.2 (approximately 3,000 linear feet) and is divided into two segments; one segment extends from LAR RM 3.8 to 3.9, downstream of the Interstate 80 Business (I-80 or Capital City Freeway); and one segment that extends from LAR RM 3.9 to 4.2 underneath and upstream of the Capital City Freeway. Site 1-1 is in a section of the LAR where a sand bed substrate and Sacramento River backwater and tidal effects are more prominent in comparison to the upstream areas of the LAR. These conditions have the potential to result in future scour and erosion at the levee toe and embankment. The designs for Site 1-1 include a combination of planting benches with a launchable rock toe, a rock blanket, regrading of the riverbank, and include riverbank and levee embankment revetment protection. These design elements are described in the following sections.

2.3.2.1 Planting Bench with Launchable Rock Toe and Buried Rock

The Proposed Action would construct a launchable rock toe to protect against toe scour. The launchable rock toe is designed to "launch" once erosion of the channel bottom progresses during a flood event to the toe of the rock. This launched layer of riprap is designed so that it would cover the eroded surface of the new channel bottom and inhibit further progression of the eroded slope. Once fully launched a layer of riprap would extend from the channel toe to the maximum depth of scour predicted in the river channel.

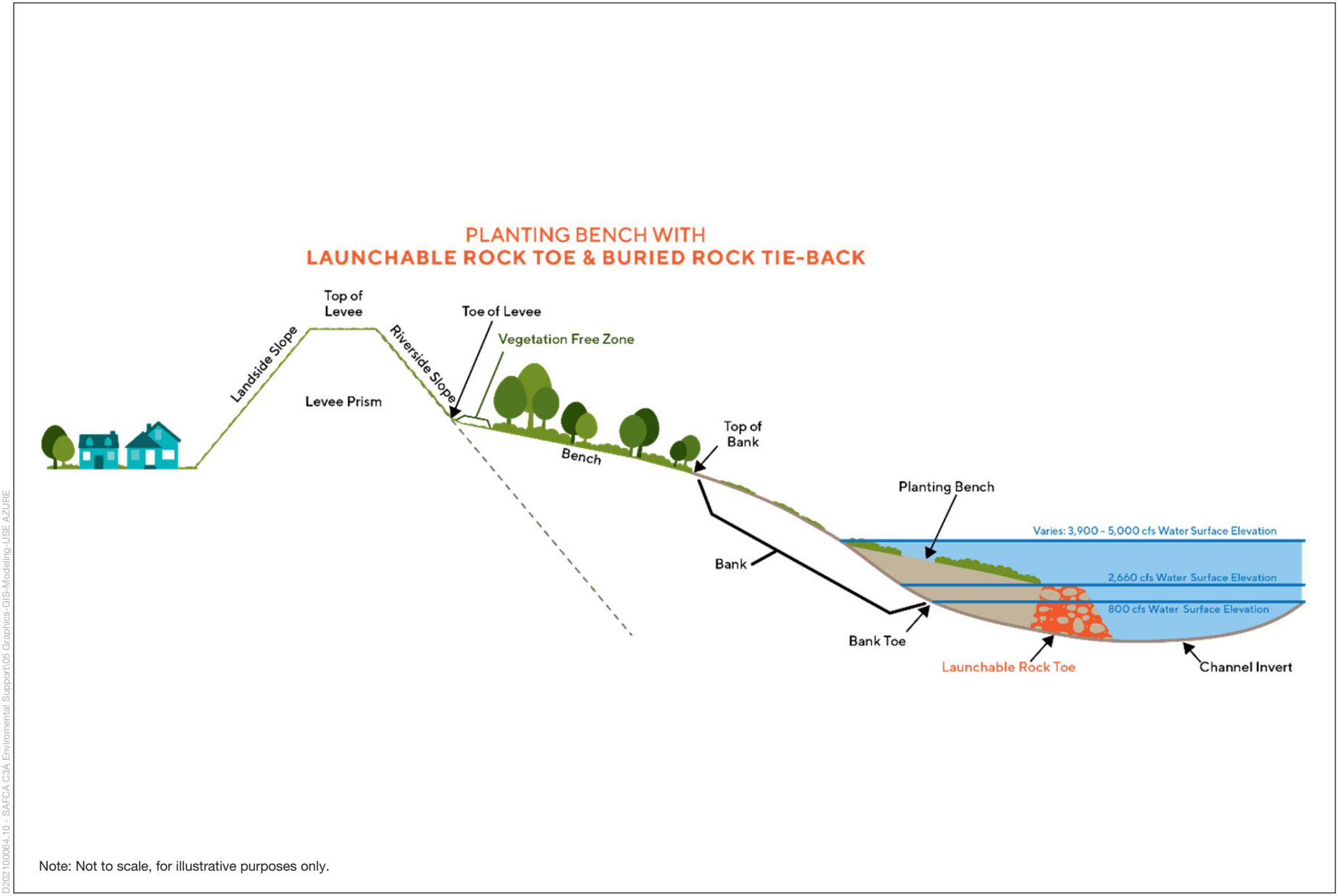
The launchable rock toe would be placed where possible to allow the creation of a plantable soil filled bench to provide aquatic and terrestrial habitat at a variety of flow

conditions. The target width of the planting bench would be 40 feet wide. Where planting benches are included, this feature has a waterside elevation for the top of the launchable rock toe that varies approximately from the 800 cubic feet per second (cfs) water surface elevation (WSE) to the 2,660 cfs WSE (mean summer low and normal flows, respectively). The upper elevations of the planting bench roughly corresponds to the 5,000 cfs WSE. The design elevations were based on site topographic measurements of the approximate vegetation elevation in Site 1-1. The planting bench generally ranges in elevation from 6.3 to 14.5 feet above mean sea level. The top of the landside planting bench would provide more woody vegetation, in particular large canopy trees, closer to the edge of the launchable rock toe and, therefore, provide more shaded riverine aquatic habitat. The design of the levee profile used the modelled 2,660 WSE elevation that ranges from around 7 to 17.5 feet, with the median WSE at 11.5 feet. The low point of the waterside top of the launchable rock toe would be at the median 800 cfs flow elevation. This would create shallow submerged habitat during most of the year, and would place much of the launchable rock toe below water levels most of the year, thereby reducing the amount of visible rock. The portions of the bench between the 800 cfs and 2,660 cfs flows would form aquatic habitat with a soil/sand substrate within these flow rates. The slope of the launchable rock toe would generally be no steeper than 1 vertical to 2 horizontal (1V:2H) with a top width of four feet.

The design of Site 1-1 includes tie-backs that are irregularly spaced at a maximum of approximately 250 feet apart to a minimum of approximately 105 feet apart. The tie-backs would help to limit the erosion extents and subsequent damage to a planting bench during a launching event. See **Figure 2-4** for an illustration of typical planting bench and launchable rock toe and buried rock features.

2.3.2.2 Soil-Filled Levee Embankment and Riverbank Revetment

Levee embankment soil-filled revetment includes a layer of riprap that is filled with soil at a 70 to 30 ratio (70-percent riprap/30-percent soil). This soil to riprap ratio is reflective of successful designs which have been used in the Sacramento area. The riprap is sized to remain stable during the 160,000 cfs and 192,000 cfs design flow events and provide erosion protection to the levee prism. Levee embankment soil filled revetment is required by the design in areas with applied velocities and shear stresses exceeding critical values for the levee surface material (e.g., grass on the levee slope). The top of the revetment is set at the elevation of non-erosive velocity/shear stress for the 160,000 cfs flow event. The slope of the soil filled levee embankment rock varies and is generally not steeper than 2.5H:1V. Post construction, the soil-filled revetment would be covered with one foot of soil and stabilized with native vegetation suited for the elevations at which the revetment occurs and would include woody riparian plantings at the elevations below the ordinary high water mark (OHWM), valley oak dominated forest above the OHWM, and native grasses in the vegetation free zone. The portion of revetment under the I-80 Bridge would be 100-percent rock without soil. See **Figure 2-5** for a typical cross section diagram of the soil-filled levee embankment revetment.

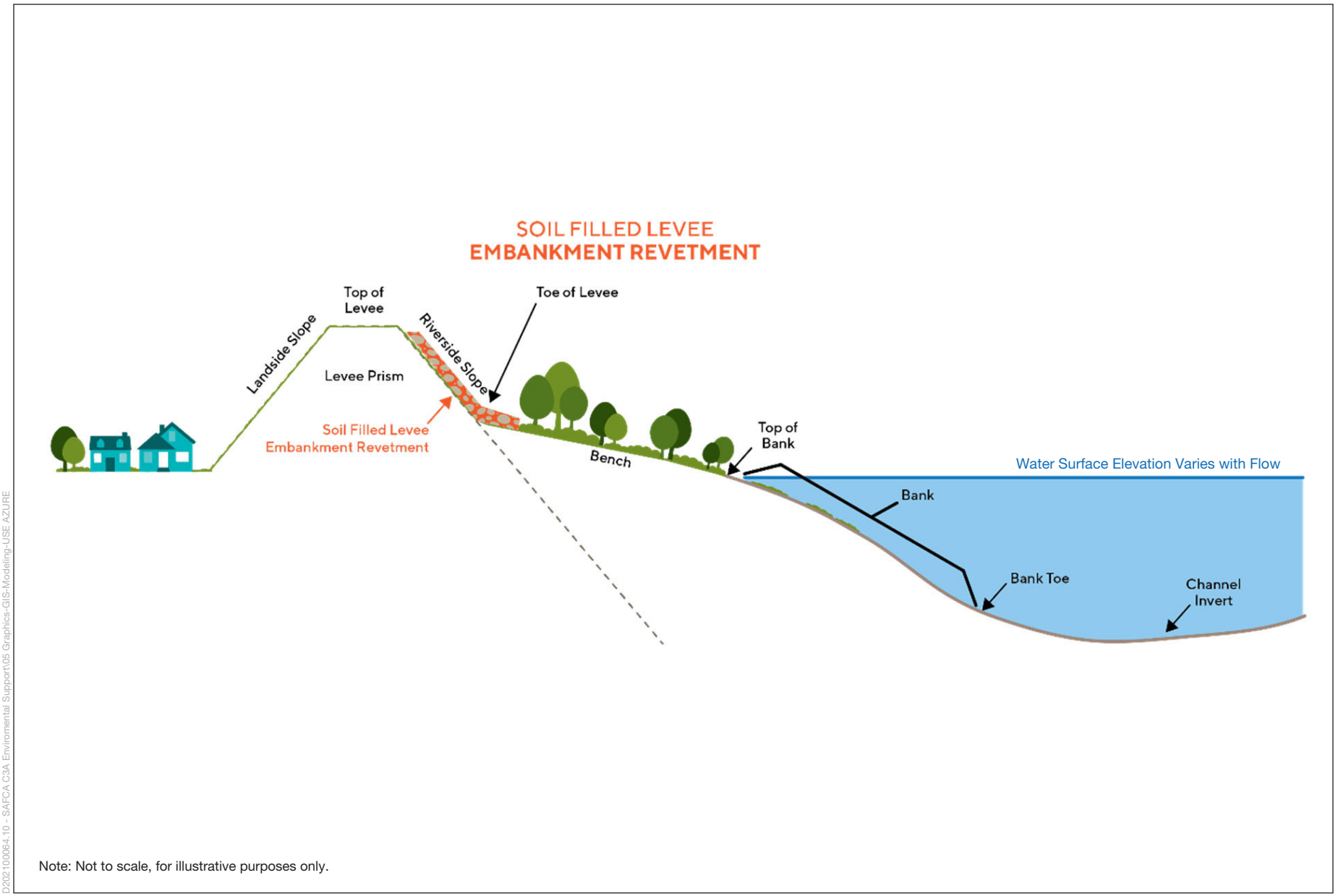


SOURCE: USACE

ARCF 2016 American River Contract 3A

Figure 2-4
Typical Cross Section Diagram of Planting Bench and Launchable Rock Toe and Buried Rock

ESA



SOURCE: USACE

ARCF 2016 American River Contract 3A

Figure 2-5
Typical Cross Section Diagram of Soil-filled Levee Embankment Revetment

2.3.2.3 Site 1-1 Downstream Segment Design

The primary erosion risk along Site 1-1 is an erodible bank susceptible to toe scour. The primary features of the segment include a launchable rock toe, planting bench, embankment cut and levee embankment revetment. See **Figure 2-6** for the location of the work areas at Site 1-1, including staging areas and temporary construction access ramps. See **Figure 2-7** and **Figure 2-8** for typical cross section and plan views, respectively, of the launchable rock toe design and levee bank design at the downstream segment of Site 1-1.

The launchable rock toe is designed as noted in Section 2.3.2.1 with a 4-foot top width, 1V:2H side slopes, a minimum height of 5 feet, and a variable top elevation. The top of the planting bench would tie into the revetment and would act as the toe of the embankment cut. The planting bench would be approximately 40 feet wide. The embankment cut would regrade the existing slope from the toe to a slope of 1V:2.5H. A layer of soil filled rock revetment would be placed on the regraded riverbank slope from the top of the bank down to the launchable rock toe at the median WSE of 11.6 feet above mean sea level. Below this elevation, only clean rock would be placed. The soil filled rock revetment would be composed of a 24-inch thick layer of soil filled rock with 12-inches of soil fill placed along the top of the rock layer to allow for the establishment of vegetation which would occur after construction.

The riverbank revetment would end at LAR RM 3.8 and tie into the existing revetment at a slope of 1V:2.5H. The slope would include soil filled riprap above the normal water surface. The launchable rock toe protection would protect the toe of the bankline from erosion and scour (lowering of the channel bed and existing ground) that could continue to over-steepen the existing grade of the bank and induce failure of the levee. The alignment of the launchable rock toe protection was designed to allow for fill to be placed along a section of over-steepened bank. The launchable rock toe would run continuously along the waterside edge of Site 1-1. Coir fabric erosion control blankets would be installed over the seeded topsoil. In the spring following the rockwork installation the revetment would be planted with native plants. Instream woody material (IWM) would be installed on the landside of the launchable rock toe to provide habitat for juvenile salmonids.

2.3.2.4 Site 1-1 Upstream Segment Design

The primary features in the upstream segment of Site 1-1 include a launchable rock toe, rock blanket, planting bench and riverbank revetment. This section is located from the I-80 Bridge upstream to LAR RM 4.2. The launchable rock toe under the I-80 Bridge is designed with a 4-foot top width, 1V:2H side slopes, a minimum height of 6.7 feet, with a top elevation approximately at the WSE below the 2,660 cfs (mean summer flow). The top of the launchable rock toe is to be used as the toe of the rock blanket. The rock blanket would be constructed with a slope of 1V:11H. The base of the rock blanket would be installed on top of the launchable rock toe and is the extension of the riverbank revetment design as it ties into the launchable rock toe at a slope of 1V:3H. The riverbank revetment would be constructed at grade with a maximum slope of 1V:2.5H. Where the existing bank is steeper than 1V:2.5H, acceptable material fill would be used to build up

the existing bank to the design slope of 1V:2.5H. The riverbank revetment would be composed of a 24-inch layer of riprap that meets Federal Highway Administration (FHWA) Class I requirements. A typical plan and cross-sectional view of these features is shown on **Figure 2-9** and **Figure 2-10** described below in detail.

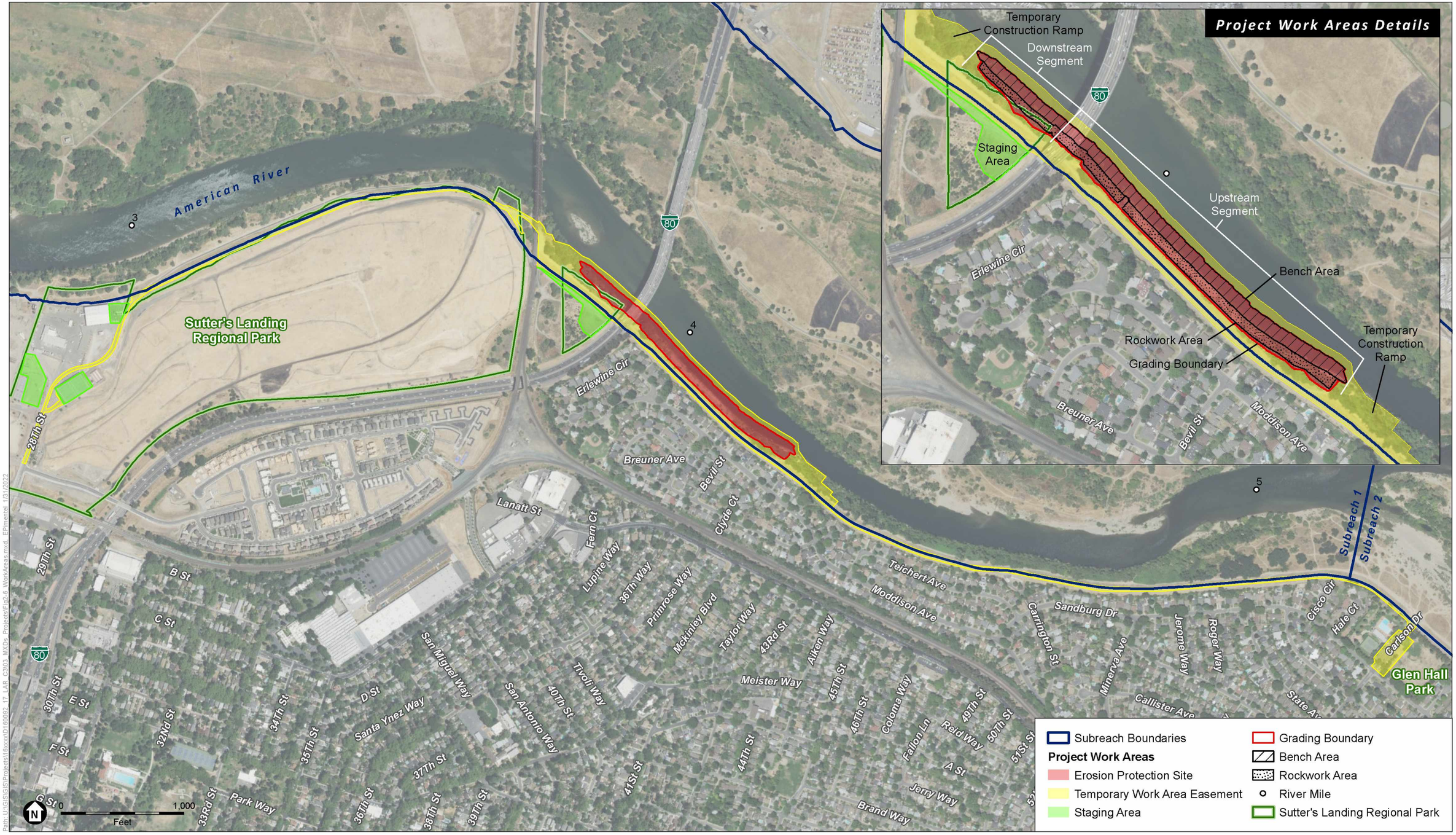
From the upstream edge of the I-80 Bridge, the launchable rock toe is designed with a 4-foot top width, 1V:2H side slopes, riprap meeting FHWA Class I requirements, and a variable top elevation approximately at the WSEs equal to 800 cfs (low summer flow) and 2,660 cfs (mean summer flow). The top of the launchable rock toe in this reach upstream of the I-80 Bridge would be used as the toe of the planting bench, and the variation in the top elevation of the launchable rock toe would create a variable slope in the planting bench. The planting bench is designed to have an average width of 40 feet.

The levee embankment revetment would be constructed at grade, with a maximum slope of 1V:2.5H composed of a 24-inch soil filled rock layer and a 12-inch soil fill layer. The 24-inch layer of soil filled rock placed on the embankment would continue down the bank to the launchable rock toe to an elevation of 11.60 feet above mean sea level, below which clean rock would be installed. Soil fill would be placed above the soil filled rock layer to the design grade elevation and would be planted after construction. Coir fabric erosion control blankets would be installed over the seeded topsoil. IWM would be installed after completion of the seeding and erosion blanket installation above the landside of the launchable rock toe to provide habitat for juvenile salmonids. and A one-foot layer of soil would be installed on the soil filled rock slope to 33 feet above mean sea level. Willow pole cuttings would also be planted in the bench by the rockwork construction contractor after completion of seeding, erosion blanket installation and IWM installation. The willow cuttings would be placed in the area of the bench closest to the water edge, in the gaps between the IWM and along the landside edge of the IWM. In the spring following the rockwork installation the revetment would be planted with native plants.

2.3.2.5 Design Around Stormwater Outfalls

Three utilities exist within Site 1-1: the Elvas Pump Station outfall pipe; the I-80 Bridge runoff pipe; and a City of Sacramento force main outfall and headwall. The Elvas Pump Station outfall pipe is located just downstream of the I-80 Bridge and runs beneath the existing levee prism. The pump station is owned and maintained by Caltrans. An existing pipe network under the I-80 Bridge drains into the Elvas Pump Station that pumps stormwater to the existing rock channel and outfall into the American River.

A 4-foot wide flat bottom ditch would be installed below the Elvas Pump Station outfall. The ditch would be composed of FHWA Class II riprap, with a minimum 3-foot riprap thickness and 9-inch bedding layer. The ditch would have a 10-percent slope extending the ditch to tie in with the rock riverbank revetment. The rock riverbank revetment design would be placed at grade above the I-80 runoff pipe and would tie into existing grade at a slope of 1V:2.5H, wrapping around the existing I-80 outfall design. The revetment design would tie into the existing grade prior to the I-80 outfall structure and runoff pipe to not alter or disrupt service of the outfall.

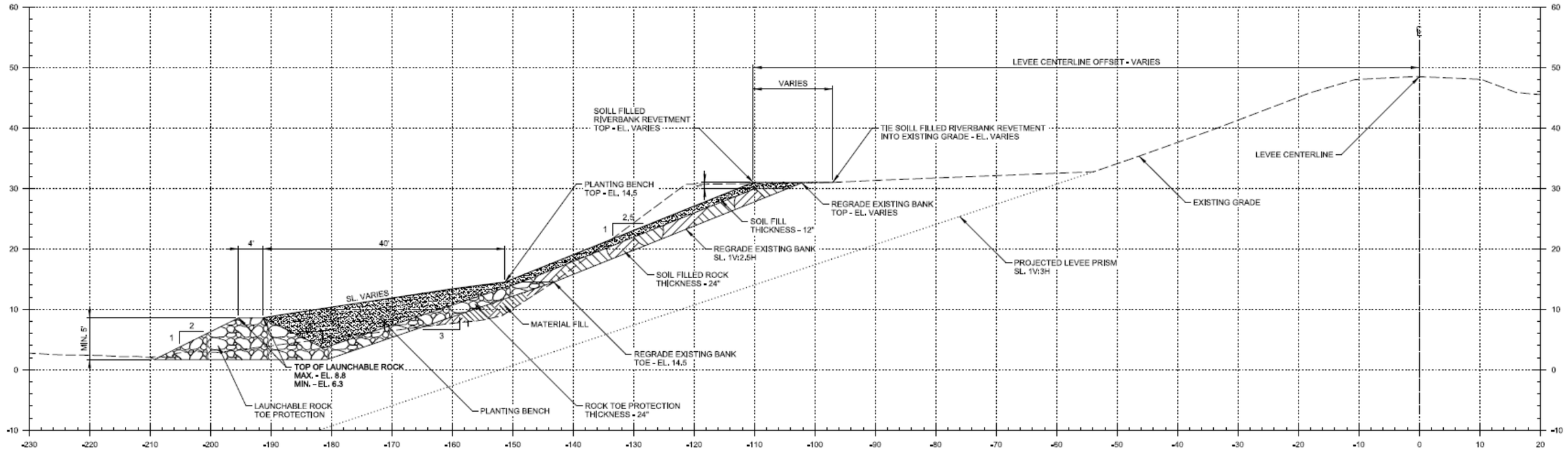


SOURCE: Esri, 2021; USDA, 2018; ESA, 2022

ARCF 2016 American River Contract 3A

Figure 2-6
Work Areas

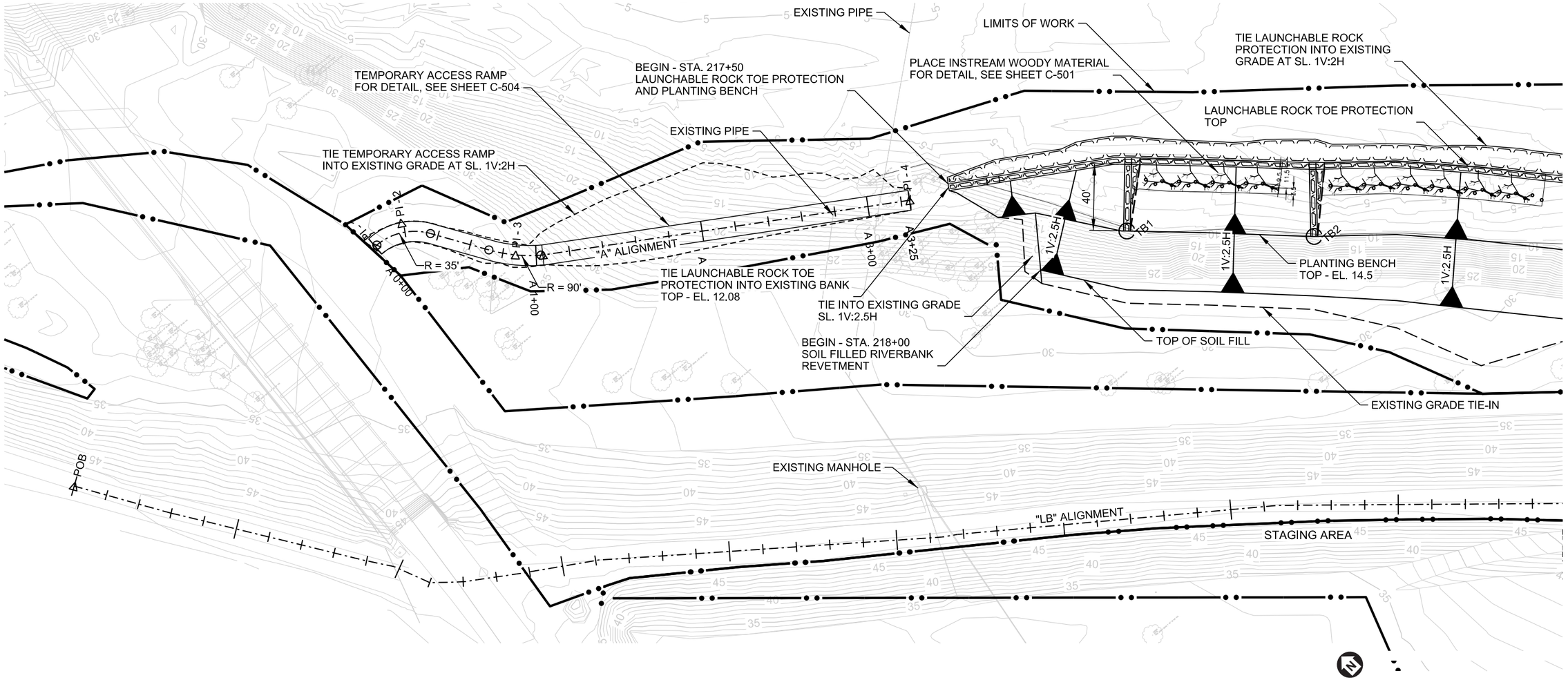
ESA



SOURCE: USACE

ARCF 2016 American River Contract 3A

Figure 2-7
Typical Cross Section View of Site 1-1 Downstream Design Components



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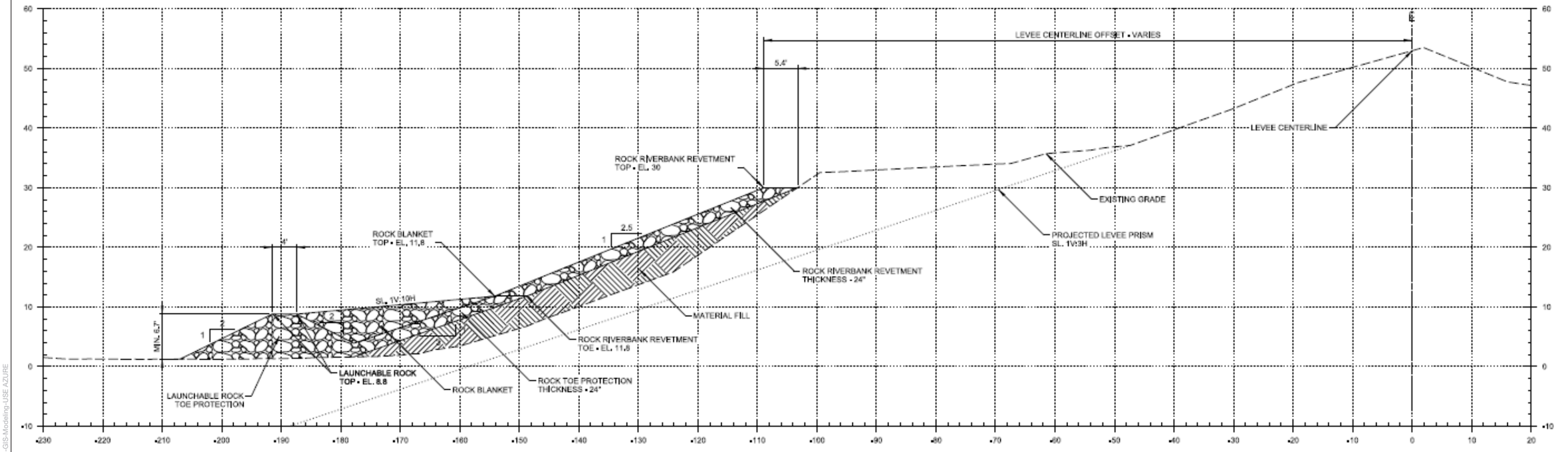
SOURCE: USACE

ARCF 2016 American River Contract 3A

Figure 2-8
Typical Plan View of Site 1-1 Downstream Design Components

ESA



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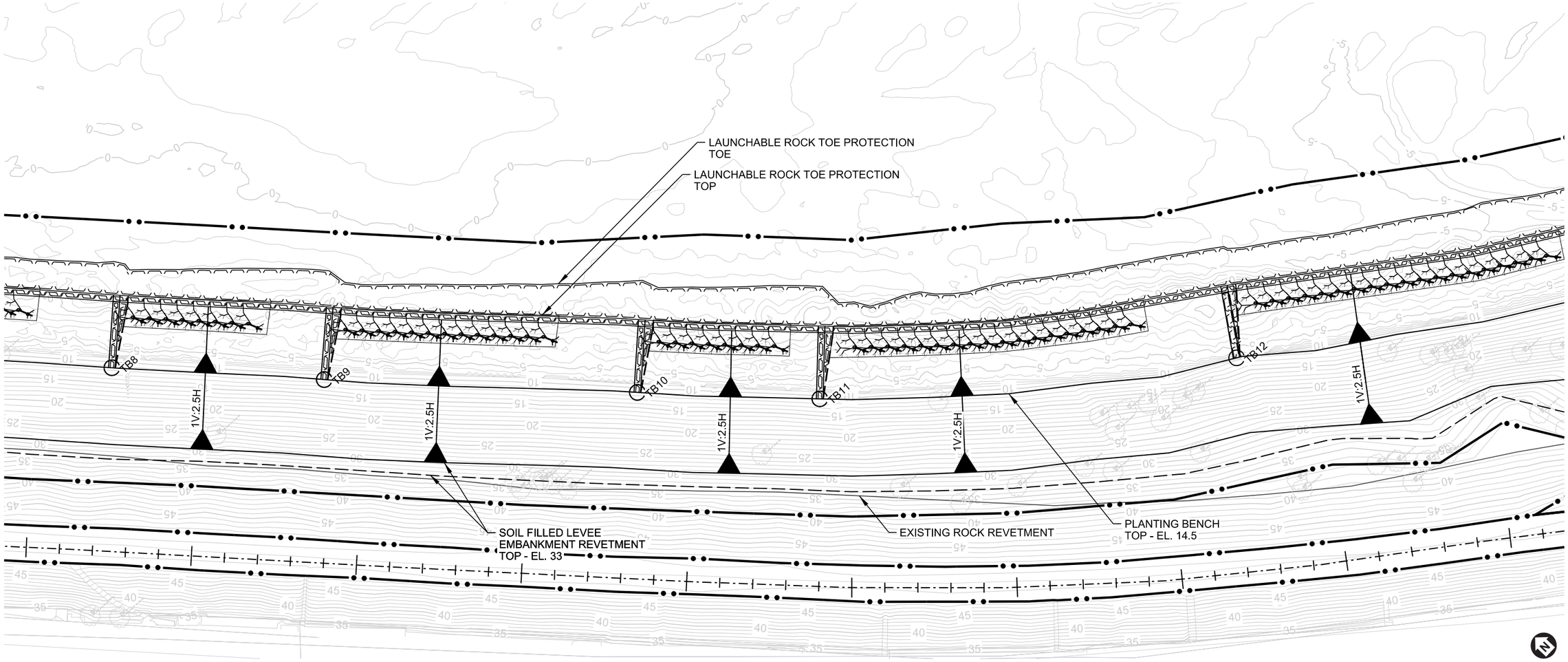
SOURCE: USACE

ARCF 2016 American River Contract 3A

Figure 2-9
Typical Cross Section View of Design Components at Upstream Segment of Site 1-1

ESA



SOURCE: USACE

ARCF 2016 American River Contract 3A

Figure 2-10
Typical Plan View of Design Components at Upstream Segment of Site 1-1

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The City of Sacramento force main is located approximately 200 feet upstream of the I-80 Bridge. The force main is a 66-inch diameter steel pipe and headwall with a flap gate. The Proposed Action would wrap the levee embankment revetment around the existing force main headwall. A rock apron would also be installed at the force main outfall along with the launchable rock toe protection. The rock apron would be composed of FHWA Class VI riprap, with a minimum 4.5-foot riprap thickness and 1.25-foot bedding layer. The rock apron's initial width would be approximately 11 feet and would taper out to a 35-foot width after a length of 30 feet. The rock apron would tie into the launchable rock toe protection. Due to the outfall velocities, FHWA Class VI riprap would be used for the launchable rock toe at this location.

2.3.2.6 Instream Woody Material

Along the lower bench of Site 1-1, IWM structures consisting of whole trees with rootwads intact would be installed to increase the roughness of the bench and to provide fine-textured woody material along the river margin for juvenile salmonid rearing habitat at an elevation of the low flow period between August and December (approximately between the 2,660 cfs WSE to 800 cfs WSE). The trees used for IWM installation would be orchard trees approximately 20 to 30 feet in height with trunk diameters between 10 and 20 inches. The IWM trees would be arranged in a linear fashion along the bench at the launchable rock toe, encompassing approximately 80 percent of the shoreline between the rock tie backs. This placement is intended to maximize the use of the plantable portions of the bench for planting of native riparian forest vegetation. Additionally, the IWM is designed to reduce hazards to boaters and swimmers by angling the branches in the downstream direction to the greatest extent feasible. This would reduce the chance of swimmers, rafters or boaters being caught on the IWM. The IWM would use metal or wooden anchors buried in the bench soil to hold the structures in place. The anchors would be 3.5-foot square plates with half-inch diameter steel cables extending up to just below the bench surface terminating in cable eyes. From the buried cable eyes, 5/8-inch diameter manila rope would loop over the trunks of the whole trees to secure them. IWM trees are expected to function for a minimum of approximately 3 years while the newly planted vegetation becomes established on the lower bench.

2.3.3 Onsite Mitigation

2.3.3.1 Onsite Mitigation Design

Erosion protection features would require clearing of vegetation for earthwork and placement of revetment resulting in loss of terrestrial and aquatic habitat. The Proposed Action habitat mitigation would be completed through elderberry transplants, onsite plantings and additional offsite compensatory mitigation primarily for habitat impacts on valley elderberry longhorn beetle (VELB), salmonids, and yellow-billed cuckoo. Elderberries removed from the project site would be transplanted elsewhere in the Parkway, to the extent practicable, at designated existing mitigation sites analyzed, approved, and certified under previous Supplemental EIRs completed under the ARCF GRR FEIS/FEIR for Contracts 1 and 2. The transplants would occur at the same time as

the vegetation removal so that the elderberries would not be damaged because of the vegetation removal. In addition to transplanting elderberry shrubs, compensatory mitigation for the loss of habitat for VELB would be required at a 3:1 ratio at the offsite mitigation site(s), which could include existing mitigation bank(s) and/or mitigation sites outside the Parkway.

Mitigation from impacts on salmonid and riparian habitats would be made partially onsite with planting areas at appropriate WSEs and as space allows. Therefore, planting areas would be sized based on site-specific constraints and design performance of erosion protection measures with the goal of maximizing the amount of on-site mitigation within the erosion protection design at Site 1-1. The planting benches were designed to provide a minimum 40 feet width where feasible to provide sufficient width and soil volume to support vegetation growth and create tree canopy to provide shade and habitat values to replace the habitat lost onsite to the construction of the erosion protection measures. Because mitigation ratios are higher than 1:1, it is not possible to mitigate for all impacts of the Proposed Action on site. Impacts that are not mitigated for on site would be mitigated at offsite mitigation sites and/or through conservation bank credits.

At Site 1-1, the embankment behind the launchable rock toe would be protected with soil filled riverbank revetment. The planting bench and riverbank soil filled revetment form a riprap trough filled with soil. Rock tie-backs oriented perpendicular to the river flow are located periodically at a varying spacing along the bench. The rock tie backs would extend from the launchable rock toe to the rip rap placed on the riverbank on the landside of the bench. The rock tiebacks would serve to limit loss of planting bench soil should high flows initiate erosion of the planting bench soil. The rock tie-backs would form the high point of the planting bench. The tie-backs slope down from the landside edge of the planting bench to the high point of the top of the launchable rock toe.

The overall objectives of the planting bench are to provide habitat and minimize visible rock revetment. The waterside top of the launchable rock berm would vary in elevation with a high point coinciding with the location of the rock tiebacks. This is set at approximately the 2,660 cfs WSE, which is the approximate elevation of the vegetation line along the LAR. The 2,660 cfs WSE is the typical flow rate expected at the time of construction. Emergent aquatic plant communities are frequently found in areas where the 2,660 cfs WSE intercepts shallow slopes with soil substrates. The low point of the waterside top of the launchable rock toe is set at approximately the 800 cfs WSE. This would create shallow submerged habitat during many times of the year, and also places much of the launchable rock toe below water most of the year, and reducing the amount of visible rock. The portions of the bench between the 800 and 2,660 cfs WSEs would form aquatic habitat with a soil/sand substrate within those flow rates. Additionally, the installation of IWM (previously described) would provide aquatic habitat to compensate for the loss of salmonid habitat.

The Proposed Action would revegetate the erosion protection measures with native vegetation to replace the vegetation removed by the construction of the Proposed Action.

A 15-foot wide area adjacent to the bike trail would be planted with native grasses, forbs, and canopy trees. To minimize restrictions on vegetation management methods along the bike path, elderberries would not be planted within 30 feet of the bike path.

2.3.3.2 Planting Elements

Site Preparation

Revegetation of the bank protection features and other areas disturbed by construction activities would include planting of the areas with native plants using live cuttings, nursery grown container plants and seeding. Live cuttings would be installed at the waterside edge of the bench in a 10-foot wide strip along the riverside edge of the planting bench, where not obstructed by IWM. A row of live cuttings would be installed as close to the IWM as possible. Nursery grown container plants would be planted on the planting bench, riverbank revetment and areas disturbed by construction according to the planting designs. See **Figure 2-11** for typical views of IWM and planting bench design components.

Elderberry Transplanting

Elderberry transplants would be taken from Site 1-1 to any of the previously constructed mitigation sites in the LAR, as designed and approved under the Contract 1 and Contract 2 projects. Elderberry transplants would be clustered in groups from 3 to 12 shrubs along the rows. The transplants and associated vegetation would be arranged with existing plantings would group elderberries in larger masses with associated native vegetation interspersed between the elderberry transplants. Also, larger canopy native vegetation would not be located in the elderberry mitigation sites to allow ample solar access to the elderberry transplants. All transplanted elderberry shrubs within the Parkway would be planted a minimum of 30 feet from all trails and roads to prevent future maintenance conflicts. Canopy tree plantings would be arranged to maintain sufficient solar access for maintaining sufficient elderberry growth. Transplanting of the shrubs would be in compliance with the 2017 USFWS guidelines. A wire mesh cage or similar device would be installed in the hole prior to plant installation to protect against gopher browse. Above ground screens and may be installed to aid growth and deter herbivore browsing. The areas between the planting rows would be seeded with native grasses by broadcast, drill, or hydroseeding.

Proposed Planting Mix

The planting mix for onsite would include a number of native riparian and upland plants species, which may include valley oak (*Quercus lobata*), boxelder (*Acer negundo*), Fremont cottonwood (*Populus fremontii*), riparian shrubs, and grasses, and would be consistent with agency guidelines for VELB mitigation[4] and the American River

[4] U.S. Fish and Wildlife Service. 2017. *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (*Desmocerus californicus dimorphus*). Sacramento, CA. Available: https://www.fws.gov/sacramento/documents/VELB_Framework.pdf.

Parkway Plan list of approved plants.[5] In general, the planting mixes would target species common to the various native riparian forests, woodlands, and savanna found growing in the American River Parkway.

Irrigation

A temporary irrigation system would be installed for establishment and maintenance period of the transplant and associative plant material. Water pumped from the river edge would be applied by drip or spray irrigation. The irrigation system may be partially or entirely removed for seasonal high-water flows. The pump system and fish screen would conform to the anadromous salmonid passage facility design criteria[4] issued by NMFS in July 2011.[5] The irrigation system would be required to provide the necessary water quantity and frequency to both elderberry transplants and container plants.

Irrigation would be applied at rates and frequencies to maximize plant growth and health. The goal is to provide ample irrigation to depths below the plants root zone, allowing ample water for growth and promoting deep rooting. Watering frequency would decrease as the plants establish; however, the overall volume of water would remain high to provide sufficient water for growth, deep saturation beyond the root zone to continue to promote deep rooting. This irrigation strategy provides for both rapid plant growth and drought tolerance to rooting to maximal depth within the establishment period.

Weed Control

Weed control on erosion control revetments and habitat benches is intended to foster the plantings and any volunteer native vegetation. In general, most volunteer plant growth, with the exception of invasive exotic plants, is beneficial to stabilizing the sites and making them resistant to erosion. Weed control would consist primarily of hand tools, mechanical means (e.g., weed eaters and mowing) on both the soil-filled slope and planting benches timed to foster native grass growth and reduce competition for light from exotic plants with the plantings and any volunteer native vegetation. Spot applications of herbicides registered for use in and near aquatic habitats may be utilized to address particularly invasive exotic species. Additionally, weed control would be necessary to allow continued access to the site for maintenance of browse guards and the irrigation system.

Browse Control

Browse control would be provided by caging individual plants and fencing clusters of plants. Continuous water side beaver fencing that does not provide frequent access points to the river would not be used. At a minimum, access points would be provided every hundred feet. Beaver would be the most problematic source of browse, followed by deer browse. Although smaller animals such as rabbits and voles may browse the onsite mitigation, these species are typically less of a problem to onsite plantings.

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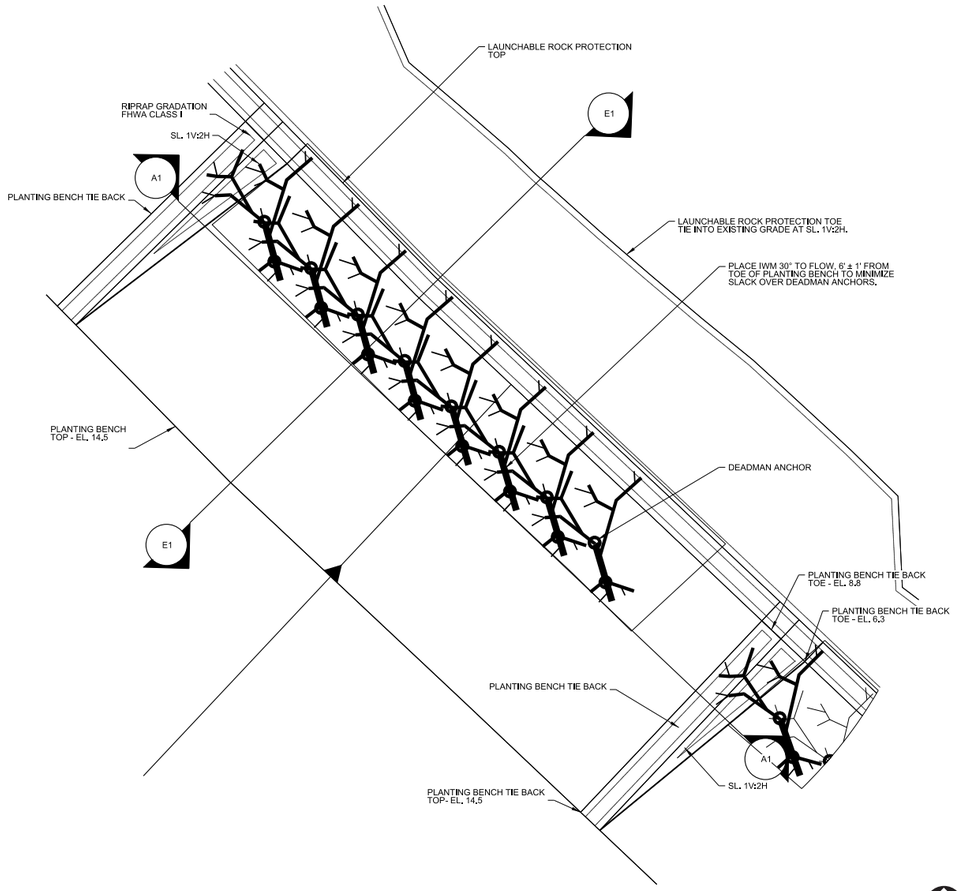
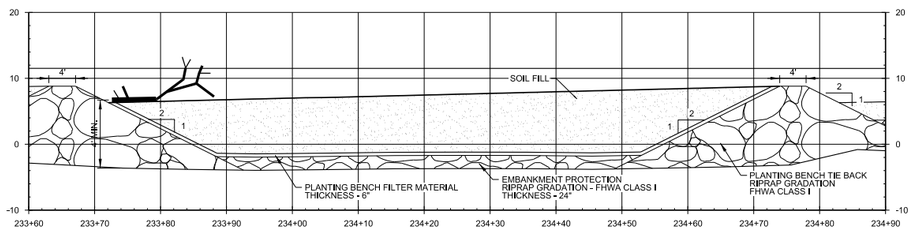
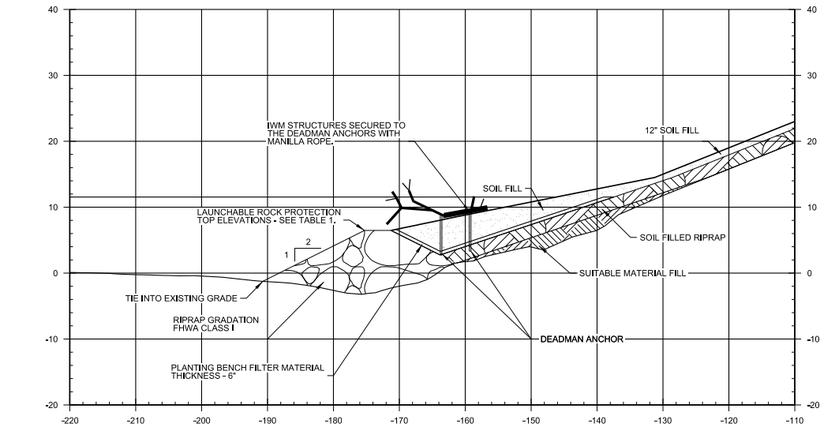
5 County of Sacramento. 2008. *American River Parkway Plan 2008*. p. 16. Terrestrial Resource Policy 3.2.1 Planning and Community Development Department. Available: https://regionalparks.saccounty.net/Parks/Documents/Parks/ARPP06-021909_sm.pdf.



C1 PLAN: PLANTING BENCH
SCALE: 1" = 10'



A1 PROFILE: PLANTING BENCH
SCALE: 1" = 10'



E1 SECTION: PLANTING BENCH
SCALE: 1" = 10'

SOURCE: USACE

ARCF 2016 American River Contract 3A

Figure 2-11
Typical Views of IWM and Planting Bench Design Components

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Maintenance

Maintenance activities would start immediately following completion of the initial planting. The following activities would be performed throughout the year although some would vary according to weather and season: general clean-up maintenance of the sites would occur throughout the year, clean-up maintenance would generally include picking up trash, vandalism repairs, and the removal of used planting accessories (e.g., bamboo stakes, ties, browse guards). For watering maintenance, crews would connect the pump to the irrigation system for each irrigation cycle per the irrigation schedule shown in **Table 2-1**. Crews would weed within the watering basins of the transplants and within an 18-inch radius of each woody and grass associated plant, so nonnative herbaceous growth would not compete for soil moisture per the schedule in Table 2-1. Maintenance crews would mow weeds to below six inches in height during the growing season. Mowing would conform to the schedule in Table 2-1.

TABLE 2-1
THREE-YEAR MAINTENANCE SCHEDULE FOR ONSITE MITIGATION IN THE AMERICAN RIVER PARKWAY

Monitoring Year	Watering Transplants	Watering Associated Plants	Weeding Transplants and Associates	Tractor Mowing	String Trimmer Mowing
Year 1 (March 15-November 15)	Minimum of 50 gallons of water no more than 1 week apart or as required to maximize growth rates	Minimum of 10 gallons per plant twice a week or as required to maximize growth rates	As needed to keep weeds less than 12" in planting basins	80%	20%
Year 2 (March 15-November 15)		Minimum of 30 gallons per plant every week to 10 days or as required to maximize growth rates	As needed to keep weeds less than 12" in planting basins	60%	40%
Year 3		Minimum of 50 gallons per plant every 10 to 14 days or as required to maximize growth rates	As needed to keep weeds less than 12" in planting basins	40%	60%
Firebreaks	Firebreaks are cleared of weeds and graded once per year				

NOTE:

[1] Adjustments may be made to species if it appears a particular species was not successful on a site
Watering: Years 1 & 2, March 15–November 15 and Year 3, April 1–October 31.
Weeding: Years 1-3: March 1–September 30.
Mowing: Four times per year.

2.3.4 Other Construction Considerations for Site 1-1

2.3.4.1 Site Preparation and Mobilization

Site preparation would begin with trimming and/or removal of vegetation where construction access and activities would occur. Vegetation would be removed between October 2022 and February 2023, before the nesting season of birds (see *Construction Workers and Schedule* section), as feasible. After these activities, mobilization would include the application of temporary best management practices for the control of off-site

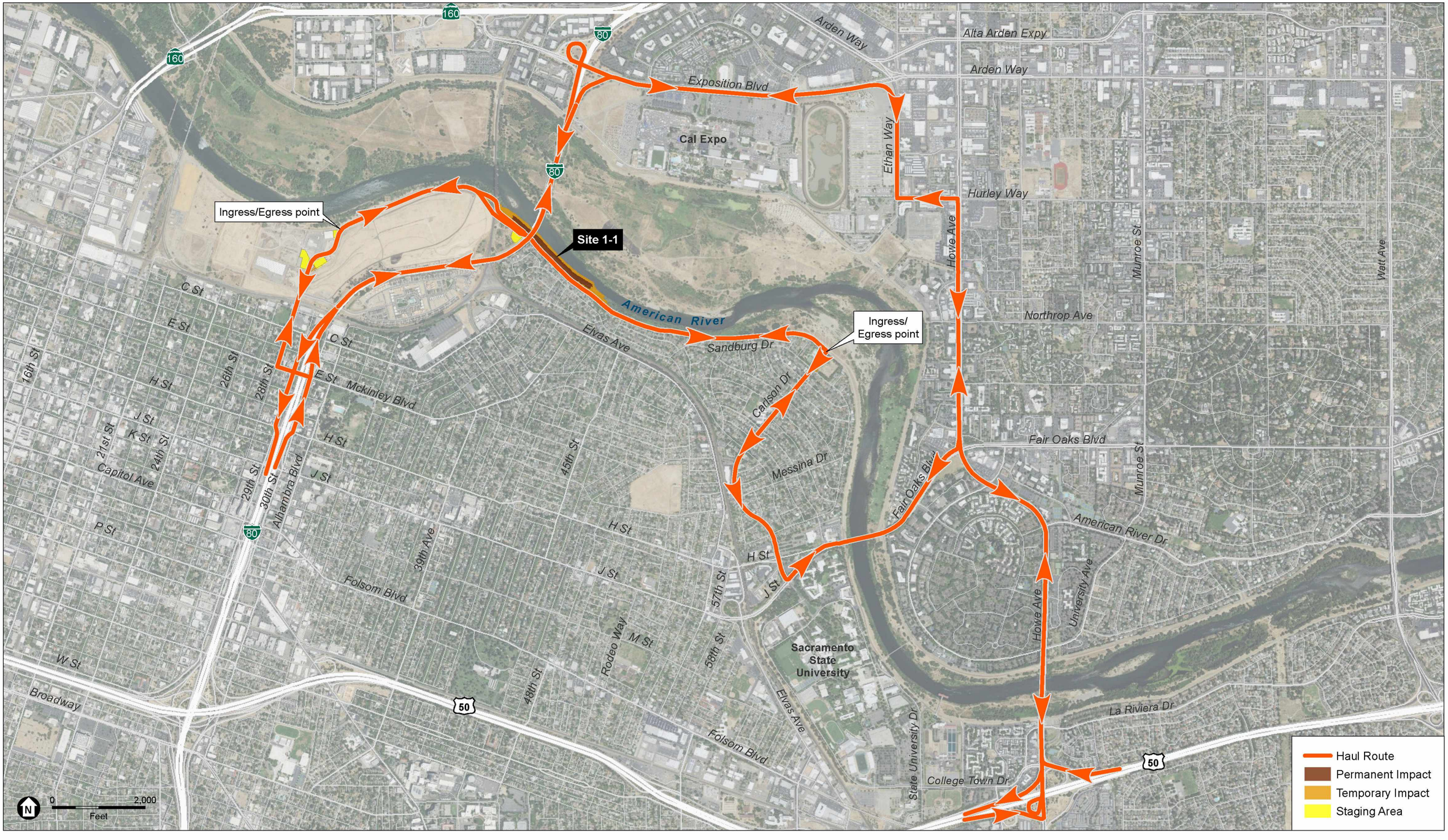
stormwater runoff and sedimentation, building temporary access roads and ramps, preparing staging areas, and installing signage for traffic and alternate transportation routes that would be affected by construction activities (e.g., bicycle routes).

Vegetation clearing could be needed to allow for site access and to accommodate construction activities. Site preparation could also include the removal of submerged instream woody debris and fallen trees within the construction footprint. A turbidity curtain or other minimization measures approved by NMFS and USFWS would be installed prior to any in-water work conducted on the waterside of the levee. The work limits and staging areas would be fenced with orange construction fencing to protect sensitive habitat and to identify disturbance area limits. In addition, 6-foot tall temporary chain-link security fencing would be installed around staging areas and along the access routes within the sites. The Site 1-1 proposed erosion improvements coincide with planned improvements by California Department of Transportation (Caltrans) and the City of Sacramento. Coordination with Caltrans and the City is currently underway to prevent conflicts during site preparation and construction activities.

2.3.4.2 Site Access, Haul Routes, and Staging Areas

Haul routes for riprap, bedding, gravel, soil, and IWM would be from either I-80 or from U.S. Highway 50 (U.S. 50). The neighborhoods along the routes would be notified of haul routes, ingress and egress points, staging areas, detours, lane closures (if any), and closed recreational areas (including bike paths) approximately one week prior to commencement of construction activities. Signage would be installed at all ingress and egress locations to alert the public of construction activities and potential restrictions on access during construction activities. Coordination with the Union Pacific Railroad (UPRR) would occur well before construction starts to ensure railroad safety measures are in place.

As depicted on **Figure 2-12**, haul trucks would travel to the staging areas using the main ingress points at either the Sutter's Landing Regional Park entrance located off of 28th Street or at Glenn Hall Park located off of Carlson Drive. Haul trucks would travel along the top of the levee crossing the paved bicycle path adjacent to the 28th and B Street Skate Park. Bicycle traffic within Sutter's Landing Regional Park would be controlled by a dedicated flagger during construction to prevent collisions from occurring. All other areas along the levee east of Sutter's Landing Regional Park to Glenn Hall Park would be closed to pedestrian and bicycle traffic for safety reasons. All traffic passing over the UPRR at-grade crossing would require a dedicated flagger and other railroad safety measures during construction. Haul trucks would enter either main ingress points and use either the downstream or upstream temporary construction access ramps to deliver their loads on the waterside of the levee along Site 1-1 and then continue along the top of the levee to exit at either Glenn Hall Park or at Sutter's Landing Regional Park. Haul trucks would travel either north or south along Howe Avenue to either I-80 or to U.S. 50. Some smaller pickup trucks or equipment may enter from either Glenn Hall Park or at Sutter's Landing Regional Park to access Site 1-1. In addition, the haul routes shown on Figure 2-12 could



SOURCE: USDA, 2018; USACE, 2021; ESA, 2022

ARCF 2016 American River Contract 3A

Figure 2-12
Site 1-1 Construction Haul Routes

ESA

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be used in both directions if traffic or road closures occur for unforeseen reasons (e.g., emergencies, road construction, etc.) during the construction period. There are four staging areas within Sutter's Landing Regional Park (see Figure 2-1); three are within paved or cement parking areas near the dog park and skate park areas and the third is in an area near the Capitol City Freeway on the landside of the levee. This latter staging area has been previously used for other construction projects in the area.

2.3.4.3 Construction Materials and Equipment

Construction materials are shown in **Table 2-2**, below. Excavated soil would be hauled off-site to either an existing stockpile location or to a landfill within 15 miles of the project site. The stockpile would be located on a site or sites that are disturbed or previously cleared and/or used for stockpiling and completely void of any sensitive resources on or adjacent to the site(s). Some on-site excavated soil and soil from the Caltrans I-80 bridge project could be used for project construction pursuant to Clean Water Act Section 401 permit conditions and approval by the Central Valley Regional Water Quality Control Board. Sources of riprap would come from quarries located between approximately 40 to 75 miles away. Planting bench soil would come from off-site soil sources for the erosion protection design. Finally, IWM would come from sources within a 100-mile distance from the Site 1-1. Table 2-2 also lists the number of truck loads and durations of hauling in the construction materials. Construction material hauling would not occur simultaneously for all materials. For example, site preparation including tree and stump removals and excavation would occur first, resulting in the hauling of excavated materials occurring before importation of bedding material. The sequence of importation of materials is as follows: bedding, riprap, soil-filled riprap, planting bench soil, and finally aggregate base. In general, each of the materials would be brought in and used before the next material would be needed. However, there would be some overlap in hauling in of materials in the sequence to maintain progress during the construction season.

TABLE 2-2
CONSTRUCTION MATERIAL VOLUMES AND TRUCK LOADS FOR SITE 1-1

Material	Quantity	Truck Loads and Durations
Excavated Soil	3,500 cubic yards (cy)	360 for 12 days
Riprap	23,400 cy	2,700 for 34 days
Soil-filled Riprap	10,000 cy	1,500 for 14 days
Bedding Material	7,520 cy	750 for 12 days
Planting bench soil	21,000 cy	2,090 for 26 days
Aggregate Base	4,100 cy	455 for 9 days
IWM	160 trees	40 for 20 days

Construction equipment required for the Proposed Action is shown in **Table 2-3**. Haul trucks are expected to be 10 cy in capacity to bring in riprap from quarries and soil from offsite sources. At a minimum, 90 percent of all heavy-duty off-road construction equipment of 50 horsepower or greater would meet EPA Tier 4 standards. No EPA Tier 0 engines would be used. All haul trucks would have 2010 or newer engines.

TABLE 2-3
CONSTRUCTION EQUIPMENT AND PERSONNEL UTILIZATION

Type of Equipment	Max. Number Used per Day	Total Operation Days	Number of Workers
Excavator (CAT 345)	2	80	2
Dozer (CAT D-5)	2	60	2
Skid Steer	3	80	3
Roller or grader	1	30	1
Sheepsfoot Roller	2	40	2
Dump Truck	20	60	20
Flatbed Truck	1	20	1
55-ton Crane (RT-555)	1	15	1
Pickup Trucks	5	80	5
Water truck	1	80	1
		Total	**38**

2.3.4.4 Construction Workers and Schedule

All workers would access the site by regional and local roadways. Construction hours would comply with City of Sacramento's noise ordinance and would be Monday through Saturday from 7:00 a.m. to 6:00 p.m. and Sundays from 9:00 a.m. to 6:00 p.m. No work or hauling would take place on holidays without permission given by the City of Sacramento. Construction is anticipated to occur over approximately 1.5 years. Construction is expected to begin with removal of trees and shrubs beginning as early as October 2022. Mobilization of construction equipment, site preparation, and construction would begin as early as May 2023 and is expected to take approximately 7 months to complete, with the last 6 months of post-construction related work (e.g., plantings, irrigation, stormwater control monitoring) being completed between December 2023 and Summer of 2024. **Table 2-4** provides anticipated activities and durations for major work phases at Site 1-1, and plantings at offsite mitigation sites. However, this schedule may need to be extended if flood flows in spring and summer 2023 limit site access to construction equipment.

TABLE 2-4
ANTICIPATED PRIMARY CONSTRUCTION PHASES

Oct 2022–Feb 2023	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec 2023 to Summer 2024
Tree removal and pruning								
	Site preparation and mobilization; Primary Earthwork; Delivery and Export of Haul Materials							
							Install Rock Under Bridge; Planting; Fine Grading	
								Planting; Monitoring/ Maintenance

NOTES:
1 Tree removal in January and February may be limited or determined to be infeasible due to high water levels near desired planting bench and toe protection areas.

2.3.4.5 Demobilization and Cleanup

Any staging area and both construction access ramps (portions outside of erosion protection design) would be restored to original pre-existing contour and condition or as agreed to by the property owner. To avoid erosion, staging areas would be hydro-seeded and layered with wood mulch to prevent encroachment of invasive species. Any roads or other access areas damaged by construction would be repaired and restored to prior condition. All trash, excess construction materials, and construction equipment would be removed.

2.3.5 Public Safety

The design of Site 1-1 would remove all vegetation within the 15-foot vegetation free zone from the waterside toe of the levee. No vegetation would be planted in the vegetation free zone as part of the Proposed Action. In the segment of Site 1-1 upstream of the I-80 Bridge, the bench would narrow and disappears immediately upstream of the bridge. The levee slopes down from the levee crown road at a continuous slope of approximately 1V:3H to the river. The vegetation free zone in this area is defined by the elevation of the landside toe of the levee extended through the levee to the waterside with an additional 15 feet added horizontally. No levee inspection road exists in this segment; only the levee crown road. In this segment, existing trees within the vegetation free zone and within the project construction limits would be removed to provide access and operations and maintenance (O&M) of the levee.

In the segment of Site 1-1 downstream of the I-80 bridge, a sufficiently wide bench would provide the required 15-foot vegetation free zone along the waterside of the levee toe. At the landside toe of the levee a paved bike and pedestrian trail would also provide access

to emergency and maintenance vehicles as well as serve as the levee inspection road. The top of the levee road would also be maintained after construction to provide continued access for operations and maintenance. Placed rock supporting the planting benches would be at slopes of 1V:2H or flatter reducing the potential for pedestrians to become trapped and reduce fall hazards. The design of the IWM and the natural vegetation at the bank toe would be located on the planting bench spaced apart as described previously. This design would prevent recreationists from getting caught on the IWM and would allow shore access between IWM, as described previously. The IWM would be at a depth and velocity where recreational users of the river can wade out and around the IWM at typical recreational flows in the river.

2.3.6 Operations and Maintenance

Once construction is complete and the performance standards have been met and habitat has successfully established, the non-Federal sponsors (the CVFPB and SAFCA) would be responsible for the O&M of Site 1-1 and all land used for staging areas would return to original ownership. However, the responsibility for the O&M for the levee and revetment features would be turned over to the LMA (American River Flood Control District (ARFCD)) and the on- and off-site mitigation features would specifically fall to SAFCA for long-term O&M. Regular O&M activities by the LMA would consist of inspections, weed abatement, removal of encroachments and high-hazard vegetation to ensure levee integrity, replacement and re-working of displaced or launched revetment following large flood events, and adequate levee access along the levee toe road. The levee maintenance roads would be used, as they are currently used, to access the length of the levee during these activities and during high-flow events for flood-fighting purposes. O&M activities would not require heavier or noisier equipment than under current conditions. O&M inspections would consist of a patrol vehicle traveling along the levee and small machinery for weed abatement such as mowers and weed whackers/trimmers. These activities would only occur periodically, as under existing conditions. O&M activities would not introduce new land uses into the area.

CHAPTER 3
Affected Environment and Environmental Consequences

3.1 Introduction

3.1.1 Approach to the Analysis

Each resource topic presented in this chapter includes a summary of the regulatory setting, environmental setting, methodology, and the basis of significance conclusions for environmental effects. Supplemental information on existing environmental and regulatory settings is presented when needed to provide the context for the impact analysis and/or update the information, as relevant. The basis for determining the significance of impacts is presented, based on the criteria used in the ARCF GRR FEIS/FEIR analysis. After publication of the ARCF GRR FEIS/FEIR, changes were made to Appendix G of the CEQA Guidelines that reflected changes to the CEQA statute and related court decisions. To the extent that the topics or questions in the revised Appendix G are not reflected in the ARCF GRR FEIS/FEIR significance criteria, these topics and questions have been taken into consideration in the impact analysis.

For impacts associated with implementation of the Proposed Action, mitigation measures included in the ARCF GRR FEIS/FEIR and previously adopted are incorporated into the Proposed Action to reduce the level of significance of the impact. Where an impact of the Proposed Action is determined to require additional mitigation beyond the ARCF GRR FEIS/FEIR mitigation measures, new or modified ARCF GRR FEIS/FEIR mitigation measures are recommended.

3.1.2 Resource Topics Not Discussed in Detail

Some resource topics were eliminated from further analysis in this Supplemental EIR, because effects of the Proposed Action are negligible, or the project refinements described in the Proposed Action would not create additional impacts on these resources beyond the scope of those evaluated in the ARCF GRR FEIS/FEIR. These resource topics are land use, mineral resources, geology, wildfire, and socioeconomics, populations, and environmental justice.

3.2 Visual Resources

3.2.1 Environmental Setting

3.2.1.1 Regulatory Setting

Chapter 5 of the ARCF GRR FEIS/FEIR described the status of compliance with the Wild and Scenic Rivers Act in detail, which applies to the aesthetic value of the American River, including visual resources.

3.2.1.2 Existing Conditions

The ARCF GRR FEIS/FEIR Section 3.15 (pages 293 through 297) describes the regional and local setting in the vicinity of the Project Area for the Proposed Action.

In general, the visual environment along the American River includes urban development on the landside of the levee, including homes and landscaped backyards, and the natural riparian and river features on the waterside of the levee. The existing levees block views of the American River from most adjacent landside areas. Views of the Parkway from the second story of homes directly adjacent to the levee are possible in some areas. People using the top of the levee for recreational activities see primarily riparian forest and open space lands throughout the Parkway on the waterside.

Site 1-1 is located on the left bank of the LAR and the Project Area generally extends from Sutter's Landing Regional Park on the west to Glenn Hall Park on the east. Site 1-1 is divided into two segments: one segment is downstream of the I-80 overcrossing of the American River, and one segment extends underneath and upstream of the overcrossing (see Figures 2-3 and 2-6 in Chapter 2, *Alternatives*).

The downstream segment of Site 1-1 extends through and along the northern edge of Sutter's Landing Regional Park. Comprising mostly of unimproved land, Sutter's Landing Regional Park includes several improvements and features that stand in visual relief to the largely unadorned natural landscape, including basketball and bocce ball courts with shade canopy seating areas, landscaping, shade structures, walkways, unshaded and shaded parking lots, a dog park, and a large corrugated metal building that houses the Sutter's Landing Skate Park. From ground level, along the gravel levee trail that traverses the northern extent of the expanse of Sutter's Landing Regional Park, direct views of the American River and its vegetated northern bank are intermittently obscured by trees and other vegetation, and transportations structures (i.e., railroad trestle and Capitol City Freeway Bridge).

The upstream segment of Site 1-1 and associated haul route, from the Capital City Freeway Bridge overcrossing to Glenn Hall Park, extends along the levee segment that traverses the northern portion of the River Park neighborhood. Direct views of the American River and its vegetated northern bank are visible to users of the levee trail and are largely obscured by the levee, trees, and other vegetation from within the neighborhood. The approximately

7-acre Glenn Hall Park includes a large playfield flanked by mature trees, tennis courts, a swimming pool, and shaded and unshaded areas with tables and barbeques.

Portions of haul routes for construction of the Proposed Action include urbanized areas, passing through the neighborhoods of River Park, Arden Arcade, Sierra Oaks, Campus Commons, and Arden Town. The views within the residential areas are considered to be of high visual quality and are primarily traveled by local residents, commuters, students, and recreationists (see Figure 2-12, Haul Routes, in Chapter 2, *Alternatives*).

3.2.2 Methodology and Basis of Significance

3.2.2.1 Methodology

The analysis of the Proposed Action's potential impacts on visual resources in this section generally uses the same methodology described in Section 3.15.2 (page 305) of the ARCF GRR FEIS/FEIR. The analysis is based on a review of scenic vistas and landscapes that could be affected by project-related activities. Changes in form, size, colors, project dominance, view blockage, and duration of impacts are considered in the analysis. Other elements such as natural screening by vegetation or landforms, placement of project components in relation to existing structures, and likely viewer groups are also considered.

3.2.2.2 Basis of Significance

This analysis uses the same basis of significance described in Section 3.15.2 (page 305) of the ARCF GRR FEIS/FEIR, as restated below.

The Proposed Action would result in a significant effect related to visual resources if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Since publication of the ARCF GRR FEIS/FEIR, changes to Appendix G of the State CEQA Guidelines were adopted that consider the direct, indirect, or cumulative effects of degrading the visual character of a site. As a result, this analysis also takes into consideration the following additional or modified significance criterion:

- Substantially degrade the existing visual character or quality of public views of the site and its surroundings. Public views are those that are experienced from publicly accessible vantage points.

3.2.3 Impact Analysis

3.2.3.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the Proposed Action would not be implemented, and the Sacramento metropolitan area would experience no change in the existing level of risk of flooding due to levee failure because of seepage, slope stability, overtopping, or other erosion concerns.

Under these conditions, a flood event could cause portions of the levees to fail, triggering widespread flooding and related damage. If a catastrophic flood were to occur, vegetation and heavy erosion of soil along the American River Parkway would be lost. Flood fight activities would occur during a high flow emergency response resulting in emergency response with heavy-duty construction equipment in more areas than the Proposed Action. Flood fighting would result in the placement of large volumes of rock along the riverbanks to stop erosion and prevent further levee failure. The placement of rock would prevent or impede future growth of trees and vegetation on the levee slopes. All these effects on visual resources would be considered significant. However, the timing, duration, and magnitude of a flood event are speculative and unpredictable, and therefore a precise significance determination cannot be made.

3.2.3.2 Proposed Action

The ARCF GRR FEIS/FEIR Section 3.15 (pages 293 through 313) analyzed the impacts on visual resources for approximately 11 miles along the American River Parkway, including the Project Area. The analysis of impacts on visual resources from improvements included in the Proposed Action would be the same as identified in the ARCF GRR FEIS/FEIR for the following:

1. Construction activities would result in short-term significant and unavoidable impacts on the visual character of the American River Parkway.
2. Loss of vegetation due to removal and construction of levee improvements would result in significant and unavoidable short-term effects on visual resources of the mature vegetation, but a less-than-significant long-term impact with mitigation once new vegetation has been established.
3. Areas along the levee that could erode would expose launchable rock which would result in a long-term adverse impact on visual resources to users within the American River Parkway (i.e., at the levee portion with the launchable rock trench).

As described in Chapter 2, *Alternatives*, the Proposed Action would include construction of erosion protection improvements, use of construction staging areas and stockpile locations, and hauling of materials via trucks along haul routes. The primary features of the erosion protection improvements include a launchable rock toe, planting bench, and soil-filled levee embankment revetment. The overall objectives of the planting bench are to provide on-site habitat mitigation and to minimize visible rock revetment.

Erosion protection features would require clearing of trees and vegetation for earthwork and placement of revetment. The Proposed Action would revegetate the erosion protection measures with native vegetation to replace the vegetation removed by the construction of the Proposed Action. The planting mix would include a number of native riparian and upland plants species, which may include valley oak, riparian shrubs, and grasses consistent with American River Parkway Plan list of approved plants. The revegetation measures would reduce the intensity the Proposed Action's effects to visual resources by restoring a natural vegetated setting.

Construction activities would occur on the water side of the levee in the American River Parkway and mostly out of view from the neighboring urbanized land uses (see Figure 2-6, in Chapter 2, *Alternatives*). Some of the staging and work areas would be within view of users of Sutter's Landing Regional Park, Glenn Hall Park, recreationists along the levee trail, and residents in the adjacent portions of the River Park neighborhood; however, this would not comprise a permanent adverse visual impact. Construction at Site 1-1 would also result in short-term temporary impacts to views of the banks of the river while newly planted vegetation and trees mature.

Portions of haul routes for construction of the Proposed Action would include urbanized areas where residents, commuters, and workers along the residential roadways would experience views of construction and worker vehicles associated with the Proposed Action. The views within the residential areas are of high visual quality and are primarily traveled by local residents, commuters, students, and recreationists. However, views of construction and worker vehicles associated with the Proposed Action would be limited to the construction period and would not result in a long-term substantial adverse visual impact.

During construction of the Proposed Action, staging areas would have lighting to ensure the security of construction equipment and stored materials, creating new sources of nighttime light that would be visible by neighboring residences and vehicles passing near the staging areas. Some of this lighting could potentially illuminate adjacent residences. This would result in a short-term temporary significant impact. However, Mitigation Measure VIS-1 would reduce the impact of nighttime light to a less-than-significant level (see below).

ARCF GRR FEIS/FEIR Mitigation Measures

The following summarizes ARCF GRR FEIS/FEIR mitigation measures (pages 311 to 312) that are incorporated into the Proposed Action:

- Trees would be planted within the planting bench where there is sufficient space (Mitigation Measures VEG-1 and SRA-1).
- Additional trees would be planted at other areas in the Parkway according to the Parkway Plan in the site to mitigate for the removal of the trees (Mitigation Measures VEG-2 and SRA-1).

Summary

The ARCF GRR FEIS/FEIR concluded that short-term impacts on visual resources associated with construction within the LAR would be significant and unavoidable. However, the ARCF GRR FEIS/FEIR determined that mitigation measures would reduce potential permanent impacts on visual resources to a less-than-significant level because once vegetation has fully developed, the visual quality of the Project Area would be similar to existing conditions. Construction of the Proposed Action would result in no new or more severe short-term visual impacts than those addressed in the ARCF GRR FEIS/FEIR and, therefore, those construction-related short-term visual impacts are already adequately addressed in the ARCF GRR FEIS/FEIR.

However, the ARCF GRR FEIS/FEIR did not consider the use of nighttime lighting for staging areas, and, therefore, there would be a short-term temporary significant impact. Implementation of the following new mitigation measure would reduce impacts from the use of nighttime light under the Proposed Action to a less-than-significant level.

Additional Mitigation Measure for the Proposed Action

Implementation of additional Mitigation Measure VIS-1 would reduce impacts of new sources of nighttime lighting installed for security at the staging areas to a less-than-significant level.

> **Mitigation Measure VIS-1:** Shield Temporary Nighttime Lighting. The Project Partners shall require its construction contractors to ensure that all temporary lighting used for security of the staging areas is shielded or directed to avoid or minimize any direct illumination onto light-sensitive receptors located outside of the Project Area.

3.3 Hydrology and Water Quality

3.3.1 Environmental Setting

3.3.1.1 Regulatory Setting

Sections 3.4 and 3.5 of the ARCF GRR FEIS/FEIR (pages 81 and 96, respectively) identified Federal or State environmental laws and regulations that apply to regulating hydrology and water quality. Chapter 5 of the ARCF GRR FEIS/FEIR summarized the environmental laws and regulations that apply to the ARCF Project and described the status of compliance with those laws and regulations.

3.3.1.2 Existing Conditions

Section 3.4 (pages 81 through 95) and Section 3.5 (pages 95 through 108) of the ARCF GRR FEIS/FEIR describe the regional and local setting in the vicinity of the Project Area. The following provides additional information specific to the Project Area not previously described.

The Project Area is in the Sacramento Hydrologic Basin Planning Area and Lower American Hydrologic Subarea, as designated by the Central Valley Regional Water Quality Control Board (RWQCB). Water quality standards for this basin are contained in the *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* (Basin Plan) per Section 303 of the Clean Water Act. The Lower American River is listed as impaired for mercury, polychlorinated biphenyls (PCBs), toxicity, bifenthrin (a pesticide), pyrethroids (pesticides) and indicator bacteria.[6] The California Department of Water Resources (DWR) defines the Project Area as within the South American Subbasin (5-021.65).[7] This basin is designated as a High Priority basin under DWR's Sustainable Groundwater Management Act[8] for the purposes of meeting the groundwater sustainability goals of the State.

3.3.2 Methodology and Basis of Significance

3.3.2.1 Methodology

This analysis generally uses the same methodology described in Section 3.4 (page 90) and Section 3.5 (page 101) of the ARCF GRR FEIS/FEIR. The analysis evaluates the potential flood-related impacts of the Proposed Action on water surface elevation levels (WSELs) and erosion processes (e.g., scour and lateral bank erosion) in the Lower American River (LAR). The analysis also evaluates the potential water quality impacts that could result from project construction activities and operations based on the construction practices and materials that would be used, the location and duration of the activities, regulatory requirements related to water quality, and the potential for degradation of water quality or beneficial uses of Project Area waterways.

The analysis of the ARCF GRR FEIS/FEIR was supplemented with an analysis by United States Army Corps of Engineers (USACE) on the effect of construction of Site 1-1 on WSELs at 160,000 and 192,000 cubic feet per second (cfs) as presented in the *Design Documentation Report Supplemental Work Package Appendix B: Hydraulics and Hydrology, American River Common Features Erosion Protection Contract 3A Engineering and Design Phase* (Report). These flows represent the primary design metric and extreme loading scenario, respectively, for erosion control measures (described in more detail below). *Final Supplemental Environmental Impact Statement/Environmental Impact Report*. The design for Site 1-1 includes a combination of a launchable rock toe, planting benches, and riverbank and levee embankment revetment protection. The USACE provided an updated hydrology and hydraulics analysis of these proposed bank protection designs at Site 1-1 that is considered in this document.[9] The Report includes a

6 State Water Resources Control Board. 2021. *Recommended 2020-2022 Integrated Report Appendix A: Recommended 2020-2022 3030(d) List of Impaired Waters*. https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022_integrated_report.html. Accessed December 21, 2021.

7 California Natural Resources Agency. 2018. *5-021.65 Sacramento Valley – South American Basin Boundary Description.* https://data.cnra.ca.gov/dataset/bbd5. Accessed December 21, 2021.

8 California Department of Water Resources. 2021. Sustainable Groundwater Management Act, SGMA Basin Prioritization Dashboard. Available: https://gis.water.ca.gov/app/bp-dashboard/final/. Accessed December 21, 2021.

9 USACE, 2021. *Design Documentation Report Supplemental Work Package Appendix B: Hydraulics and Hydrology*. November 18, 2021.

description of the project features, pertinent technical and design data, design criteria, assumptions, methods, and modeling results used for the project design.

Water Surface Elevation Level Modeling

Hydraulic impacts of the design at Site 1-1 were evaluated by comparing model runs of existing and Proposed Action conditions in calibrated one-dimensional (1D) and two-dimensional (2D) hydraulic models referred to as the MVP 1D and MVP 2D models, respectively. The MVP 1D and MVP 2D models extend from the confluence of the Sacramento and American Rivers upstream to the top of the leveed reach in the LAR (about 13 miles). The USACE Central Valley Hydrology Study (CVHS) defines the hydrology of the LAR system and includes the boundary conditions used to assess the hydraulic impacts of the project features.[10] The boundary conditions used in the MVP 1D and MVP 2D models represent annual exceedance probability (AEP) events of storms centered on the American River at the Fair Oaks United States Geological Survey (USGS) gage.

Both 65% design models were calibrated to existing conditions prior to modeling various project design alternatives presented in the Proposed Action. Note that the MVP 2D model provides more spatially descriptive results than the MVP 1D model and thus was the preferred model to inform the geometric layout of the Proposed Action design, WSELs for habitat features (for discharges < 18,500 cfs), and extract flow patterns, velocities, and shear stress.[11] Existing conditions include the following projects:

- ARCF GRR Sacramento Weir Widening (65% designs)
- ARCF GRR American River Contract 1 (100% designs)
- ARCF GRR American River Contract 1 and American River Contract 2 habitat mitigation sites
- ARCF GRR American River Contract 2 Site 2-2 (65% designs)
- ARCF GRR American River Contract 2 Site 2-3 (65% designs)
- Caltrans Capitol City Freeway bridge expansion (20% designs for substructure station-elevation data)
- DWR 2019 Bathymetric Data Version 1
- 2017 Light Detection and Ranging (LiDAR) data

Modeled effects to WSELs were made assuming construction of the 65% design for Site 1-1 over the existing conditions for the design flow rates of 115,000, 160,000, and 192,000 cfs. The design flow of 160,000 cfs is based on the design flow from Folsom

[10] USACE and David Ford Consulting Engineers, 2015. *Central Valley Hydrology Study*. November 29, 2015.

[11] USACE, 2021. *Design Documentation Report Supplemental Work Package Appendix B: Hydraulics and Hydrology*. November 18, 2021.

Dam in the latest update to the Water Control Manual (WCM). This design flow accounts for the new auxiliary spillway completed under the Joint Federal Project (JFP). The 192,000 cfs flow event represents the approximate maximum capacity of the LAR at the incipient overtopping of the levees used to inform risk assessments needed to meet USACE Engineering Construction Bulletin 2019-15. All designs and analyses were completed in accordance with USACE Engineering Manuals and Reports.[12]

Scour and Erosion Modeling

The MVP 1D and MVP 2D models were also used to estimate scour and lateral bank erosion as a result of the Proposed Action. Scour within a riverine system generally refers to the process of channel bed erosion, resulting in a local drop of the bed elevation. For flood risk management projects, identifying the potential for scour is a critical evaluation because features close to scour areas may fail or cease to function as intended. For example, scour within close vicinity of a levee may cause the levee to not achieve the design factor of safety and lead to a slope failure during a flood event. Similar to scour, lateral bank erosion, may occur when velocities and shear stresses exceed the critical values for both the surface material present on the riverbank as well as the underlying soils. Similarly, the quantifying lateral bank erosion is important to ensure that flood risk management features, such as levees, are not compromised.

Scour was estimated using hydraulic parameters from the MVP 1D model. Scour depths were calculated at seven cross sections for the 115,000, 160,000, and 192,000 cfs design flows utilizing the existing conditions features included in the 65% design package (see above). The results were validated for three cross sections using the MVP 2D model for the 160,000 cfs flow rate.

Lateral bank erosion was estimated using the Bank Stability and Toe Erosion Model (BSTEM) developed by the United States Department of Agriculture (USDA). The BSTEM model couples geotechnical slope stability calculations and hydraulic model data with erosion estimates from the excess shear equation to determine lateral erosion extents. The primary inputs to the BSTEM model include the following:

- Cross section station and elevation information for the ground surface of the riverbank
- Soil types and layer elevations (up to 5 soil layers)
- Specific soil parameters including friction angle, cohesion, saturated unit weight, soil critical shear, and soil erodibility coefficient
- Stage and energy grade slope hydrograph data, and
- Bank roughness (effective Manning's n which accounts for roughness associated with the forces acting on the soil surface).[13]

[12] USACE, 2021. *Design Documentation Report Supplemental Work Package Appendix B: Hydraulics and Hydrology*. November 18, 2021.

[13] USACE, 2021. *Design Documentation Report Supplemental Work Package Appendix B: Hydraulics and Hydrology*. November 18, 2021.

Lateral bank erosion was evaluated against the flood risk management criteria established by the USACE.[14] Briefly, these criteria assume riverbanks are devoid of vegetation and thus provide a conservative estimate of lateral bank erosion. Project features, including the riprap, were parameterized accordingly. That is, areas where 65% designs included riprap used critical shear stress and erodibility coefficient values from the parameter calculator within the BSTEM model.[15]

3.3.2.2 Basis of Significance

This analysis uses the same basis of significance described in Section 3.4 (page 92) and Section 3.5 (page 102) of the ARCF GRR FEIS/FEIR, as restated below.

The Proposed Action would result in a significant effect related to hydrology and water quality if it would:

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river in a manner that would result in:

  (1) Substantial erosion or siltation on- or off-site, or

  (2) Substantial increase in the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;

- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

- Place housing within a 100-year flood hazard area;

- Place within a 100-year flood hazard area structures which would impede or redirect flood flows;

- Expose people or structures to a significant risk of loss, injury, or death involving flooding;

- Violate water quality standards or waste discharge requirements;

- Substantially deplete groundwater supplies or interfere substantially with ground water recharge;

- Substantially degrade water quality; or

- Alter regional or local flows resulting in substantial increases in erosion or sedimentation.

[14] USACE, 2021. *Engineering and Resources Design Guidelines, American and Sacramento Rivers Erosion Improvements, American River Common Features 2016*. Sacramento, CA: Version 4. March 2, 2021.

[15] USACE, 2021. *Design Documentation Report Supplemental Work Package Appendix B: Hydraulics and Hydrology*. November 18, 2021.

Since publication of the ARCF GRR FEIS/FEIR, changes to Appendix G of the State CEQA Guidelines were adopted that include the following additional or modified significance criteria:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
  - Result in substantial erosion or siltation on- or off-site;
  - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
  - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
  - Impede or redirect flood flows.
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Given that the Proposed Action would implement measures to prevent erosion, the impact analysis presented below in Section 3.3.3, *Impact Analysis,* first discusses potential impacts of the Proposed Action to hydrology, followed by potential impacts to water quality.

Effects Not Evaluated Further

As described in the ARCF GRR FEIS/FEIR, groundwater is not likely to be encountered during excavation or trenching, based on the 2013 Groundwater Update for the California Water Plan which states that groundwater could be as deep as 90 feet below ground surface, which is well-below proposed construction activities. Further, any water that would be encountered during construction activities would likely be directly connected to water in the American River and not directly to the underlying groundwater basin. Because groundwater is not likely to be encountered and would not be used as a source of water supply, the Proposed Action would not cause a substantial decrease in groundwater supplies or conflict with or obstruct implementation of the sustainable groundwater management plan. Furthermore, the Proposed Action would not create any new

impervious surfaces that would interfere with groundwater recharge, or impede sustainable groundwater management, or increase runoff over existing conditions. Additionally, the Project Area is inland and not mapped in an area where tsunami or seiche are likely to occur,[16] therefore no further evaluation is necessary.

3.3.3 Impact Analysis

3.3.3.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the Proposed Action would not be implemented, and the Sacramento metropolitan area would experience no change in the existing level of risk of flooding due to levee failure because of seepage, slope stability, overtopping, or other erosion concerns.

Under these conditions, a flood event could cause portions of the levees to fail, triggering widespread flooding and related damage. If a catastrophic flood were to occur, emergency flood fighting and clean-up efforts would be undertaken to control further erosion and loss of the levee system. Timing and duration of control would correlate with other emergency flood fighting needs, but it is foreseeable that the release of sediment, vegetation, debris from urban dwellings and structure, and hazards and hazardous materials would contribute to exceeding applicable environmental thresholds for hydrology and water quality in the American River and further downstream in the Sacramento River. Depending on the magnitude of a flood, flood fighting could last for weeks or even months. Moreover, due to the unpredictable nature of emergency responses, the application of best management practices (BMPs) to control all erosion and movement of other substances and debris into the American River and other waterways would be infeasible. All of these effects on hydrology and water quality would be considered significant; however, the timing, duration, and magnitude of a flood event is unpredictable, and therefore precise significance determination cannot be made.

3.3.3.2 Proposed Action

Sections 3.4 and 3.5 (pages 81 through 108) of the ARCF GRR FEIS/FEIR analyzed the impacts on Hydrology and Water Quality along 11 miles of the American River, including the areas in and around Site 1-1. The following sections present additional analyses and details not discussed in the ARCF GRR FEIS/FEIR to identify potential hydrology and water quality impacts of the Proposed Action design and any temporary impacts associated with construction including staging areas, haul routes, and stockpile locations.

Hydrology

The objective of the design of Site 1-1 is to reduce the risk of a levee failure due to erosion as well as maintain hydraulic capacity. The American River levee system was originally intended to convey a discharge of the 100-year event at 115,000 cfs as directed

[16] California Geological Survey Department of Conservation, 2021. https://www.conservation.ca.gov/cgs/tsunami/maps. Accessed December 21, 2021.

in the Folsom Dam and Lake WCM. After flooding in 1986, an emergency objective release provision of 160,000 cfs (or 200-year event) was added to the WCM. The ARCF Project was modified by the Water Resources Development Act of 1999 to include additional necessary features for the American River so that it could safely convey an emergency release of 160,000 cfs. The ARCF GRR identified further improvements to the system to safely convey 160,000 cfs including addressing erosion concerns.

The ARCF American River Levee Raising Top of Levee Profile Design Documentation Report[17] completed as part of the WRDA 1999 authorization developed a new design top-of-levee elevation for the 160,000 cfs design flow. The new top of levee provided between 2 and 4 feet of freeboard above the expected 160,000 cfs water surface elevation (i.e., the elevation of water in the river channel relative to the top of levee design). The 160,000 cfs water surface elevation is generally 3 to 4 feet above the 115,000 cfs water surface elevation. Sections of levee that did not meet the new top of levee profile were raised to the new design top of levee profile. Existing sections of levee that met or exceeded the new profile were not adjusted.

The recent addition of the auxiliary spillway structure to Folsom Dam and further updates to the WCM have affected the annual chance exceedance (ACE) of flow events on the LAR. Recent hydrological modeling completed as part of the USACE CVHS has provided updated storm hydrographs for storm events of varying ACE values. **Table 3-1** summarizes the peak flow on the LAR for various ACE flow events. The objective release flow of 115,000 cfs during a 100-year event will occur during the 4-percent ACE through the 1-percent ACE hydrologic events, while the 0.5-percent ACE is slightly above the 115,000 cfs release at 117,000 cfs. The 160,000 cfs emergency release has an ACE of about 0.3-percent.

Existing (also the No Action/No Project condition) and Proposed Action conditions were simulated for the 115,000, 160,000, and 192,000 cfs flow events (see Subsection 3.3.2.1, *Methodology*).

TABLE 3-1
SUMMARY OF ANNUAL CHANCE OF EXCEEDANCE FLOWS AT NIMBUS DAM

Annual Chance of Exceedance	Peak Flow (cfs)
50%	20,500
10%	99,000
4%	115,000
2%	115,000
1%	115,000
0.5%	117,000
0.3%	160,000

[17] USACE. *American River Project Common Features American River Levee Raising Sacramento County, California. Top of Levee Profile Design Documentation Report*. May 2007.

Water Surface Elevation Level Modeling Results

The MVP 1D and MVP 2D models were used to assess stage impacts resulting from the Proposed Action and the potential for overtopping the levee system. Stage impacts were computed by subtracting the Proposed Action WSEL from the existing conditions, as described previously in Subsection 3.3.2.1, *Methodology*. Reported positive stage impacts are indicative of increased WSELs due to the Proposed Action; negative stage impacts are indicative of decreased WSELs due to the Proposed Action. The stage impact threshold where WSELs would impact the levee system was determined to be approximately 0.2 feet.

Comparison of existing and Proposed Action conditions show that construction of the erosion protection improvements at Site 1-1 would result in stage impacts of 0.03, 0.04, and 0.05 feet for the 115,000, 160,000, and 192,000 cfs events, respectively. The location of incipient (or the beginning of) overtopping for both the north and south levee systems was shown to be located well upstream of Site 1-1 (between the Howe and Watt Avenue bridges), further reducing the concern that the Proposed Action would lead to stage impacts. Therefore, the impacts of the Proposed Action on WSELs and the potential for alteration in the existing drainage patterns of the LAR, resulting in increased erosion, siltation or surface runoff, would be less-than-significant.

Scour and Erosion Modeling Results

The MVP 1D and MVP 2D models were also used to evaluate scour and lateral bank erosion resulting from the Proposed Action and the potential for damages within close vicinity of the levee resulting in safety issues. The scour analysis resulted in estimates of total scour depth, defined as a combination of four individual scour components (described in more detail in the Report), at Site 1-1 and the I-80 bridge.[18] As stated previously, at Site 1-1 the launchable rock toe at on the upper berm of the riverbank was designed to protect the adjacent levees from failure should scour occur. For purposes of this impact analysis, the threshold of significance for scour was defined as whether the rock toe launched.

Lateral bank erosion on the LAR has been minimal since the end of mining within the river vicinity, however historic peak flows have been much lower than the project design events of 160,000 and 192,000 cfs. The closest event occurred in 1986 with a peak flow of 134,000 cfs and caused erosion into the levee prism that did not result in levee failure.[19] For purposes of this impact analysis, the threshold of significance was defined as whether an event would result in erosion into the levee prism.

Scour modeling results are presented in **Table 3-2** at Site 1-1 and the I-80 Bridge for the 115,000, 160,000 and 192,000 cfs events. Model results at these design flows show that scour is not expected to occur and the rock toe is not expected to launch. Lateral bank

[18] USACE, 2021. *Design Documentation Report Supplemental Work Package Appendix B: Hydraulics and Hydrology*. November 18, 2021.

[19] USACE, 2021. *Design Documentation Report Supplemental Work Package Appendix B: Hydraulics and Hydrology*. November 18, 2021.

erosion modeling results indicate that for both the 160,000 and 192,000 cfs design events, erosion does not reach the levee prism and the revetment meets the design velocity threshold for stability. The Proposed Action design cross section would not exceed the erosion initiation threshold, and erosion modeling results show no lateral migration of the levee bank. Thus, the impacts of the Proposed Action on erosion and siltation, supported by the scour and lateral bank erosion modeling results, would be less-than-significant.

TABLE 3-2
SCOUR MODELING RESULTS

Site or Bridge Location	115,000 cfs Total Scour Depth Range, ft	160,000 cfs Total Scour Depth Range, ft	192,000 cfs Total Scour Depth Range, ft
1-1	10-12	12-13	13-14
I-80 Bridge	17	20	21

SOURCE: Table 10 presented in USACE, 2021. *Design Documentation Report Supplemental Work Package Appendix B: Hydraulics and Hydrology*. November 18, 2021.

Summary

Modeling results of WSELs, scour and lateral bank erosion for the Proposed Action were used as hydrologic impact indicators. These indicators were used to determine whether the Proposed Action would: substantially alter the existing drainage pattern of the site or area, including through the alteration of the course or a stream or a river or through the addition of impervious surfaces in a manner that would result in substantial erosion or siltation on-or off-site; substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-or off-site; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems; or provide substantial additional sources of polluted runoff. Results of the modeling of the Proposed Action on hydrology determined that impacts would be less-than-significant.

Water Quality

Construction of the Proposed Action would include ground disturbance activities that could expose soils to increased rates of erosion during storm events that could increase the rate of sedimentation in receiving waters. Construction of the Proposed Action would also involve vegetation clearing needed to allow for site access and to accommodate construction activities, as well as post-construction revegetation of the erosion protection measures with native vegetation to replace the vegetation removed by the construction of the Proposed Action. Sediment input into the river and turbidity caused by sediment-laden runoff or placement of rock in the river could cause a turbidity plume in the water that would affect aquatic organisms, including benthic organisms and fish. Use and storage of equipment could result in the accidental spills of fuel, oil, and other construction equipment related materials that could also be carried in stormwater runoff to receiving waters. As a result, there is the potential for construction activities to adversely affect receiving water quality.

A turbidity curtain and/or other turbidity minimization measures would be installed prior to any in-water work conducted on the waterside of the levee. The work limits and staging areas would be fenced (orange construction fencing) to protect sensitive habitat, and to identify disturbance area limits. Coir or rice straw wattles or other sedimentation reducing measures would be installed where feasible downstream from any ground disturbing activities that have the potential to cause sediment runoff into the river.

Most of the construction activities would occur during dry summer months and when flows are lowest in the American River, likely July to October. Construction activities with ground-disturbances greater than one acre requires construction contractors to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) and comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The construction contractor(s) would be required to obtain a NPDES Construction General Permit from the Central Valley RWQCB detailing construction activities, work areas, storage areas, work schedule, potential for run-on, run-off, and spill prevention measure to be implemented during construction activities.

The SWPPP would describe the construction activities to be conducted, and BMPs that would be implemented to contain spills and prevent discharges of stormwater into waterways, including frequency of inspections and monitoring activities that would be required. BMPs could include but are not limited to straw waddles, geotextile and coir mats, tire wash stations at ingress/egress points to prevent tracking soil off-site onto roadways and entering the municipal stormwater collection system, and sand filter bags at stormwater collection inverts. Potential turbidity effects from landside construction (e.g., vehicle, staging, placement of construction equipment) would be limited to stormwater runoff carrying loose soil from staging areas and construction vehicle access areas. Implementation of the SWPPP would reduce the effect sediment and construction related materials entering the stormwater system to a less-than-significant level. Following construction of the Proposed Action, BMPs would continue to be monitored and repaired/replenished while vegetation matures enough to stabilize surface soil in the Project Area.

In addition, as described in Chapter 2, *Alternatives*, construction of the habitat mitigation would involve revegetation of the erosion protection measures with native vegetation to replace the vegetation removed by the construction of the Proposed Action. For example, live cuttings would be installed at the waterside edge of the bench in a 10-foot wide strip along the riverside edge of the planting bench. Imported soils for the soil-filled slope and planting benches would require laboratory testing in accordance with Clean Water Act Section 401 permit requirements prior to placement to screen for materials that could adversely affect water quality.

As described above, the construction activities associated with the Proposed Action would not violate water quality standards or waste discharge requirements or otherwise

substantially degrade surface water quality or conflict with or obstruct implementation of a water quality control plan. Coordination with the Central Valley RWQCB would occur prior to construction through the Clean Water Act Section 401 water quality certification process to ensure that any appropriate measures would be implemented to protect water quality. Further, any use of on-site excavated soil and soil from the Caltrans I-80 bridge project for project construction would be required to meet Clean Water Act Section 401 permit conditions and approval by the Central Valley RWQCB. Protection measures may include total suspended solids (TSS) or settleable solids tests to ensure the turbidity curtain is meeting water quality requirements or other applicable requirements that will be included in permits. Furthermore, through compliance with the NPDES Construction General Permit conditions would minimize stormwater runoff from affecting water quality. To ensure that stormwater runoff meets the standards of the Central Valley RWQCB Basin Plan for the American River, implementation of the proposed avoidance and minimization measures presented below would reduce impacts from construction of the Proposed Action to a less-than-significant level.

ARCF GRR FEIS/FEIR Mitigation Measures

Minor modifications of the ARCF GRR FEIS/FEIR mitigation measures (pages 106 to 108) are incorporated into the Proposed Action, as follows:

- Because the duration and timing of the low-flow period is variable from year to year, the low-flow period was generalized in the ARCF GRR/FEIS/FEIR. Because earthwork needs to start before the in-water work window in the NMFS BO (July 1–October 31, with an extension under low-flow conditions to November 15), the following mitigation measures include a specific in-water work window range of dates different from the ARCF GRR FEIS/FEIR.

- Turbidity monitoring measures were clarified to be compliant with the most recent Basin Plan turbidity objectives.

USACE and the CVFPB would implement the following revised ARCF GRR FEIS/FEIR mitigation measures to reduce temporary, short-term construction effects on water quality in the Project Area:

> **Mitigation Measure WQ-1: Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.** As part of a turbidity monitoring program, the USACE contractor(s) would monitor turbidity in the adjacent water bodies, where applicable criteria apply, to determine whether turbidity is being affected by construction and to ensure that construction does not result in a rise in turbidity levels above ambient conditions, in accordance with the Central Valley RWQCB Basin Plan turbidity objectives. The monitoring program would be coordinated with the Central Valley RWQCB prior to construction and would be implemented by the construction contractor. The contractor would be required to use BMPs, as described below, to prevent runoff from all construction areas. Environmental commitments included in the project to reduce the potential for

impacts on water quality include preparation of the SWPPP, and Spill Prevention Control and Countermeasures Plan (SPCCP).

The following measures would be implemented as part of the SWPPP, as required by the State Water Resources Control Board for any construction activities that disturb more than 1 acre, to limit erosion potential.

- Conduct earthwork during low-flow periods (e.g., approximately May 1 through November 30).
- To the extent possible, stage construction equipment and materials on the landside of the subject levee reaches in areas that have already been disturbed.
- Minimize ground and vegetation disturbance during project construction by establishing designated equipment staging areas, ingress and egress corridors, spoils disposal and soil stockpile areas, and equipment exclusion zones prior to the commencement of any grading operations.
- Install sediment barriers (e.g., silt fences, fiber rolls, and straw bales) around the base of soil stockpiles to intercept runoff and sediment during storm events. If necessary, cover stockpiles with geotextile fabric to provide further protection against wind and water erosion.
- Install sediment barriers on graded or otherwise disturbed slopes as needed to prevent sediment from leaving the project site and entering nearby surface waters.
- Install plant materials to stabilize cut and fill slopes and other disturbed areas once construction is complete. Plant materials could include an erosion control seed mixture or shrub and tree container stock. Temporary structural BMPs, such as sediment barriers, erosion control blankets, mulch, and mulch tackifier, could be installed as needed to stabilize disturbed areas until vegetation becomes established.
- During working hours, the construction activity would not cause the turbidity in the adjacent water body down current from the construction sites to exceed the Basin Plan turbidity objectives. Specifically, where natural turbidity is between 0 and 5 nephelometric turbidity units (NTUs), increases would not exceed 1 NTU; where natural turbidity is between 5 and 50 NTUs, increases would not exceed 20 percent; where natural turbidity is between 50 and 100 NTUs, increases would not exceed 10 NTUs; and where natural turbidity is greater than 100 NTUs, increases would not exceed 10 percent.[20] In determining compliance with these limits, appropriate averaging periods could be applied, provided that beneficial uses would be fully protected.
- An SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. The contractor would develop and implement an SPCCP

[20] California Regional Water Quality Control Board, Central Valley Region. *Water Quality Control Plan (Basin Plan)*, Fifth Edition, Revised May 2018. Available: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf.

to minimize the potential for adverse effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP would be completed before any construction activities begin.

- Implementation of this measure would comply with State and Federal water quality regulations. The SPCCP would describe spill sources and spill pathways in addition to the actions that would be taken in the event of a spill (e.g., an oil spill from engine refueling would be immediately cleaned up with oil absorbents). The SPCCP would outline descriptions of containment facilities and practices such as double-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures, and spill response kits. It would also describe how and when employees are trained in proper handling procedure and spill prevention and response procedures. Release of contaminants into adjacent water bodies could result in significant effects.

  Adherence to the environmental commitments and the implementation of the measures described in this section if spills were to occur would reduce or minimize this impact to a less-than-significant level.

Summary

Construction activities were evaluated to determine whether the Proposed Action would violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, or conflict with or obstruct implementation of a water quality control plan. Implementation of the mitigation measures in the ARCF GRR FEIS/FEIR, with the modifications described above, would reduce the impact of the Proposed Action on water quality to a less-than-significant level.

3.4 Vegetation and Wildlife

3.4.1 Environmental Setting

3.4.1.1 Regulatory Setting

Chapter 5 of the ARCF GRR FEIS/FEIR summarizes the environmental laws and regulations that apply to the ARCF Project and describes the status of compliance with those laws and regulations. Regulations related to special-status species have changed and are discussed in Section 3.6*, Special Status Species*. There has been no change to the applicable regulations related to Vegetation and Wildlife. Additional detail on the American River Parkway Plan is provided here.

The 2008 American River Parkway Plan is the City and County of Sacramento's management plan for the LAR and was adopted by the City and County of Sacramento, and by the State Legislature through the Urban American River Parkway Preservation Act, Public Resources Code Section 5840. It is a policy document that provides guidance for land use decisions affecting the American River Parkway, specifically for its preservation, use, development, and administration. The Plan's purpose is to ensure preservation of the naturalistic environment while providing limited development to

facilitate human enjoyment of the Parkway. The Parkway Plan also acts as the management plan for the Federal and State Wild and Scenic Rivers Acts.

3.4.1.2 Existing Conditions

Section 3.6 (pages 109–116) of the ARCF GRR FEIS/FEIR describes the regional and local setting in the vicinity of Subreaches 1 through 4. Site 1-1 is located in Subreach 1. The following provides additional information specific to the Project Area for vegetation and wildlife for the site.

Field data for vegetation, aquatic resources, and wildlife was collected for the entire Site 1-1 (see **Appendices A, B, and C**) and describes existing conditions for vegetation, aquatic resources, and wildlife.

Habitat Types

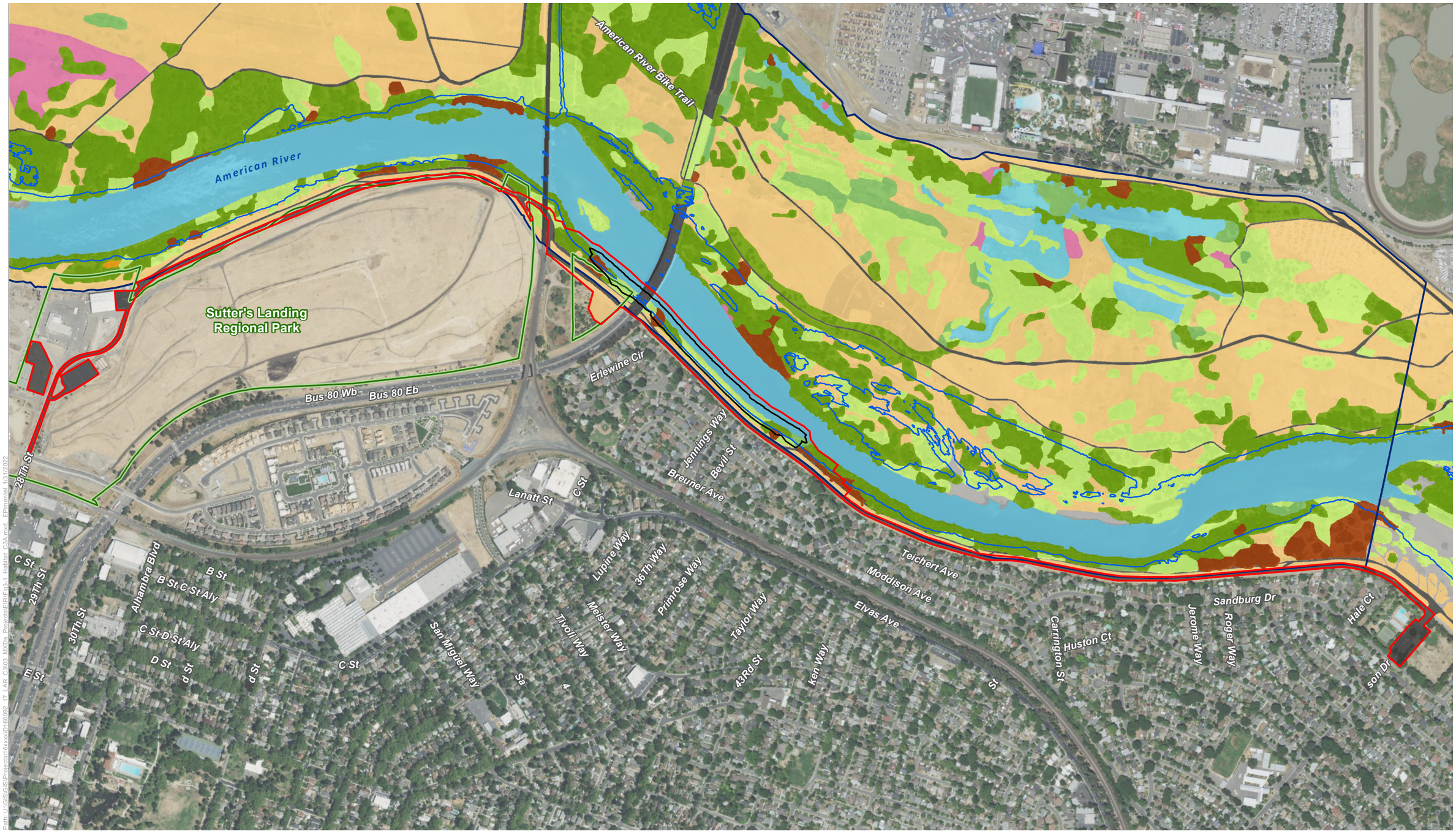
The following natural communities (i.e., habitat types) occur in Subreach 1: riverine (open water), annual grassland, mixed oak woodland, non-native woodland, riparian scrub, and riparian woodland (**Figure 3-1**). Of these natural communities those that are considered Waters of the U.S. (riverine, riparian scrub, and riparian woodland) and those that are considered riparian habitat by USFWS or other agencies (riparian scrub and riparian woodland, as well as mixed-oak woodland, and non-native woodland, *if* they occur between the levees) are considered sensitive natural communities. The distribution of the natural communities and the common vegetation and wildlife species observed in each are described below.

Annual Grassland

Common grass species observed in this community include wild oat (*Avena barbata*), bromes (*Bromus diandrus, B. hordeaceus*), foxtail barley (*Hordeum murinum*), rye grass (*Festuca perennis*), Bermuda grass (*Cynodon dactylon*), and Johnson grass (*Sorghum halepense*). Pockets of native grasses, such as beardless wild rye (*Elymus triticoides*), also occur sporadically throughout the grasslands in the survey area.

An assemblage of native and non-native forbs also occurs in these grasslands. Among the many common non-native forbs observed are spring vetch (*Vicia sativa ssp. sativa*), cranes bill (*Geranium dissectum*), Italian thistle (*Carduus pycnocephalus*), yellow star thistle (*Centaurea solstitialis*), prickly lettuce (*Lactuca serriola*), poison hemlock (*Conium maculatum*), wild radish (*Raphanus sativus*), bull thistle (*Cirsium vulgare*), rose clover (*Trifolium hirtum*), and white sweet clover (*Melilotus indicus*). Some common native forbs observed include Canada horseweed (*Erigeron canadensis*), fringed willowherb (*Epilobium ciliatum*), ragweed (*Ambrosia psilostachya*), and turkey-mullein (*Croton setiger*).

Annual grassland provides little cover for most wildlife, yet numerous species forage and several species breed in this habitat type. Grasslands attract bumblebees and other insects that rely on flowering grassland species. They also attract reptiles and amphibians, such as western fence lizard (*Sceloporus occidentalis*), common garter snake (*Thamnophis*



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SOURCE: NHC, 2021; USACE, 2021; ESA, 2022

American River Common Features Contract 3A

Figure 3-1
Natural Communities of the Lower American River
Contract 3A Project Site 1-1

ESA

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sirtalis), and gopher snake (*Pituophis melanoleucus*); and birds, including California quail (*Callipepla californica*), western bluebird (*Sialia mexicana*), lesser goldfinch *(Carduelis psaltria*), and barn swallow (*Hirundo rustica*).

Common small mammals expected to occur in grasslands include western harvest mouse (*Reithrodontomys megalotis*), deer mouse (*Mus musculus*), California vole (*Microtus californicus*), black-tailed jackrabbit (*Lepus californicus*), black-tailed deer (*Odocoileus hemionus*), coyote (*Canis latrans*), and Botta's pocket gopher (*Thomomys bottae*). Small rodents, reptiles, and invertebrates attract raptors (birds of prey) including red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Accipiter striatus*), and American kestrel (*Falco sparverius*), and special-status birds such as white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), and Swainson's hawk (*Buteo swainsoni*).

Non-native grasslands are important foraging grounds for aerial and ground-foraging insect eaters such as *Myotis* bat species and pallid bats (*Antrozous pallidus*).

Mixed Oak Woodland

Mixed oak woodlands that occur in relatively higher elevation portions of the Project Area are dominated by coast live oak (*Quercus agrifolia*), valley oak (*Q. lobata*), and interior live oak (*Q. wislizeni*) (Figure 3-1). Northern California black walnut (*Juglans hindsii*) and California bay (*Umbellularia californica*) are less frequent contributors to the tree canopy.

The oak woodlands support a variety of understory plant species and vegetative structures. When no shrub layer is present, annual grassland is the dominant understory and includes the common species described above for this community. When oak woodlands support understory shrubs, common native shrubs observed include California rose (*Rosa californica*), California blackberry (*Rubus ursinus*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), and coyote brush (*Baccharis pilularis* ssp. *consanguinea*). Himalayan blackberry (*Rubus armeniacus*), a non-native shrub occurs in the understory of oak woodlands.

Animals present in oak woodland habitat include those that rely heavily on acorns, such as the acorn disseminators California scrub jay (*Aphelocoma californica*), acorn woodpecker (*Melanerpes formicivorus*), and western gray squirrel (*Sciurus griseus*). Wild turkey (*Meleagris gallopavo*), California quail, and black-tailed deer use acorns as a major food source. Deer also use the foliage of several hardwoods.

Oak titmouse (*Baeolophus inornatus*), dark-eyed junco (*Junco hyemalis*), ash-throated flycatcher (*Myiarchus tuberculifer*), northern flicker (*Colaptes auratus*), lesser goldfinch, and great horned owl (*Bubo virginianus*) nest in woodland habitat. Cavity nesters include western bluebird and ash-throated flycatcher. Special-status birds such as Cooper's hawk (*Accipiter cooperii*) and sharp-shinned hawk (*A. striatus*) are known to nest in these woodlands. The pallid bat, also a special-status species, may inhabit these woodlands as well.

Amphibians and reptiles can be found on the woodland floor where moisture is retained under fallen wood and in tree crevices. Among these species are California toad (*Anaxyrus boreas halophilus*) and Sierran treefrog. Reptiles include western fence lizard, southern alligator lizard (*Elgaria multicarinata* ssp. *multicarinata*), ringneck snake (*Diadophis punctatus*), gopher snake, western rattlesnake (*Crotalus viridis helleri*), and California king snake (*Lampropeltis zonata*).

Wetlands and Other Waters

In October 2021, Environmental Science Associates biologists conducted an aquatic resources delineation for Site 1-1. Site 1-1 supports a total of 8.20 acres of potential waters of the United States: 4.68 acres of perennial riverine (i.e., American River), 2.33 acres of seasonally flooded forested wetlands that are comprised of a riparian woodland overstory and a riparian scrub understory, and 1.19 acres of scrub-shrub wetland (Appendix B). The term "forested wetlands" is used interchangeably in this Draft Supplemental EIR with the term "seasonally-flooded riparian habitat."

Riparian Scrub (Scrub-shrub)

Riparian scrub habitat consists of shrub-dominated areas that are subject to hydrologic influence from the American River. These areas are dominated by sandbar willow (*Salix exigua*), arroyo willow (*S. lasiolepis*), common button bush (*Cephalanthus occidentalis*), California rose, California blackberry, California wild grape, blue elderberry, and Himalayan blackberry.

Areas that experience higher velocity flows typically do not support herbaceous species, and cobbles tend to be the dominant ground cover. Areas that experience slower flows support a variety of herbaceous species including mugwort (*Artemisia douglasiana*), marsh brittlegrass (*Setaria parviflora*), Santa Barbara sedge (*Carex barbarae*), and beardless wildrye (*Elymus triticoides*).

Riparian scrub supports large numbers of insects and attracts passerine birds, including several species of flycatchers, warblers, and hummingbirds. In addition, several Federally listed species rely on riparian corridors, including valley elderberry longhorn beetle and western yellow-billed cuckoo (*Coccyzus americanus*).

Riparian Woodland

Riparian woodlands in the survey area are tree-dominated areas that are subject to frequent hydrologic influence from the LAR. In Site 1-1 riparian woodlands occur above and below the ordinary high water mark (OHWM). Riparian woodland below the OHWM is considered jurisdictional by the USACE. These areas are dominated by Fremont cottonwood (*Populus fremontii*), Goodding's willow (*Salix gooddingii*), box elder (*Acer negundo*), and California and non-native sycamore (*Platanus racemosa; Platanus* sp.). Oregon ash (*Fraxinus latifolia*), valley and live oak, and black locust as less frequent contributors to the tree canopy. Riparian woodlands support a variety of shrubs and herbs similar to those described above for the riparian scrub community.

Many wildlife species depend on riparian woodlands for water, food, and cover. Several raptor species—red-shouldered hawk, Cooper's hawk, great horned owl, and the State-listed Swainson's hawk—build their nests in the crowns of cottonwood, valley oak, and other large trees that grow on the landside and waterside of the levees. Natural cavities and woodpecker holes provide nesting sites for cavity-nesting species, including wood duck (*Aix sponsa*), American kestrel, tree swallow (*Tachycineta bicolor*), western bluebird, and western screech owl (*Megascops kennicottii*).

Riverine

Riverine habitat consists of inundated areas, including the American River. Areas in Site 1-1 did not support much submerged aquatic vegetation, but water fern (*Azolla fillicoloides*) was observed. Many bird species use open waters for resting, hunting, and escape cover. Common species include gulls, waterfowl, and osprey (*Pandion haliaetus*). Shorelines provide hunting grounds for wading birds such as herons and egrets, and for kingfisher, waterfowl, and shorebirds. Flycatchers, swallows, and other insectivorous birds catch their prey over water. Mammal species that occur in this habitat type include river otter (*Lontra canadensis*) and beaver (*Castor canadensis*). Instream woody structure along the shoreline of riverine habitat provides perching habitat for bird species such as black phoebe (*Sayornis nigricans*) and resting or basking habitat for other species (e.g., western pond turtle [*Actinemys marmorata*] and river otter).

Non-native Woodland

Non-native woodland includes single-species tree stands of either that typically consist of black locust (*Robinia pseudoacacia*) but can include tree of heaven (*Ailanthus altissima*), American elm (*Ulmus americana*), and blue gum (*Eucalyptus globulus*).

Bird species that may use this habitat types include scrub jay, Northern mockingbird (*Mimus polyglottos*), house finch (*Carpodacus mexicanus*), California quail, and western bluebird. Common mammals include black-tailed deer, raccoon (*Procyon lotor*), and opossum (*Didelphis virginiana*). Gopher snake and western fence lizard also occur in this habitat type.

Non-native and Invasive Plant Species

Non-native plant species occur in all plant communities, but most commonly in and adjacent to annual grasslands. Areas dominated by non-native vegetation are generally associated with recent human disturbance and include dredged mine tailings, maintained levee slopes, landscaped areas, and areas subject to frequent flood inundation or scour. Non-native weeds dominate some areas, especially along the side slopes of the levees. To a lesser degree, non-native plants are also found in other plant communities such as riparian and oak woodland. Non-native plants that adversely affect native species and natural communities (e.g., through competition for resources) are designated invasive plant species.

The California Invasive Plant Council maintains an inventory that categorizes non-native invasive plants that are determined to be a threat to the state's wildlands. The

categorization is based on an assessment of the ecological impacts of each plant based on the best available knowledge of invasive plant experts. **Table 3-3** lists each non-native plant species encountered during general biological resources reconnaissance surveys and its rating in the California Invasive Plant Council inventory. A complete list of plant species observed within Site 1-1 will be obtained during rare plant surveys scheduled for the following spring and summer.

TABLE 3-3
INVASIVE PLANT SPECIES IN SITE 1-1

Common Name	Scientific Name	Cal-IPC Rating
Bermuda grass	*Cynodon dactylon*	Moderate
Black locust	*Robinia pseudoacacia*	Limited
Cranes bill	*Geranium dissectum*	Limited
Foxtail barley	*Hordeum murinum*	Moderate
Himalayan blackberry	*Rubus armeniacus*	High
Italian thistle	*Carduus pycnocephalus*	Moderate
Ripgut brome	*Bromus diandrus*	Moderate
Rose clover	*Trifolium hirtum*	Limited
Soft brome	*Bromus hordeaceus*	Limited
Spanish broom	*Spartium junceum*	High
Tree of heaven	*Ailanthus altissima*	Moderate
Wild oat	*Avena barbata*	Moderate
Wild radish	*Raphanus sativus*	Limited
Yellow star thistle	*Centaurea solstitialis*	High

NOTES:
Cal-IPC = California Invasive Plant Council
[a] *High* = species have severe ecological impacts on the physical processes of plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
Moderate = species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, although establishment is generally dependent on ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
Limited = species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.
Watch = species have been assessed as posing a high risk of becoming invasive in the future.

3.4.2 Methodology and Basis of Significance

3.4.2.1 Methodology

This analysis uses the same methodology described in Section 3.6.2 (pages 116–117) of the ARCF GRR FEIS/FEIR. However, the second significance threshold was expanded to include "State-protected wetlands," to reflect an update made to Appendix G of the State CEQA Guidelines for 2019. Impacts on vegetation and wildlife resources were

evaluated based on data collected from biological resources surveys, and other resources such as aerial imagery and the Parkway Plan. The goals and objectives of the Parkway Plan were also considered in the impact analysis, to assess whether constructing the alternatives would be in conflict with those goals and objectives. Impacts on vegetation and wildlife were evaluated based on construction activities and on habitat changes expected to occur after construction of the project.

3.4.2.2 Basis of Significance

The Proposed Action would result in a significant effect related to vegetation and wildlife if it would result in any of the following:

- Substantial loss, degradation, or fragmentation of any natural communities or wildlife habitat.
- Substantial effects on a sensitive natural community, including State- or Federally-protected wetlands and other waters of the United States, as defined by Section 404 of the Clean Water Act.
- Substantial reduction in the quality or quantity of important habitat, or access to such habitat for wildlife species.
- Substantial conflict with the American River Parkway Plan or the Sacramento County Tree Preservation Ordinance.
- Substantial adverse effects on native woodland habitats in the American River Parkway, resulting in the loss of vegetation and wildlife.

3.4.3 Impact Analysis

3.4.3.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the Proposed Action would not be implemented, and the Sacramento metropolitan area would experience no change in the present level of risk of flooding due to levee failure because of seepage, slope stability, overtopping, or other erosion concerns.

Section 3.6.3 (pages 117–118) of the ARCF GRR FEIS/FEIR analyzed impacts to vegetation and wildlife under the No Action/No Project Alternative. The ARCF GRR FEIS/FEIR stated that it would be speculative to consider that additional work would be conducted to address seepage, slope stability, overtopping, and erosion issues. If a flood event were to occur, the Sacramento area would remain at risk of a possible levee failure.

The ARCF GRR FEIS/FEIR determined that given the lack of specific erosion protection measures, levees along the American River would continue to erode, resulting in the loss of bankside vegetation. It is foreseeable that this condition would require recurring repairs at high levee risk areas within the river corridor as a result of incremental or episodic flooding damage. Furthermore, flood fighting activities that would occur during a high-

flow emergency response could involve the rapid placement of large rock along the levee slope, which would adversely affect future vegetation growth along the American River levees. The ARCF GRR FEIS/FEIR determined that as levees and berms along the American River erode, riparian habitat and native wood habitats would be lost. In addition, polluted flood flows could disrupt or contaminate Federal and State-protected wetlands, including seasonally flooded forested wetlands. Trees that could be lost but are protected by local tree ordinances would likely trigger major post-flood recovery revegetation. The No Action Alternative could also be inconsistent with the Parkway Plan, which calls for bank scour and erosion to be "proactively managed" to protect public infrastructure, habitat, and recreational resources. In addition, should flood fighting activities be insufficient to prevent levee failure, a large area of vegetation and terrestrial wildlife habitat could be inundated, leading to a substantial reduction in the quality and quantity of habitats for wildlife species. The effects of catastrophic levee failure and associated repairs on vegetation and wildlife would be significant. However, the timing, duration, and magnitude of a flood event, and whether a flood would require nominal or major repairs, is unpredictable, and therefore a precise significance determination cannot be made.

3.4.3.2 Proposed Action

Anticipated Effects on Vegetation

Section 3.6.4 (pages 121–123) of the ARCF GRR FEIS/FEIR analyzed impacts on vegetation and wildlife along the entire leveed stretch of the American River. The ARCF GRR FEIS/FEIR assessed effects on nesting birds, other terrestrial wildlife, and sensitive habitat types, including wetlands, and considered conflicts with local plans and policies including the Parkway Plan. The ARCF GRR FEIS/FEIR further evaluated the specific effects of launchable rock trenches and bank protection, including the loss of riparian habitat that would occur during their installation. Riparian habitat as defined by the USFWS for this Project includes native and non-native woody vegetation (woodland and scrub habitat) between the levees above and below the OHWM. In areas where the riparian habitat occurs below the OHWM and meets the three wetland parameters (hydrology, hydric soils, and hydrophytic vegetation), riparian habitat has been classified as forested wetlands (Appendix B). The ARCF GRR FEIS/FEIR estimated that up to 65 acres of riparian habitat would be removed throughout the lower American River, including reaches not within the scope of the current Proposed Action, if Alternative 2 of the ARCF GRR FEIS/FEIR were fully constructed. The impacts to riparian habitat discussed in the section below were anticipated as part of the 65 acres in the ARCF GRR FEIS/FEIR. However, because there are multiple phases of this project, Project Partners and the USFWS have agreed upon creating an impact log that tracks the running total of impacts resulting from implementation of the ARCF. If the 65 acres is exceeded, additional analysis and consultation will be required. In addition, the ARCF GRR FEIS/FEIR determined that construction work would also occur on grassland habitats within the Parkway.

The analysis in the ARCF GRR FEIS/FEIR determined that constructing new bank protection features would involve removing grasses, shrubby vegetation, riparian woodland, and instream woody material, resulting in the loss of 80,825 linear feet of

shaded riverine aquatic (SRA) habitat, a key component of salmonid habitat. Large trees would be protected in place during construction, to the extent possible. In addition, the analysis determined that although the impacts of bank protection work would be partially self-mitigated with the installation of a waterside planting bench, and removal of instream woody material would be avoided to the extent possible, some of the degradation of natural communities, effects on sensitive natural communities, and reduced quality and quantity of wildlife habitat would remain because of the lag time between the time trees would be planted and the time they would mature to a point that they could provide the same functional values as the vegetation removed during construction. Although the design of the Proposed Action would allow for retaining some large riparian trees, others would be removed, reducing the shade and organic input to the adjacent aquatic habitat. Similarly, most existing instream woody material would be removed. The on-site replacement habitat would be designed to provide both terrestrial riparian habitat values as well as adjacent aquatic habitat (SRA habitat) values. Instream woody material in the form of trees and logs, held in place with ropes, are included in the design. However, shade and aquatic vegetation would require a substantial period of time to develop in order to provide the same values as are present under existing conditions. The ARCF GRR FEIS/FEIR determined that the short-term impact on both riparian and SRA habitats would be significant and unavoidable, but that long-term impacts would be mitigated by on-site and off-site riparian and SRA habitat creation.

Under the Proposed Action, impacts from construction activities to install exposed and buried rock structures, and a planting bench at Site 1-1 would include the loss of 1.09 acres of riparian woodland and 2.48 acres of riparian scrub in the footprint of the Project Area (**Table 3-4**). Riparian habitat would also be damaged and removed within construction access areas and haul routes, resulting in removal of 0.36 acre of riparian woodland and 0.31 acre of riparian scrub habitat.

The impacts of the Proposed Action on natural communities, including sensitive natural communities, and wildlife habitat would be significant. Implementation of Mitigation Measures VEG-1, VEG-2, VELB-1, and SRA-1 set forth in the FEIS/FEIR and augmented herein to meet site-specific conditions would reduce this impact to a less-than-significant level, because of a combination of avoidance, minimization, and compensation by creation of on-site and off-site riparian habitat.

Anticipated Effects on Wildlife

As described in Section 3.6, *Special Status Species*, riparian vegetation along the lower American River provides habitat for the valley elderberry longhorn beetle (VELB). The riparian corridor is also considered to be suitable stop-over habitat for the western yellow-billed cuckoo. To mitigate the impacts on habitat for these species, the Project Partners would create replacement riparian habitat at ratios for VELB and western yellow-billed cuckoo of 3:1 (acres replaced to acres affected) and 2:1, respectively. A total of 3.58 acres of riparian habitat would be affected at Site 1-1 erosion protection areas and up to an additional 0.67 acres in the construction access areas and haul routes. Some of the riparian habitat in access areas may be avoided, if feasible. To mitigate these impacts to

TABLE 3-4
EXISTING AND RESTORED HABITAT AREAS IN SITE 1-1

Habitat Area	Habitat Type	Total Habitat Impacted	Total Habitat Created	Erosion Protection Area Above OHWM Habitat Impacted (acres)	Erosion Protection Area Above OHWM Habitat Created [1] (acres)	Erosion Protection Area Below OHWM Habitat Impacted (acres)[2]	Erosion Protection Area Below OHWM Habitat Created [1] (acres)	Access Areas Above OHWM Habitat Impacted (acres)	Access Areas Above OHWM Habitat Created (acres)	Access Areas Below OHWM Habitat Impacted (acres)[3]	Access Areas Below OHWM Habitat Created (acres)
	Native woodland	0.96	2.30	0.17	0.13	0.53	2.17	0.22	0.00	0.03	0.00
Riparian Woodland	Non-native woodland	0.50	0.00	0.12	0.00	0.27	0.00	0.11	0.00	0.00	0.00
	Subtotal	1.46	2.30	0.29	0.13	0.80	2.17	0.33	0.00	0.03	0.00
	Native scrub	2.57	1.58	0.95	0.32	1.35	1.22	0.27	0.04	0.00	0.00
Riparian scrub	Non-native scrub	0.22	0.00	0.02	0.00	0.16	0.00	0.00	0.00	0.04	0.00
	Subtotal	2.79	1.58	0.98	0.32	1.51	1.22	0.27	0.04	0.04	0.00
	Native grassland	0.00	2.31	0.00	1.31	0.00	0.00	0.00	1.00	0.00	0.00
Herbaceous	Non-native grassland	2.34	0.00	0.02	0.00	0.00	0.00	2.32	0.00	0.00	0.00
	Subtotal	2.34	2.31	0.02	1.31	0.00	0.00	2.32	1.00	0.00	0.00
	Unvegetated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other	Open water	3.87	0.00	0.00	0.00	2.34	0.00	0.00	0.00	1.53	0.00
	Subtotal	3.87	0.00	0.00	0.00	2.34	0.00	0.00	0.00	1.53	0.00
Site 1-1 Total Habitat Impacts[4]		**10.46**	**6.19**	**1.29**	**1.76**	**4.65**	**3.39**	**2.92**	**1.04**	**1.61**	**0.00**
Non-habitat	Paved/Unpaved Access	10.80	0.00	0.06	0.00	0.19	0.00	10.49	0.00	0.06	0.00
	Non-Habitat Subtotal	10.80	0.00	0.06	0.00	0.19	0.00	10.49	0.00	0.06	0.00
Site 1-1 Total All Impacts		**21.26**	**6.19**	**1.35**	**1.76**	**4.84**	**3.39**	**13.41**	**1.04**	**1.67**	**0.00**

NOTE:

1 On-site created habitat acreage estimates are based on 65% project designs.

2 Impacts to riparian habitat below the OHWM includes forested wetlands and mitigation is included in the riparian mitigation numbers.

3 Totals in the text may vary slightly from the table due to rounding

4 Caltrans is conducting a project within overlapping footprints and removed vegetation in Site 1-1. Therefore approximately 0.32 acre of riparian impacts were subtracted from the total impacts presented here.

Site 1-1, the Project Partners would create a total of 10.23 acres of riparian habitat, which would include 3.88 acres of on-site riparian habitat in the Project Area. In addition, 6.35 acres of off-site riparian habitat would be created at off-site locations including, but not limited to Paradise Bend (formerly Glenn Hall), Rio Americano East and West, Rossmoor East and West, and at Arden Pond (see Section 3.6, *Special Status Species*). Further, the Proposed Action would affect 2.34 acres of non-native grassland in the Project Area. Non-native grassland would be replaced on-site with 2.31 acres of native grassland, which represents a much higher habitat value than non-native grassland. This area would be restored after construction by seeding native grassland plant species in this area.

After construction, the Proposed Action would also provide improved habitat for juvenile salmonids and species that typically occur at the water's edge, such as western pond turtle and river otter, by providing instream woody material. Surveys along the summer/ fall (flows of 2,660 cfs) and winter/spring (flows of 3,900 cfs) shorelines at Site 1-1 recorded 12 percent and 11 percent instream woody structure, respectively (Appendix C). Designs for Site 1-1 include instream cover of approximately 50 percent at the shorelines.

As described in Section 3.6.4 of the ARCF GRR FEIS/FEIR, USACE analyzed effects on nearshore aquatic habitat (i.e., SRA habitat) using the Standard Assessment Methodology (SAM) model developed by a multi-agency team including USACE, DWR, USFWS, and NMFS. More information on the methods used for the SAM analysis and the results of the analysis are included in Section 3.6, *Special Status Species*. The results show that plantings in the bench would be expected to provide similar or better habitat values for salmonid species over time compared to the existing condition. However, a temporal impact on SRA habitat would occur, which Project Partners would mitigate by restoring SRA habitat at mitigation sites in the American River Parkway (beyond those identified in Section 2.3.3 *Mitigation Sites*) that would be selected and designed in coordination with NMFS and USFWS. This off-site SRA habitat creation would be developed as part of the consultation under the Federal Endangered Species Act. There would be short-term unavoidable impacts on riparian habitat, but the long-term effects on vegetation and wildlife would be mitigated to a less-than-significant level by providing higher long-term habitat values on-site and off-site. Off-site actions include restoring habitat at mitigation sites in the American River Parkway that would be selected and designed in coordination with NMFS and USFWS and restoration actions at elderberry transplant sites. Additional discussion can be found in Section 3.6, *Special Status Species (*Chapter 2, *Project Description)* of the *American River Watershed Common Features, Water Resources Development Act of 2016, American River Contract 1 Supplemental Environmental Assessment/Supplemental Environmental Impact Report* and *Special Status Species (*Chapter 3, *Affected Environment and Environmental Consequences)* and Section 3.6, *Special Status Species* of the *American River Watershed Common Features, Water Resources Development Act of 2016, American River Contract 2 Supplemental Environmental Impact Statement/Supplemental Environmental Impact Report*.

Riparian habitat present within Subreach 1 is considered a sensitive natural community. A total of 3.88 acres would be created within Site 1-1 and 6.35 acres would be created

off-site (for a description of the Paradise Bend/Glenn Hall Park mitigation site and the two Rio Americano mitigation sites, the two Rossmoor mitigation sites and Arden Pond mitigation site see Chapter 2, *Project Description* of the *American River Watershed Common Features, Water Resources Development Act of 2016, American River Contract 1 Supplemental Environmental Assessment/Supplemental Environmental Impact Report* and the *Project Description* of the *American River Watershed Common Features, Water Resources Development Act of 2016, American River Contract 2 Supplemental Environmental Impact Statement/Supplemental Environmental Impact Report* to address impacts on VELB and western yellow-billed cuckoo habitat at a 3:1 and 2:1 ratio, respectively. The Proposed Action would result in a net increase in riparian woodland (including forested wetland) acreage within and near the Project Area. State and Federally-protected wetlands and other jurisdictional waters are also considered to be protected sensitive natural communities and have been included in the impacts and mitigation described above in this paragraph. Based on the design of the Proposed Action, riparian habitat (including forested wetland) impacted below the OHWM (2.39 acres, see Table 3-4) would be replaced at a ratio of 2:1 for a total of 4.78 acres of riparian habitat to be located below the OHWM. Additional off-site riparian habitat would be created at mitigation sites in the American River Parkway that would be selected and designed in coordination with NMFS and USFWS as part of the consultation under the Endangered Species Act and that would be located below the OHWM (see SRA-1 for additional discussion). No additional mitigation for impacts on jurisdictional waters is proposed. Given the above considerations, the impact of the project on sensitive natural communities, including riparian habitat and wetlands and other waters under State and Federal jurisdiction, would be less than significant with mitigation.

Construction activities for the Proposed Action could interfere with local movement of native resident or migratory wildlife species. Grading and other ground-disturbing activities could temporarily disrupt the movement of reptiles and amphibians, such as the western pond turtle. It is anticipated that reptiles and amphibians would continue to move to and through nearby unaffected aquatic or upland habitat away from active construction activities during construction. Effects of the project on access of these species to their habitat would be temporary and these species would be expected to return to areas affected by construction once such work is completed. Additionally, similar areas of riparian and grassland habitat in reaches along the Lower American River unaffected by the Proposed Action could be utilized by these species. Equipment and personnel movement and vegetation removal during construction could interfere with the movement of other terrestrial wildlife species such as small mammals or birds; however, these activities are not expected to result in substantial effects on the movement of these species because they are mobile and can move away from construction activities to unaffected areas.

Noise from construction of the Proposed Action could temporarily alter the foraging patterns of resident wildlife species but is not anticipated to substantially interfere with foraging because these species could move to nearby unaffected habitat. The impacts from construction on nesting birds specifically, including the effects of removal of

riparian trees, are discussed in Section 3.6, *Special Status Species*. Although construction work for the Proposed Action could temporarily alter the movement patterns of native resident or migratory wildlife species, it is not anticipated to significantly interfere with the movement of these terrestrial species, which could move to nearby unaffected habitat. Furthermore, construction would be temporary, limiting the potential for long-term impacts on the migration and movement of terrestrial wildlife. Once mitigation plantings become established, Site 1-1 would provide riparian habitat that is expected to be of higher quality than existing habitat, because habitat features that benefit native species would be included in the design, and the site would be managed for the establishment and persistence of native trees, shrubs and herbaceous plants. Over the long-term, the Proposed Action would not substantially reduce the quality or quantity of important habitat, or access to such habitat for wildlife species, although temporary loss of habitat would occur, which would be mitigated by off-site mitigation and/or purchase mitigation credits. Therefore, the impact of the Proposed Action on the quantity and quality of wildlife habitat and access by wildlife to habitat would be less than significant with mitigation (see mitigation discussion, below).

The American River Parkway Plan provides a guide for land use decisions affecting the Parkway, and the plan specifically addresses the preservation, use, development, and administration of the Parkway. With the on-site replacement of riparian habitat, the Proposed Action would ensure that there would be no net impacts on lands designated by the Parkway Plan as Protected Areas or Nature Study Areas. Although an initial loss of riparian habitat within the Parkway would occur, eventually the Parkway would experience a net increase in the extent of riparian habitat, or credits would be purchased at a NMFS-approved mitigation bank. This increase in riparian vegetation is consistent with Terrestrial Resource Policy 3.2 of the Parkway Plan, which calls for the protection, enhancement, and expansion of the Parkway's native willow, cottonwood, and valley oak–dominated riparian and upland woodlands that provide important SRA, seasonal floodplain, and riparian habitats. Consequently, the impact of the Proposed Action on local conservation plans, such as the Parkway Plan, would be less than significant.

The Project Area provides woody material, such as fallen logs, tree limbs, and branches that are lying on the floodplain surface. This instream woody material (native wood habitat) is particularly important when located on the winter/spring and summer/fall waterline, where it provides cover and foraging substrate for juvenile salmonids. This wood habitat also provides cover and perching habitat for terrestrial species. For example, various mammals (e.g., river otter) or reptiles (e.g., western pond turtle) use this wood as resting or basking habitat, and birds (e.g., black phoebe) use the wood as perches. Wood (e.g., harvested orchard trees) would be installed on the floodplain as part of the Proposed Action Although that project element is specifically designed to replace the wood present along the average winter/spring and summer/fall waterline as salmonid habitat, placing the wood would also mitigate the removal of wood habitat for terrestrial species, and the impact of the Proposed Action on woody debris habitat for terrestrial species would be less than significant.

ARCF GRR FEIS/FEIR Mitigation Measures

The following summarizes ARCF GRR FEIS/FEIR mitigation measures (pages 128 to 129) that are incorporated into the Proposed Action (with specific mitigation site information added):

> **Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site.** Project designs would be refined to reduce impacts on vegetation and wildlife to the extent practicable. Refinements implemented to reduce the loss of riparian habitat would include reducing the impact footprint, constructing bank protection rather than launchable rock trench whenever feasible, and designing planting benches.
>
> Where practicable, trees would be retained in locations where the bank protection and planting bench are constructed. Trees would be protected in place along the natural channel during the placement of rock. Additional plantings would be installed on the newly constructed bench to provide habitat for fish and avian species. The planting bench would be used where practicable to minimize impacts on fish and wildlife species. The on-site habitat would be created in accordance with the ARCF GRR Habitat Mitigation, Monitoring, and Adaptive Management Plan (HMMAMP), which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.
>
> **Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal.** To compensate for the removal of riparian habitat (including forested wetlands), replacement habitat would be created at a ratio of 2:1 to account for the temporal loss of habitat while newly created habitat is growing. Species selected to compensate for the riparian corridor removal would be consistent with the approved list of trees, shrubs, and herbaceous plants native to the Parkway. The riparian replacement habitat would create habitat connectivity and wildlife migratory corridors that would provide for the habitat needs of important native wildlife species without compromising the integrity of the flood control facilities, the Parkway's flood conveyance capacity, and the Parkway management goals in the Parkway Plan. Some of the replacement riparian habitat would be planted on the planting benches. Additionally, to comply with the Parkway Plan, lands within the Parkway would be evaluated for compensation opportunities. The exact location of the compensation lands in the Parkway would be coordinated with the Sacramento County Department of Regional Parks during the design phase of the project and would comply with the Parkway Plan's objectives and goals. It is assumed that sufficient lands are available within the Parkway. The replacement habitat would be created in accordance with the ARCF GRR HMMAMP, which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.
>
> Within the Project Area, Project Partners have designated Erosion Protection and Work Area construction zones. In Work Area zones, some or all the vegetation would be removed for site access, haul routes, and staging areas. Then, upon completion of the project, work zones would be seeded with native grassland species. Erosion Protection construction zones would require that most riparian vegetation be removed, but riparian vegetation would be planted at a planting

bench and within the site on buried revetment or among the revetment. To compensate for the temporal loss of riparian vegetation and SRA habitat, creation of off-site habitat would also occur at sites that would be protected in perpetuity. These sites would include a mitigation site in the American River Parkway that would be selected and designed in coordination with NMFS and USFWS as part of the consultation under the Endangered Species Act. In addition, riparian habitat would be planted at previously-designated and approved elderberry shrub mitigation areas (the Paradise Bend/Glenn Hall Park mitigation site and the two Rio Americano mitigation sites described in Chapter 2, *Project Description* of the *American River Watershed Common Features, Water Resources Development Act of 2016, American River Contract 1 Supplemental Environmental Assessment/ Supplemental Environmental Impact Report*) and the two Rossmoor mitigation sites and Arden Pond mitigation site described in Chapter 2, *Project Description* of the *American River Watershed Common Features, Water Resources Development Act of 2016, American River Contract 2 Supplemental Environmental Impact Statement/Supplemental Environmental Impact Report*.

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds. This mitigation measure is described in Section 3.6, *Special Status Species*.

Summary

The ARCF GRR FEIS/FEIR concluded that mitigation measures would reduce potential long-term impacts on vegetation and wildlife resources to a less-than-significant level because once vegetation has fully developed, the habitat quality of the Project Area would be similar or better than under existing conditions. The ARCF GRR FEIS/FEIR also concluded that short-term impacts on vegetation and wildlife resources associated with construction within the American River Parkway would be significant and unavoidable. Construction of the Proposed Action would not result in short-term impacts on vegetation and wildlife resources that would be new or more severe than those addressed in the ARCF GRR FEIS/FEIR and, therefore, those construction-related short-term impacts on vegetation and wildlife are already adequately addressed in the ARCF GRR FEIS/FEIR.

Under the Proposed Action, the mitigation for loss of riparian habitat would be satisfied as part of compensatory mitigation for the loss of suitable habitat for VELB and western yellow-billed cuckoo. For more details on the compensatory mitigation requirements for the VELB and western yellow-billed cuckoo, see Section 3.6, *Special Status Species.*

In summary, to address the impacts on the 4.25 acres of riparian habitat (including forested wetland below OHWM) and VELB habitat that would be affected by the Proposed Action at Site 1-1, replacement riparian habitat would be created, including 3.88 acres on-site and 6.35 acres off-site. Implementing this compensatory mitigation would reduce long-term impacts on any natural community or wildlife habitat within the Project Area to a less-than-significant level by creating on-site and off-site riparian habitat. Short-term impacts on vegetation and wildlife habitat would remain significant and unavoidable because it would take several years (e.g., 10 to 15 years) for riparian habitat to become fully mature and provide the same values as existing riparian habitat.

Because impacts on migratory and movement conditions for terrestrial wildlife would be minor or temporary in duration and mitigated by on-site replacement, off-site mitigation, the impacts on the quality or quantity of important habitat, or access to such habitat for wildlife species, would be less than significant with on-site and off-site mitigation, and no additional mitigation measures are necessary.

With implementation of the riparian habitat mitigation that addresses impacts on VELB and western yellow-billed cuckoo, the potential for conflicts with the Parkway Plan would be less than significant because a net long-term increase in the extent of riparian habitat within the Parkway would occur.

Because the project would involve anchoring of new large instream woody material to replace the wood present along the shoreline that would be removed during construction activities, the impact of the Proposed Action on native wood habitat with the Parkway would be less than significant.

The ARCF GRR FEIS/FEIR did not consider the impacts of project lighting on visual resources. During construction of the Proposed Action, staging areas will have security lighting to protect construction equipment and stored materials. This will result in new sources of nighttime light that could impact wildlife. The mitigation measure already listed on page 3-36 in Section 3.5, *Visual Resources* to shield or direct light, would also reduce the impact on wildlife from a temporary significant impact to a temporary adverse or minor impact.

Implementation of the above mitigation measures from the ARCF GRR FEIS/FEIR with added specificity regarding mitigation sites would reduce the impact of the Proposed Action on vegetation and wildlife to a less-than-significant level in the long-term. Short-term impacts on vegetation and wildlife habitat would remain significant and unavoidable.

3.5 Fisheries

3.5.1 Environmental Setting

3.5.1.1 Regulatory Setting

Section 3.7 (page 132) of the ARCF GRR FEIS/FEIR identified Federal or State environmental laws and regulations that apply to fisheries resources. Chapter 5 of the ARCF GRR FEIS/FEIR summarized the environmental laws and regulations that apply to the ARCF Project and described the status of compliance with those laws and regulations. There has been no change to the applicable listed regulations related to fisheries. The American River Parkway Plan discusses management of fish habitat and is described in Section 3.4.1.1 of this Draft Supplemental EIR.

3.5.1.2 Existing Conditions

Section 3.7 (pages 131–135) of the ARCF GRR FEIS/FEIR describes the regional and local setting in the vicinity of the Project Area for the Proposed Action. The following provides additional information specific to the Project Area:

Native and non-native fish species that can be found in the Lower American River are listed on page 133 of the ARCF GRR FEIS/FEIR.

The ARCF GRR FEIS/FEIR identified the important attributes of fish habitat present in the Lower American River as aquatic vegetation and shaded riverine aquatic (SRA) habitat. The ARCF GRR FEIS/FEIR defined aquatic vegetation as floating, submerged, and emergent vegetation that serves as hiding cover and an invertebrate food production base for nearly all aquatic species. The ARCF GRR FEIS/FEIR defined SRA habitat as overhanging canopy cover.

In 2019 and 2020, Environmental Science Associates biologists conducted aquatic vegetation and shoreline habitat surveys in the Project Area.[21] In the Project Area, aquatic vegetation was present along 15 percent of the total summer/fall seasonal shoreline and 33 percent of the total winter/spring shoreline. Approximately 3,344 linear feet of shoreline habitat was present along the summer/fall seasonal shoreline in the Project Area of Site 1-1 (Appendix C).

3.5.2 Methodology and Basis of Significance

3.5.2.1 Methodology

This analysis generally uses the same methodology as described in Section 3.7.2 (page 136) of the ARCF GRR FEIS/FEIR. This involves analyzing how the expected changes to aquatic vegetation and SRA habitat may affect populations of native fish species and how construction activities may affect native fish. Effects on special-status fish species are addressed in Section 3.6 and impacts on natural communities (including riparian vegetation) are addressed in Section 3.4.

3.5.2.2 Basis of Significance

This analysis uses the same basis of significance as described in Section 3.7.2 (page 136) of the ARCF GRR FEIS/FEIR, as restated below.

The Proposed Action would result in a significant effect related to fisheries if it would:

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Substantially conflict with the American River Parkway Plan;
- Substantially reduce the habitat of a fish population; or
- Cause a fish population to drop below self-sustaining levels.

[21] Environmental Science Associates. 2020. American River Common Features 2016 Project American River Erosion Protection: American River Contract 3 Detailed Resource Assessment Report Prepared for Sacramento Area Flood Control Agency. Sacramento, CA. October 2020.

3.5.3 Impact Analysis

3.5.3.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the Proposed Action would not be implemented, and the risk of flooding within the Sacramento metropolitan area due to levee failure caused by seepage, slope stability, overtopping, or other erosion concerns would remain unchanged from its present level.

The ARCF GRR FEIS/FEIR concluded that the effects of flood fighting on fish in the event of a levee failure could be significant. If flood fighting were to occur to stop erosion and prevent levee failure, placing large rock along the levee slope would prevent or impede the future growth of trees and vegetation on the levee slopes, which would substantially reduce fish habitat. Emergency cleanup and earth-moving activities could also result in an increase in sediment and turbidity that would adversely affect migration, spawning, or rearing habitat. Given the nature of emergency cleanup activities, implementing best management practices and measures to reduce effects on fish may not be feasible, and populations may drop below self-sustaining levels.

In addition, high flows in the American River would cause levees and berms to erode. As the banks of the river erode, important SRA habitat would be lost. Flood fight activities to save levee structures would likely occur during a high-flow emergency response. All of these effects on fisheries would likely be significant, although no precise significance determination is possible.

3.5.3.2 Proposed Action

In 2015, NMFS issued a Biological Opinion (BO) for the ARCF GRR consultation for levee improvements and bank protection along the Sacramento River, levee improvements along Arcade, Magpie, and Dry/Robla Creeks, widening the Sacramento Bypass and Weir, and bank protection along the lower American River. The NMFS BO evaluated impacts to Sacramento River winter-run and Central Valley spring-run Chinook salmon, California Central Valley steelhead, and green sturgeon, as well as their critical habitat. The BO evaluated potential impacts based on rough estimates and preliminary designs for the proposed project. Consultation with NMFS was reinitiated for the ARCF GRR considering new site-specific details for the Proposed Action and a new BO was issued in May 2021.[22] The following impact analysis reflects the impacts of the Proposed Action.

Of the 3,344 linear feet within the construction footprint for Site 1-1, an estimated 7.03 acres of SRA and benthic habitats would be affected by construction activities. This estimate was calculated using the slope area approach. The slope area calculation involves measuring the levee slope below the waterline (in this case the OHWM/ 18,500 cfs line) and the natural benthic substrate out to the limit of effect.

[22] National Marine Fisheries Service. 2021. Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the American River Common Features General Reevaluation Report Reinitiation. May 12, 2021.

As part of the permit conditions of the NMFS 2021 BO, Project Partners will develop and implement a compensatory mitigation accounting plan to ensure the tracking of compensatory measures associated with the implementation of the Proposed Action. The accounting plan will verify that tracking of impacts as site designs are developed to ensure incidental take is not exceeded and identify when triggers for reinitiation have been met.

Rock placement during bank protection activities would likely disturb native, resident fish by increasing noise, water turbulence, and turbidity, causing them to move away from the area of rock placement and put them at a slightly increased risk of predation.

Construction of bank protection would disturb soils and lead to increased turbidity in the nearshore aquatic habitat. The increase in suspended solids and turbidity would generally be short term. Sedimentation and turbidity increases may affect fish physiology, behavior, and habitat.

Direct effects on resident native fish species habitat would be limited because existing conditions would not be worsened by project construction, which would include creating planting benches to provide shade and instream woody material elements of SRA habitat. A temporary loss of SRA habitat would occur, but over the long term, the erosion protection sites would support higher quality SRA habitat than under existing conditions (Appendix C). Temporary reductions in SRA habitat would be compensated for by creation of riparian habitat along the LAR within the American River Parkway (see Section 3.6, *Special Status Species*). Because the LAR is expected to recover in the long term and provide improved habitat for fish species, the project would not conflict with the river's outstandingly remarkable value of fisheries designation under the Federal Wild and Scenic Rivers Act, and would not be in conflict with the American River Parkway Plan (see Section 3.4, *Vegetation and Wildlife*).

At Site 1-1, the Proposed Action would construct a launchable rock toe, running continuously along the water-side edge of Site 1-1, designed to deploy once erosion has removed the bank material beneath it. The launchable rock toe along the entire alignment of Site 1-1 would be constructed outside of the natural river channel, with no significant direct construction effects on native fish species. Although the toe would be constructed primarily of large diameter riprap, a surface bedding layer of cobbles and gravels would be added to reduce fisheries impacts. At extreme flood flows, when the rock would launch, the mobilized large rock could physically hurt fish in the channel; however, it is assumed that if no rock were to be launched the levee would overtop or breach, causing fish to be transported out of the floodway where they would most likely die. A planting bench would be constructed, along with IWM, which would improve foraging and refuge requirements for fisheries. The design of Site 1-1 includes tie-backs that are irregularly spaced to limit the erosion extents and potential subsequent damage to a planting bench during an unlikely launching event.

Implementation of the mitigation measures identified below would reduce the impact of construction of the erosion protection measures on fisheries resources to a less-than-significant level.

ARCF GRR FEIS/FEIR Mitigation Measures

Mitigation Measures FISH-1 and FISH-2 contained in the ARCF GRR FEIS/FEIR (pages 143–144) are summarized below and incorporated into the Proposed Action. Mitigation Measure FISH-4 in Section 3.6, *Special Status Species*, below, is new and designed to address additional impacts of the Proposed Action as required by the NMFS 2021 BO:

- Based on input from NMFS, the in-water work window was changed from the period of August 1 to November 30 as previously allowed in the 2015 NMFS BO, to the period of July 1 to October 31, because this was determined to be appropriate for the salmonids occurring in the American River.

  Mitigation Measure FISH-1: Observe In-Water Work Windows. In-water construction would be restricted to the general estimated work window of July 1 through October 31. The exception being that in-water work necessary for dewatering activities would begin June 1. During preconstruction engineering and design, the work window may be adjusted on a site-specific basis, considering periods of low fish abundance, and in-water construction outside the principal spawning and migration season. Typical construction season generally corresponds to the dry season, but construction may occur outside the limits of the dry season, only as allowed by applicable permit conditions.

  Mitigation Measure FISH-2: Analyze Hazardous Materials Spills and Implement Measures to Control Contamination. Because of the deleterious effects on native resident fish of numerous chemicals used in construction, if a hazardous materials spill does occur, a detailed analysis would be performed immediately by a registered environmental assessor or professional engineer to identify the likely cause and extent of contamination. This analysis would conform to American Society for Testing and Materials Standards and would include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, USACE and their contractors, in coordination with CVFPB, would select and implement measures to control contamination, with a performance standard that surface water quality and groundwater quality must be returned to baseline conditions.

Additionally, the previously adopted mitigation measures that address riparian habitat removal in the ARCF GRR FEIR/FEIS Vegetation and Wildlife Section (Section 3.6) and summarized in Section 3.4 of this document (Mitigation Measures VEG-1 and VEG-2) would reduce impacts on fisheries resources. BMPs associated with construction related impacts such as dust, runoff, turbidity, and spills that are summarized in Section 3.3, *Hydrology and Water Quality* of this Supplemental EIR (Mitigation Measure WQ-1) and are consistent with the Water Quality and Groundwater Resources Section of the ARCF GRR FEIR/FEIS Section (Section 3.5) that would also reduce impacts on fisheries

resources. Lastly, mitigation measures that address impacts on listed fish species from the ARCF GRR FEIR/FEIS Special Status Species Section (Section 3.8; Mitigation Measures FISH-3 and SRA-1) and new Mitigation Measure FISH 4, which includes new measures outlined in the 2021 NMFS BO, are summarized in Section 3.6 of this document and would also reduce impacts on fisheries resources.[23]

Summary

Implementation of the previously adopted mitigation measures in the ARCF GRR FEIS/FEIR, as modified with the Proposed Action site-specific measures as described in the mitigation measures above would reduce the impact of the Proposed Action on fisheries resources to a less-than-significant level.

3.6 Special Status Species

3.6.1 Environmental Setting

3.6.1.1 Regulatory Setting

Section 3.6 (pages 144 and 145) of the ARCF GRR FEIS/FEIR presents Federal and State laws governing special-status species. Chapter 5 of the ARCF GRR FEIS/FEIR summarized the environmental laws and regulations and described the status of overall ARCF GRR project compliance with those laws and regulations. While most of these laws and regulations are unchanged, one of the applicable laws and regulations related to special-status species have changed, as summarized below. The American River Parkway Plan which addresses management of special-status species habitats is described in Section 3.4.1.1, above.

Changes to the Federal Endangered Species Act are discussed below.

The Federal Government has adopted several rules regarding implementation of the Federal Endangered Species Act[24]; however, these changes do not substantially change the application of NEPA to the Proposed Action.

Other relevant laws and regulations that have remained unchanged are:

- National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq.)
- Wild and Scenic Rivers Act (16 USC 1217 et seq.)
- California Endangered Species Act
- California Environmental Quality Act, as amended

[23] National Marine Fisheries Service. 2021. Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the American River Common Features General Reevaluation Report Reinitiation. May 12, 2021.

[24] U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration. 2019. Endangered and Threatened Wildlife and Plants; Regulations for Interagency Cooperation. 84 Federal Register 44976, August 27, 2019.

3.6.1.2 Existing Conditions

Section 3.8 (pages 144–195) of the ARCF GRR FEIS/FEIR describes the regional and local setting in the vicinity of the Project Area for the Proposed Action. The following provides additional information specific to the Project Area. For the purposes of this section, the Project Area includes Subreach 1, Site 1-1.

Updated lists of regionally-occurring special-status species were compiled from a nine-quadrangle search of the California Natural Diversity Database (CNDDB);[25] a nine-quadrangle search of the California Native Plant Society (CNPS) database;[26] a search of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation endangered species database;[27] and literature regarding the biological resources of the region. The search encompassed the following 7.5-minute U.S. Geological Survey topographic quadrangles:

Taylor Monument	Rio Linda	Citrus Heights
Sacramento West	Sacramento East	Carmichael
Clarksburg	Florin	Elk Grove

Species on the list were assessed on the basis of habitat requirements and distribution relative to the location of and vegetation communities occurring in and around the Project Area. **Tables 3-5** and **3-6** provide comprehensive lists of the special-status species considered in this analysis.

The "Potential to Occur" categories are defined as follows:

- **None: The Project Area does not provide habitat and occurs outside of the known extant geographic and/or elevation range for the species.**
- **Unlikely**: The Project Area provides only limited and low-quality habitat for a particular species and the known range for a particular species may be outside of the Project Area.
- **Likely**: The Project Area and/or immediate vicinity provides suitable habitat for a particular species.
- **Present:** The species (or evidence of its presence) was observed during biological resources surveys conducted within the Project Area (see below).

[25] California Department of Fish and Wildlife. 2021. California Natural Diversity Database (CNDDB) search for the U.S. Geological Survey 7.5-minute Sacramento East topographic quadrangle and surrounding eight quadrangles. RareFind 5.0. Version 5.2.14. Biogeographic Data Branch. Information accessed November 11, 2021.

[26] California Native Plant Society. 2021. Special-status Plants documented on the U.S. Geological Survey 7.5-minute Sacramento East topographic quadrangle and surrounding eight quadrangles. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Rare Plant Program. Available: www.rareplants.cnps.org. Accessed December 12, 2021.

[27] U.S. Fish and Wildlife Service. 2021. List of Threatened and Endangered Species that may occur in you Proposed Project Location or may be Affected by your Proposed Project. Consultation Code: 08ESMF00-2022-SLI-0370; Event Code: 08ESMF00-2022-E-01127. Species list generated November 15, 2021.

TABLE 3-5
REGIONALLY OCCURRING SPECIAL-STATUS ANIMAL SPECIES CONSIDERED IN THE PROJECT AREA

List Type	Animal Type	Common Name Scientific Name	Fed Status	State Status	Habitat	Potential to Occur
Listed Species	Invertebrates	vernal pool fairy shrimp *Branchinecta lynchi*	FT	NL	Vernal pools, swales, and ephemeral freshwater habitat. Most commonly found in small (< 0.05 acre), clear to tea-colored vernal pools with mud, grass, or basalt bottoms in unplowed grasslands.	**None.** Vernal pool landscapes and hydrology not present.
		monarch butterfly *Danaus plexippus*	FC	NL	Occurs in woodland areas in wind protected groves with a nearby nectar and water source. Relies on milkweed, on which they lay their eggs, and is the sole host plant for larva.	**None.** Occurs along the coastal range from Mendocino down to Baja. Closest known occurrence is 40 miles to the west near Fairfield.
		valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	NL	Mature elderberry shrubs with stems one inches in diameter or greater at ground level.	**Present.** Elderberry plants are present in the Project Area. Exit holes observed.
		vernal pool tadpole shrimp *Lepidurus packardi*	FE	NL	Typically occurs in large, deep vernal pools, but also uses smaller pools within larger vernal pool complexes.	**None.** Vernal pool landscapes and hydrology not present.
	Amphibians	California tiger salamander *Ambystoma californiense*	FT	CT	Grassland, oak savannah, and edges of mixed woodland and lower elevation coniferous forest. Spends much time underground in mammal burrows. Breeds in temporary ponds such as vernal pools but may also breed in slower parts of streams with few predators.	**Unlikely.** Grassland habitat is present, but vernal pool landscapes are not present.
		California red-legged frog *Rana draytonii*	FT	CSC	Inhabits ponds, quiet pools of streams, marshes, and riparian areas with dense, shrubby, or emergent vegetation. Likely extirpated from the Central Valley since the 1960s.	**None**. The Project Area occurs outside of the known extant geographic range for this species.
	Reptiles	giant garter snake *Thamnophis gigas*	FT	CT	Permanent or semi-permanent water and dense emergent vegetation; freshwater marshes, streams, and canals.	**Unlikely.** The American River lacks suitable habitat.
	Birds	tricolored blackbird *Agelaius tricolor*	NL	CT	Breeds near freshwater in dense emergent vegetation or dense brush.	**Unlikely.** Marginal nesting habitat in the willow riparian area. Closest known occurrence is greater than 5 miles away.

TABLE 3-5 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS ANIMAL SPECIES CONSIDERED IN THE PROJECT AREA

List Type	Animal Type	Common Name Scientific Name	Fed Status	State Status	Habitat	Potential to Occur
Listed Species (cont.)	Birds (cont.)	golden eagle *Aquila chrysaetos*	NL	FP	Uncommon permanent resident and migrant throughout California, except in the central portion of the Central Valley. Inhabits rolling foothills, mountainous areas, sage-juniper flats, and deserts.	**None.** The Project Area does not provide habitat and occurs outside of the known extant geographic range.
		Swainson's hawk *Buteo swainsoni*	NL	CT	Often nests near riparian systems, but also uses lone trees in agricultural fields or pastures and roadside trees when available and adjacent to suitable foraging habitat.	**Likely.** Riparian provides suitable nesting habitat. Known to occur within 0.5 miles of the Project Area.
		western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FT	CE	In California, western cuckoos are largely restricted to river valleys in the north-central (e.g., Sacramento River) and southwestern (e.g., Kern River) regions. Western cuckoos prefer to nest in willow (*Salix* spp.), cottonwood (*Populus* spp.), and mesquite (*Prosopis* spp.), but they will also use orchards.	**Likely.** Vocalization documented in 2020 approximately four miles upstream on a densely forested island in the American River. Submarginal nesting habitat occurs in the Project Area, but it may be used by transient birds.
		bank swallow (nesting) *Riparia riparia*	NL	CT	Colonial nester along coastal areas and rivers in Northern and Central California. Nesting restricted to vertical banks or bluffs with friable soils suitable for burrowing. Vegetation is varied; nesting sites are selected mostly based on the suitability of the nesting bank.	**Likely.** Previously observed approximately 0.5 miles downstream of the Project Area. No bank nesting habitat observed within the Project Area, but may use the Project Area for foraging.
		least Bell's vireo *Vireo bellii pusillus*	FE	CE	Summer resident in low riparian habitats in Southern California. Previously known to occur throughout the Central Valley. Typically nest in willow or scrub habitat adjacent to waterways.	**Unlikely.** Marginal nesting habitat in the willow riparian area. Only known occurrence, since the early 1900s, in northern California is greater than 10 miles to the west.
	Fishes	Delta smelt *Hypomesus transpacificus*	FT	CE	Euryhaline (tolerant of a wide salinity range) species that is confined to the San Francisco Estuary, principally in the Delta and Suisun Bay	**None.** The Project Area occurs outside of the known extant geographic range for this species.
		Sacramento River winter-run Chinook salmon *Oncorhynchus tshawytscha*	FE	CE	Cold, freshwater streams with suitable gravel for spawning; rears in seasonally inundated floodplains, rivers, and tributaries, and in the Delta.	**Likely.** Juveniles hatched in the Sacramento River may enter the Lower American River for non-natal refugia and rearing after emigrating from their natal Sacramento River.

TABLE 3-5 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS ANIMAL SPECIES CONSIDERED IN THE PROJECT AREA

List Type	Animal Type	Common Name Scientific Name	Fed Status	State Status	Habitat	Potential to Occur
Listed Species (cont.)	Fishes (cont.)	Central Valley spring-run Chinook salmon *Oncorhynchus tshawytscha*	FT	CT	Cold, freshwater streams with suitable gravel for spawning; rears in seasonally inundated floodplains, rivers, and tributaries, and in the Delta.	**Likely.** Juveniles hatched in tributaries of the Sacramento River may use the Lower American River for non-natal rearing and refugia after emigrating from their natal rivers and streams.
		California Central Valley steelhead *Oncorhynchus mykiss*	FT	NL	Cold, freshwater streams with suitable gravel for spawning; rears in seasonally inundated floodplains, rivers, and tributaries, and in the Delta.	**Present.** Adults spawn in Lower American River gravel and juveniles rear in and emigrate through the Lower American River.
		North American green sturgeon *Acipenser medirostris*	FT	NL	Cold, freshwater streams with suitable gravel for spawning; rears in seasonally inundated floodplains, rivers, and tributaries, and in the Delta.	**Unlikely.** No evidence of occurrence in the Lower American River exists, but Federal critical habitat is designated in the LAR from its confluence with the Sacramento River upstream to the State Route 160 bridge.
		longfin smelt *Spirinchus thaleichthys*	FC	CT	Requires cold, pure freshwater to pure seawater, spawns in freshwater.	**None.** The Project Area occurs outside of the known extant geographic range for this species.
Non-listed Special-Status Species	Invertebrates	Crotch bumble bee *Bombus crotchii*	NL	NL	Open grasslands and scrub habitat in California with available underground nesting habitat in fossorial animal burrows.	**Likely.** Annual grassland and scrub habitats are available and several commonly visited flower species may occur in the survey area. The closest sighting was 12 miles to the east, just east of Mather Air Force Base, in 2020.
		western bumble bee *Bombus occidentalis occidentalis*	NL	NL	Nests, forages, and overwinters in meadows and grasslands with abundant flowers and available underground nesting habitat in fossorial animal burrows. Range is throughout California, but more common in the Sierra Nevada and Coast Ranges.	**Unlikely.** Grassland habitat is available, but the western bumble bee is uncommon in the Central Valley.
	Amphibians	western spadefoot *Spea hammondii*	NL	CSC	Grasslands within lowland washes, floodplains, alluvial fans, and playas. Breeds almost exclusively in vernal pools or similar seasonal wetlands.	**Unlikely.** Grassland habitat is present, but vernal pool landscapes are not present.

TABLE 3-5 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS ANIMAL SPECIES CONSIDERED IN THE PROJECT AREA

List Type	Animal Type	Common Name Scientific Name	Fed Status	State Status	Habitat	Potential to Occur
Non-listed Special-Status Species (cont.)	Reptiles	western pond turtle *Actinemys marmorata*	NL	CSC	Variety of aquatic habitats, both permanent and intermittent, with suitable aerial and aquatic basking sites. Needs upland habitats for nesting, overwintering, and aestivating.	**Likely**. Observed upstream of the Project Area during 2018 surveys.
	Birds/ MBTA-Protected Birds and California Fish and Game Code Subsections 3503 and 3503.5	burrowing owl *Athene cunicularia*	NL	CSC	Nests and roosts in burrows, usually of ground squirrels, in grasslands and ruderal habitats.	**Likely.** Potential nesting habitat along the levees where several ground squirrel burrows were observed. Most recent CNDDB occurrence is from 2016 approximately 9 miles to the south. Several older occurrences within 5 miles of the Project Area, but most areas have since been developed.
		purple martin *Progne subis*	NL	CSC	Nests mostly in old woodpecker cavities; also nests in human-made structures. Nest is often located in tall, isolated trees/snags.	**Likely**. Potential nesting habitat in the Project Area. Known to occur on bridge and overpass structures within 1 mile of the Project Area.
		Cooper's hawk *Accipiter cooperii*	NL	WL	A common migrant and winter resident. Nests and forages in a wide variety of forest and woodland habitats.	**Likely**. Known to occur within 1.5 miles of the Project Area.
		great egret (rookery site) *Ardea alba*	NL	NL	Colonial nester in large trees. Rookery sites located near marshes, tide flats, irrigated pastures, and margins of rivers and lakes.	**Likely**. Potential nesting habitat in the survey area. There is a documented egret rookery approximately 0.5 miles downstream and another approximately 6 miles upstream of the survey areas on the American River.
		great blue heron (rookery site) *Ardea herodias*	NL	NL	Variety of habitats near sources of water. Nests commonly high in the tops of secluded large snags or live trees.	**Likely**. Potential nesting habitat in the survey area. There is a documented heron rookery approximately 0.5 miles downstream and another approximately 6 miles upstream of the survey areas on the American River.
		Ferruginous hawk *Buteo regalis*	NL	WL	Inhabits natural grasslands mostly in the northwest including Canada, eastern Oregon, Nevada, northern Arizona, New Mexico, and Texas.	**Unlikely.** Grassland provides habitat, but the Project Area occurs outside of the known extant geographic range for nesting.

TABLE 3-5 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS ANIMAL SPECIES CONSIDERED IN THE PROJECT AREA

List Type	Animal Type	Common Name Scientific Name	Fed Status	State Status	Habitat	Potential to Occur
Non-listed Special-Status Species (cont.)	Birds/ MBTA-Protected Birds and California Fish and Game Code Subsections 3503 and 3503.5 (cont.)	white-tailed kite (nesting) *Elanus leucurus*	NL	FP	Savanna, open woodland, marshes, partially cleared lands and cultivated fields, mostly in lowland habitats. Nests in trees, often near marshes.	**Likely**. CNDDB records within 0.5 miles of the survey areas documented as recently as 2009.
		merlin *Falco columbarius*	NL	WL	Breeds in patchy shrub/grassland from northward tree limit in Alaska, Canada, and Eurasia southward to southern Alaska, Oregon, Idaho, South Dakota, northern Great Lakes region, New York, Maine, Nova Scotia, British Isles, and central Russia.	**Unlikely.** Grassland provides habitat, but the Project Area occurs outside of the known extant geographic range for nesting.
		song sparrow – "Modesto" population *Melospiza melodia* (year round)	NL	CSC	Nests and forages primarily in emergent marsh, riparian scrub, and early successional riparian forest habitats in the north-central portion of the Central Valley; infrequently in mature riparian forest and sparsely vegetated ditches and levees. Forages primarily on exposed ground or in leaf litter.	**Unlikely.** Marginal habitat in the Project Area and only one historical record from the early 1900s within 10 miles. Most recent occurrence is from 2011 approximately 10 miles to the west.
		double-crested cormorant *Phalacrocorax auritus*	NL	WL	Colonial nester on costal cliffs, offshore islands, and along lake margins in tall trees.	**Unlikely.** Marginal habitat in the Project Area. Central Valley observations from 2005 include Folsom Lake and Black Crown Lake.
	Mammals	pallid bat *Antrozous pallidus*	NL	CSC	Arid deserts and grasslands of low elevations in California; often near rocky outcrops and water. Usually roosts in rock crevices or buildings, less often in caves, tree hollows, mines, etc. Prefers narrow crevices in caves as hibernation sites.	**Likely.** This species may roost in buildings and bridges in the Project Area; however, roosting is not reported by the CNDDB within 5 miles of the Project Area or within the nine-quadrangle area that includes the Project Area.
		western red bat *Lasiurus blossevillii*	NL	CSC	Associated with riparian habitat. Roosts primarily in the foliage of trees or shrubs, but may also occasionally use caves. Day roosts commonly in edge habitats.	**Likely**. This species may roost in mixed oak woodland habitat in the Project Area; however, roosting is not reported by the CNDDB within 5 miles of the Project Area or within the nine-quadrangle area that includes the Project Area.

TABLE 3-5 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS ANIMAL SPECIES CONSIDERED IN THE PROJECT AREA

List Type	Animal Type	Common Name Scientific Name	Fed Status	State Status	Habitat	Potential to Occur
Non-listed Special-Status Species (cont.)	Mammals (cont.)	American badger *Taxidea taxus*	NL	CSC	Requires sufficient food, friable soils to excavate dens and pursue prey, and relatively open, uncultivated ground.	**Likely.** The potential exists for this species to use the Parkway. Although no signs of presence were observed, there were small fossorial mammal burrows and ground squirrel activity. There are two known occurrences within 5 miles; however, the most recent sighting was from 1991.
	Fishes	Sacramento perch *Archoplites interruptus*	NL	CSC	Currently found mostly in warm, turbid, moderately alkaline reservoirs or farm ponds, generally where other centrarchids are absent.	**None.** The Project Area does not provide habitat.
		Sacramento Splittail *Pogonichthys macrolepidotus*	NL	CSC	Spawning takes place among submerged and flooded vegetation in sloughs and the lower reaches of rivers.	**None.** The Project Area occurs outside of the known extant geographic range for this species.
		Central Valley fall-/late fall-run Chinook salmon *Oncorhynchus tshawytscha*	NL	CSC	Cold, freshwater streams with suitable gravel for spawning; rears in seasonally inundated floodplains, rivers, and tributaries, and in the Delta.	**Present.** Adults spawn in Lower American River gravel and juveniles rear in and emigrate through the Lower American River.
		hardhead *Mylopharodon conocephalus*	NL	CSC	Low to mid-elevation streams with clear, deep pools and runs with slow velocities.	**Present.** Known to occur in the Lower American River.
		western river lamprey *Lampetra ayresi*	NL	CSC	Cold, freshwater streams with suitable gravel for spawning and sandy to silty backwaters or stream edges for larval rearing.	**Present.** Adults spawn in Lower American River gravel and larvae rear in the Lower American River.

NOTES:
CDFW = California Department of Fish and Wildlife; CNDDB = California Natural Diversity Database; Delta = Sacramento–San Joaquin Delta; Parkway = American River Parkway

FEDERAL
FC = Federal candidate for listing; FE = Federally listed as endangered; FT = Federally listed as threatened; MBTA = Migratory Bird Treaty Act; NL = no listing

STATE
CSC = California species of special concern; CE = State listed as endangered; CP = State proposed for listing; CT = State listed as threatened; FP = California fully protected species; WL = watch list; NL = no listing

SOURCES:
California Department of Fish and Wildlife. 2021. California Natural Diversity Database (CNDDB) search for the U.S. Geological Survey 7.5-minute Sacramento East topographic quadrangle and surrounding eight quadrangles. RareFind 5.0. Version 5.2.14. Biogeographic Data Branch. Information accessed January 12, 2021.

TABLE 3-5 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS ANIMAL SPECIES CONSIDERED IN THE PROJECT AREA

Jennings, M. R., and M. P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California*. Final report submitted to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA.

Melcer, Ron Jr., Senior Environmental Scientist–Supervisor, Delta Stewardship Council, email communication with Gerrit Platenkamp, Project Manager, Environmental Science Associates, July 28, 2019.

Shuford, W. D., and T. Gardali (eds.). 2008. *California Bird Species of Special Concern. Studies of Western Birds 1*. Camarillo and Sacramento, CA: Western Field Ornithologists and California Department of Fish and Game.

U.S. Fish and Wildlife Service. 2015. Memorandum to U.S. Army Corps of Engineers, Sacramento District: *Formal Consultation on the American River Common Features (AFRC) Project, Sacramento County, California,* September 2015.

———. 2021. List of Threatened and Endangered Species that may occur in you Proposed Project Location or may be Affected by your Proposed Project. Consultation Code: 08ESMF00-2021-SLI-0720; Event Code: 08ESMF00-2021-E-02098. Species list generated January 14, 2021.

Western Bat Working Group. 2005. Western Bat Working Group Species Accounts for all Bats. Available: http://www.wbwg.org/speciesinfo/species_accounts/allbats.pdf.

Zeiner, D. C., W. F. Laudenslayer Jr., and K. E. Mayer (comp. eds.). 1988. *California's Wildlife. Volume I: Amphibians and Reptiles.* California Statewide Wildlife Habitat Relationships System. Sacramento: California Department of Fish and Game.

———. 1990a. *California's Wildlife. Volume II: Birds.* Sacramento: California Department of Fish and Game.

———. 1990b. *California's Wildlife. Volume III: Mammals*. Sacramento: California Department of Fish and Game.

TABLE 3-6
REGIONALLY OCCURRING SPECIAL-STATUS PLANTS CONSIDERED IN THE PROJECT AREA

Listing Status	Common Name Scientific Name	Fed Status	State Status	CRPR or Other Status	Habitat	Potential to Occur
Listed Species	Boggs Lake hedge-hyssop *Gratiola heterosepala*	NL	CE	1B.2	Clay soils; margins of marshes and swamps; vernal pools. 10-2,375 meters. Evident and Identifiable from April–August.	**Unlikely.** Suitable habitat not present. Botanical surveys will be conducted in spring and summer 2022 to confirm absence.
	Mason's lilaeopsis Lilaeopsis masonii	NL	CR	1B.1	Freshwater or brackish marshes and swamps; riparian scrub. 0–10 meters. Evident and Identifiable from June–September.	**Unlikely.** No occurrences this far upriver. Botanical surveys will be conducted in spring and summer 2022 to confirm absence.
	slender Orcutt grass *Orcuttia tenuis*	FT	CE	1B.1	Vernal pools, often gravelly. 35 – 1,760 meters. Evident and Identifiable from May – September (October).	**None.** Suitable habitat not present.
	Sacramento Orcutt grass *Orcuttia viscida*	FE	CE	1B.1	Vernal pools. 30 – 100 meters. Evident and Identifiable from April – July (September).	**None.** Suitable habitat not present.
Non-listed Species	Ferris' milk-vetch *Astragalus tener* var. *tener*	NL	NL	1B.1	Vernally mesic meadows and seeps; sub-alkaline grasslands. 1–60 meters. Evident and Identifiable from April–May.	**None.** Suitable alkaline substrate not present in the Project Area.
	valley brodiaea *Brodiaea rosea* ssp. *vallicola*	NL	NL	4.2	Silty, sandy and gravelly loam soils; valley and foothill grasslands along swales; vernal pools. 10-335 meters. Grows in grasslands on old alluvial terraces that have developed a perched water table, in vernal pool landscapes. Evident and Identifiable from April–May (June).	**None.** Vernal pool landscapes and hydrology not present.
	bristly sedge *Carex comosa*	NL	--	2B.1	Coastal prairie; margins of marshes and swamps; valley and foothill grassland. 0–625 meters. Evident and Identifiable from May–September.	**Unlikely**. Submarginal habitat occurs in the Project Area. Botanical surveys will be conducted in spring and summer 2022 to confirm absence.
	pappose tarplant *Centromadia parryi* ssp. *parryi*	NL	NL	1B.2	Often on alkaline soils; chaparral; coastal prairie; meadows and seeps; coastal salt marshes and swaps; vernally mesic valley and foothill grassland. 0–420 meters. Evident and Identifiable from May–November.	**None.** Suitable alkaline substrate not present in the Project Area.
	Parry's rough tarplant *Centromadia parryi* ssp. *rudis*	NL	NL	4.2	Valley and foothill grassland on alkaline, vernally mesic soils; seeps; sometimes roadsides; vernal pools. 0–100 meters. Evident and Identifiable from May–October.	**None.** Suitable alkaline substrate not present in the Project Area.

TABLE 3-6 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS PLANTS CONSIDERED IN THE PROJECT AREA

Listing Status	Common Name Scientific Name	Fed Status	State Status	CRPR or Other Status	Habitat	Potential to Occur
Non-listed Species (cont.)	Peruvian dodder *Cuscuta obtusiflora* var. *glandulosa*	NL	NL	2B.2	Freshwater marshes and swamps. 15–280 meters. Evident and Identifiable from July–October.	**Unlikely**. Suitable habitat present, but last seen in 1948 in Merced County. Observations in Sacramento County have not yet been verified. Botanical surveys will be conducted in spring and summer 2022 to confirm absence.
	dwarf downingia *Downingia pusilla*	NL	NL	2B.2	Mesic valley and foothill grassland; vernal pools; roadside ditches. 1–445 meters. Evident and Identifiable from March–May.	**None.** Suitable habitat not present.
	stinkbells *Fritillaria agrestis*	NL	NL	4.2	Clay or sometimes serpentine soils; chaparral; cismontane woodland; pinyon and juniper woodland; valley foothill grassland. 10–1,555 meters. Evident and Identifiable from March–June.	**None.** Suitable habitat on suitable soil is not present.
	hogwallow starfish *Hesperevax caulescens*	NL	NL	4.2	Valley and foothill grassland on mesic, clay soils; vernal pools. 0–505 meters. Evident and Identifiable from March–June.	**None.** Suitable habitat on suitable soil is not present.
	woolly rose-mallow *Hibiscus lasiocarpos* var. *occidentalis*	NL	NL	1B.2	Often in riprap on sides of levees; freshwater marshes and swamps. 0–120 meters. Evident and Identifiable from June–September.	**Unlikely**. Submarginal habitat occurs in the Project Area. Botanical surveys will be conducted in spring and summer 2022 to confirm absence.
	Northern California black walnut *Juglans hindsii*	NL	NL	1B.1	Deciduous tree found in riparian forests and riparian woodlands up to 460 meters. Widely naturalized as a result of agricultural use as a rootstock for English walnuts. Considered native and special status in stands at three sites in California only. Evident and Identifiable from April–May.	**Unlikely**. None of the special status native stands are near the Project Area.
	Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	NL	NL	1B.2	Vernal pools; mesic valley and foothill grassland. 30–229 meters. Evident and Identifiable from March–May.	**None.** Project Area outside elevation range.
	legenere *Legenere limosa*	NL	NL	1B.1	Vernal pools. 1–880 meters. Evident and Identifiable from April–June.	**None.** Suitable habitat not present.
	Heckard's pepper-grass *Lepidium latipes* var. *heckardii*	NL	NL	1B.2	Alkaline flats within valley and foothill grassland. 2–200 meters. Evident and Identifiable from March–May.	**None.** Suitable soils not present.

TABLE 3-6 (CONTINUED)
REGIONALLY OCCURRING SPECIAL-STATUS PLANTS CONSIDERED IN THE PROJECT AREA

Listing Status	Common Name Scientific Name	Fed Status	State Status	CRPR or Other Status	Habitat	Potential to Occur
Non-listed Species (cont.)	Sanford's arrowhead *Sagittaria sanfordii*	NL	NL	1B.2	Assorted shallow freshwater marshes and swamps. 0–650 meters. Evident and Identifiable from May–October (November).	**Unlikely.** Marginal habitat present. Botanical surveys will be conducted in spring and summer 2022 to confirm absence.
	Suisun Marsh aster *Symphyotrichum lentum*	NL	NL	1B.2	Brackish and freshwater marshes and swamps. 0–3 meters. Evident and Identifiable from (April) May–November.	**Unlikely.** Marginal habitat present. Botanical surveys will be conducted in spring and summer 2022 to confirm absence.
	saline clover *Trifolium hydrophilum*	NL	NL	1B.2	Marshes and swamps; mesic, alkaline valley and foothill grassland; vernal pools. 0–300 meters. Evident and Identifiable from April–June.	**None.** Suitable soils not present.

NOTES:

CRPR = California Rare Plant Rank

Status Codes:

FEDERAL

FE = listed as endangered under the Federal Endangered Species Act; FT = listed as threatened under the Federal Endangered Species Act; NL = no listing

STATE

SE = listed as endangered under the California Endangered Species Act; ST = listed as threatened under the California Endangered Species Act; NL = no listing

CALIFORNIA RARE PLANT RANK (CRPR)

Rank 1A = Plants presumed extirpated in California and either rare or extinct elsewhere; Rank 1B = Plants rare, threatened, or endangered in California and elsewhere; Rank 2A = Plants presumed extirpated in California, but more common elsewhere; Rank 2B = Plants rare, threatened, or endangered in California, but more common elsewhere.
An extension reflecting the level of threat to each species is appended to each rarity category as follows:
.1—Seriously endangered in California
.2—Fairly endangered in California
.3—Not very endangered in California

SOURCES:

California Department of Fish and Wildlife. 2021. California Natural Diversity Database (CNDDB). RareFind 5.0. Version 5.2.14. Biogeographic Data Branch.

California Native Plant Society. 2021. Special-status Plants documented on the U.S. Geological Survey 7.5-minute Sacramento East topographic quadrangle and surrounding eight quadrangles. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Rare Plant Program. Available: www.rareplants.cnps.org. Accessed January 12, 2021.

Preston, R. E. 2013. A Revision of *Brodiaea coronaria* (Asparagaceae: Brodiaeoideae): Morphometric Analysis and Recognition of New and Emended Taxa. *Systematic Botany* 38(4):1012–1028, DOI: 10.1600/036364413X674913.

U.S. Fish and Wildlife Service. 2021. List of Threatened and Endangered Species that may occur in you Proposed Project Location or may be Affected by your Proposed Project. Consultation Code: 08ESMF00-2021-SLI-0720; Event Code: 08ESMF00-2021-E-02098. Species list generated January 14, 2021.

Species unlikely to occur within the Project Area are not discussed further. The analysis below considers those special-status species that have been categorized as likely to occur or are present in the Project Area.

Federally Listed and State-Listed Wildlife Species

Valley Elderberry Longhorn Beetle

Section 3.8.1 (page 149) of the ARCF GRR FEIS/FEIR describes the ecology of valley elderberry longhorn beetle (VELB) in the Project Area. Updated occurrence information is presented below.

There are documented occurrences of VELB in Site 1-1 from 1984, when adult beetles were captured. Additional beetles were observed in 2013 and fresh exit holes were documented in 2006[28] and in 2018[29] upstream of the survey area on the lower American River in Subreach 2. In 2019 and 2020, surveys were completed to update and document the current elderberry and VELB populations within Site 1-1.[30]

Surveys were conducted in accordance with the USFWS 2017 *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle.*[31] This guidance document superseded the 1999 *Conservation Guidelines for Valley Elderberry Longhorn Beetle*.[32] Global Positioning System (GPS) point locations and data with sub-meter accuracy were taken for elderberry shrubs with stems measuring 1 inch or greater in diameter at ground level. Visual estimates of shrub height and maximum diameter (canopy) were recorded. All shrubs within the Project limits were located in riparian habitat. To ensure consistency with the previous methodology as used in the ARCF 2015 Biological Assessment, a geographic information system (GIS) was used to group elderberry stems into clusters if the stems were within 16 feet of each other (as described in the survey protocol developed by Talley and others for the original 2011 surveys). Each elderberry cluster is considered equivalent to a "shrub."

In addition to mitigating direct impacts on elderberry shrubs, the 2017 Framework focuses on maintaining the connectivity of riparian habitats. Not only do riparian habitats provide habitat used by VELB for mating, foraging, and dispersal, but studies have

28 California Department of Fish and Wildlife. 2019. California Natural Diversity Database (CNDDB) search for the U.S. Geological Survey 7.5-minute Sacramento East topographic quadrangle, and surrounding eight quadrangles. Information accessed January 12, 2021

29 Environmental Science Associates. 2018. Lower American River Subreach 2 Draft Final Resource Assessment. November 2018.

30 Environmental Science Associates. 2020. American River Common Features 2016 Project American River Erosion Protection: American River Contract 3 Detailed Resource Assessment Report Prepared for Sacramento Area Flood Control Agency. Sacramento, CA. October 2020.

31 U.S. Fish and Wildlife Service. 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus). Sacramento, California. 28 pp.

32 U.S. Fish and Wildlife Service. 1999. *Conservation Guidelines for the Valley Elderberry Longhorn Beetle.* Sacramento, California. 15 pp.

shown that healthy riparian habitats increase elderberry recruitment and health. The USFWS 2017 Framework states (pages 7–8):

> *Because the elderberry is the sole host plant of the VELB, any activities that adversely impact the elderberry shrub may also adversely impact the VELB. Adverse impacts to elderberry shrubs can occur either at a habitat scale or at an individual shrub scale. Activities that reduce the suitability of an area for elderberry plants or elderberry recruitment and increase fragmentation may have adverse impacts to mating, foraging, and dispersal of VELB. The patchy nature of VELB habitat and habitat use makes the species particularly susceptible to adverse impacts from habitat fragmentation.*

Occupied clusters of elderberry stems in the Parkway are approximately 25 to 50 meters (82 to 164 feet) apart.[33] Therefore, the area within 25 meters of the shrubs is considered a zone of riparian habitat where elderberry plants could be recruited to provide habitat that could be easily reached by VELB, if they were to occupy existing elderberry plants. Thus, surveys also determined the presence of suitable habitat for identified elderberry shrubs.

To determine elderberry shrub habitat, collected data was evaluated and assessed based on Talley et al. 2006; Talley et al. 2007;[34] Holyoak et al. 2008;[35] and Vaghti et al. 2009.[36] Elevation of floodplain, associated overstory species, and vegetation canopy structure were considered in determining the affected elderberry shrub habitat.[37] Analysis of elderberry shrub elevation data showed that elderberry shrubs rarely occur within frequently inundated areas. In a study upstream in Subreach 2, only 2 out of 599 shrubs (0.3 percent) for which elevation data was available in the Project Area occurred below the elevation of the 2-year flood (i.e., 18,500 cfs- or the OHWM), which is at about 26 feet in elevation on the National Geodetic Vertical Datum (NGVD). In Site 1-1, there is one area on the downstream end where a handful of elderberry shrubs occur below the 2-year flood elevation. Elderberry shrubs are more likely found at 12 feet above the summer low flow (at 17.4 feet or 2,660 cfs),[38] which, on average, is at about 30 feet NGVD in the Project Area. Analysis of the plant communities that elderberry shrubs are associated with found that elderberry shrubs are most commonly found in elderberry

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33 Talley, T. S., D. Wright, and M. Holyoak. 2006. *Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) 5-Year Review: Summary and Evaluation*. Prepared for U. S. Fish and Wildlife Service, Sacramento Office, Sacramento, California.

34 Talley, T. S., E. Fleishman, M. Holyoak, D. D. Murphy, and A. Ballard. 2007. Rethinking a rare-species conservation strategy in an urban landscape: The case of the valley elderberry longhorn beetle. Biological Conservation 135:21–32.

35 Holyoak, M., and M. Koch-Munz. 2008. The effects of site conditions and mitigation practices on success of establishing the Valley elderberry longhorn beetle and its host plant, blue elderberry. Environmental Management 42:444–457.

36 Vaghti, M. G., M. Holyoak, A. Williams, T. S. Talley, and A. K. Fremier. 2009. Understanding the Ecology of Blue Elderberry to Inform Landscape Restoration in Semiarid River Corridors. Environmental Management 43:28-37.

37 Elderberry shrubs above and below the OHWM will be transplanted as feasible and mitigated for at a 3:1 ratio. Riparian habitat within 82 feet of an elderberry shrub that occurs above the OHWM is considered associated elderberry habitat and will also be mitigated at a 3:1. Riparian habitat below the OHWM is not suitable elderberry shrub habitat and is not considered associated habitat; thus, it will be compensated at a 2:1 ratio.

38 Vaghti, M. G., M. Holyoak, A. Williams, T. S. Talley, and A. K. Fremier. 2009. Understanding the Ecology of Blue Elderberry to Inform Landscape Restoration in Semiarid River Corridors. Environmental Management 43:237

savanna, and black walnut– or black locust–dominated communities, but can be found in virtually all woodland and scrub communities above the OHWM. Woodland or scrub communities occurring above the OHWM and within 82 feet of an elderberry shrub canopy were considered suitable habitat for VELB. Non-native grasslands, open water, paved surfaces, and barren land were not considered habitat for VELB. **Figure 3-2** shows elderberry shrubs and habitat for the VELB within the Project Area.

Western Yellow-Billed Cuckoo

Western yellow-billed cuckoo is Federally-listed as threatened and State-listed as endangered. Section 3.8.1 (page 151) of the ARCF GRR FEIS/FEIR describes the ecology of this species in the Project Area. In May 2017 the USFWS received a petition to delist the Western distinct population segment (DPS) of the yellow-billed cuckoo. Based on the USFWS review of the petition it was determined in June of 2018 that substantial scientific or commercially available data indicating the delisting was provided and that further review of the potential delisting was warranted. However, in September of 2020, it was determined that delisting was not warranted. The Western DPS yellow-billed cuckoo is currently under 5-year review. For the most recent assessment of the species range-wide status please refer to the October 3, 2014, *Determination of Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (Coccyzus americanus occidentalis)* (79 FR 59991). On April 21, 2021, the USFWS issued a final rule designating critical habitat for the western yellow-billed cuckoo (86 FR 20798). The Project Area is outside the designated critical habitat.

Until very recently, the CNDDB's last documented occurrence of western yellow-billed cuckoo in the vicinity of the Project Area is from the late 1800s. However, on July 27, 2019, a cuckoo vocalization was documented approximately 4 miles upstream on a heavily forested island in the American River.[39] A single vocalization was heard but no additional information was gathered. Based on habitat quality, this may have been a transient bird moving through from breeding sites along the Sacramento River.

The Project Area provides marginal remnant riparian habitat that may be used for foraging or dispersal (Figure 3-2). However, the riparian habitat in the Project Area does not meet the typical size requirements (25 contiguous acres or more) for home ranges of nesting western yellow-billed cuckoos.[40]

Swainson's Hawk

Swainson's hawk is State-listed as threatened. Section 3.8.1 (pages 151–152) of the ARCF GRR FEIS/FEIR describes the ecology of this species in the Project Area. Updated occurrence information is presented below.

[39] Ron Melcer Jr., Senior Environmental Scientist–Supervisor, Delta Stewardship Council, email communication with Gerrit Platenkamp, Project Manager, ESA, July 28, 2019.

[40] U.S. Fish and Wildlife Service. 2001. Endangered and Threatened Wildlife and Plants; 12-Month Finding for a Petition to List the Yellow-Billed Cuckoo (*Coccyzus americanus*) in the Western Continental United States. *Federal Register* 66:38611–38626, July 25, 2001.

Two CNDDB occurrences of Swainson's hawk were recorded in the Site 1-1 survey area in 2010 and 2012. In 2017, a nest with two nestlings near Northgate Boulevard was identified approximately 2 miles downstream of Site 1-1 in the Parkway and another nest was identified in 2007 at Camp Pollock.[41] In addition, a nest has been regularly documented just upstream of Howe Avenue,[42] and a potential nesting pair was observed in May 2019 by a DWR survey team just downstream of Watt Avenue, approximately 1.4 miles east of the Project Area.[43]

The large trees in the riparian corridor within the Project Area and adjacent parks provide suitable nesting sites and annual grasslands and nearby parks provide suitable foraging habitat.

Bank Swallow

Bank swallow is State-listed as threatened. It is a neotropical migrant that arrives in California in May and breeds before returning to South America in late July or August. Bank swallows inhabit primarily riparian and lowland habitats with vertical banks, bluffs, and cliffs where they dig holes for nesting in sandy or fine-textured soil.[44] The species' range in California is estimated to have been reduced by 50 percent since 1900.[45] Bank swallow was formerly more common as a breeder in California. Now, only approximately 110–120 colonies remain in the state. Approximately 75 percent of the current breeding population in California occurs along the banks of the Sacramento and Feather Rivers in the northern Central Valley.[46]

Historically, a population of nesting bank swallows, was documented in the Site 1-1 survey area. The most recent record from CNDDB for this location was from 1986, but CNDDB noted that the site has since been riprapped and habitat no longer exists. The closest recent (2017) CNDDB record is from the vicinity of Knights Landing, which is approximately 15 miles from the survey area. Although nesting habitat in the survey area is limited, as the banks are mostly covered in dense vegetation, there is high-quality foraging habitat that bank swallows may use.[47]

41 California Department of Fish and Wildlife. 2021. California Natural Diversity Database (CNDDB) search for the U.S. Geological Survey 7.5-minute Sacramento East topographic quadrangle and surrounding eight quadrangles. RareFind 5.0. Version 5.2.14. Biogeographic Data Branch. Information accessed January 12, 2021.

42 K. C. Sorgen, Senior Natural Resources Specialist, Sacramento Area Flood Control Agency. Comments on an administrative draft of Wildlife Habitat Survey Report for American River Common Features 2016 Project American River Contract 1, September 10, 2019.

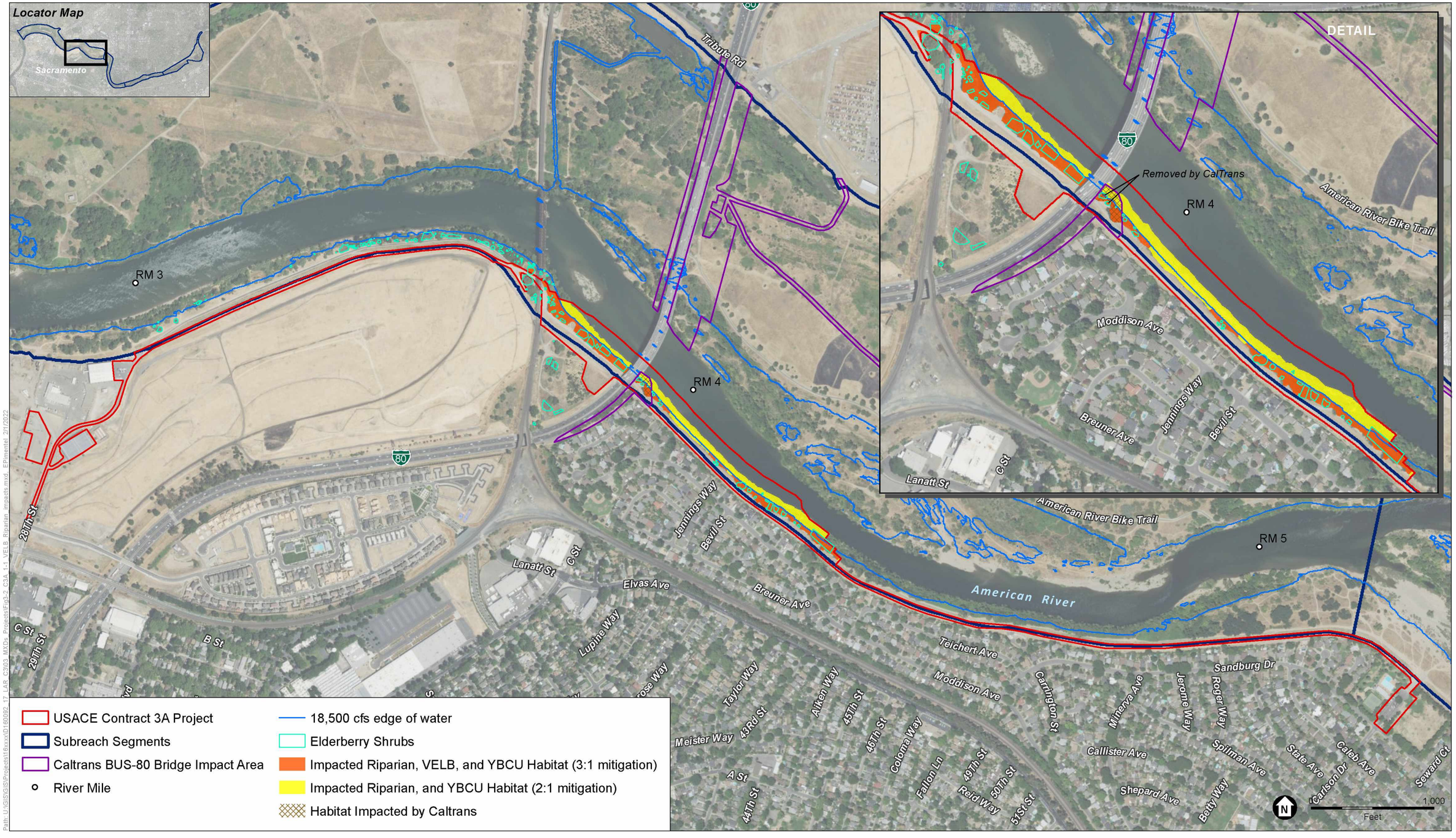
43 Lori Price, Environmental Scientist, Flood Projects Office, California Department of Water Resources. Comments on an administrative draft of Wildlife Habitat Survey Report for American River Common Features 2016 Project American River Contract 1, August 30, 2019.

44 California Department of Fish and Game. 1999. California Wildlife Habitat Relationships System California Interagency Wildlife Task Group: Bank Swallow.

45 California Department of Fish and Game. 1999. California Wildlife Habitat Relationships System California Interagency Wildlife Task Group: Bank Swallow.

46 California Department of Fish and Game. 1999. California Wildlife Habitat Relationships System California Interagency Wildlife Task Group: Bank Swallow.

47 California Department of Fish and Wildlife. 2021. California Natural Diversity Database (CNDDB) search for the U.S. Geological Survey 7.5-minute Sacramento East topographic quadrangle and surrounding eight quadrangles. RareFind 5.0. Version 5.2.14. Biogeographic Data Branch. Information accessed January 12, 2021.



SOURCE: Sacramento County, 2021; Caltrans, 2021; USACE, 2022; ESA, 2022

ARCF 2016 American Rivert Contract 3A

Figure 3-2
Impacts to VELB, YBCU, and Riparian Habitat within the LAR Contract 3A Site 1-1

ESA

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Sacramento River Winter-Run Chinook Salmon

Sacramento River winter-run Chinook salmon is Federal and State-listed as endangered. Section 3.8.1 (pages 154–157) of the ARCF GRR FEIS/FEIR describes the ecology and occurrence of this species in the ARCF GRR Project Area.

Central Valley Spring-Run Chinook Salmon

Central Valley spring-run Chinook salmon is Federal and State-listed as threatened. Section 3.8.1 (pages 156–158) of the ARCF GRR FEIS/FEIR describes the ecology and occurrence of this species in the ARCF GRR Project Area.

California Central Valley Steelhead

California Central Valley steelhead is Federal-listed as threatened. Section 3.8.1 (pages 156, 157, and 159–160) of the ARCF GRR FEIS/FEIR describes the ecology and occurrence of this species in the ARCF GRR Project Area.

North American Green Sturgeon

North American green sturgeon is Federal-listed as threatened. Section 3.8.1 (pages 156, 157, and 161–162) of the ARCF GRR FEIS/FEIR describes the ecology and occurrence of this species in the ARCF GRR Project Area.

Non-listed Special-Status Wildlife Species

Crotch Bumble Bee

The crotch bumble bee was petitioned to be added to the State endangered species list and was listed as a candidate species by CDFW in June 2019. However, the Sacramento Superior Court overturned the ruling in November 2020, stating that the California Endangered Species Act does not protect terrestrial invertebrates. This ruling is currently under appeal. Thus, the crotch bumble bee was included in this report, because it may meet the criteria for listing if higher courts determine that invertebrates may qualify for such listing and was considered a special status species in conformance with Section 15380(d) of the CEQA Guidelines.

It inhabits open grassland and scrub habitats throughout California. Crotch bumble bees primarily nest underground in mammal burrows, but are occasionally observed in old logs and cavities in trees, among other aboveground locations. They are generalist foragers, with short tongues, and thus prefer foraging on open flowers with short corollas. They overwinter in soft disturbed soil or under leaf litter.[48]

This species was historically common throughout the Central Valley, but now is mostly absent. The closest occurrence documented in the CNDDB, last recorded in 2020, was just east of Mather Air Force Base approximately 12 miles east of the Project area. Documented occurrences are limited in the Central Valley, but that may partially be due

[48] California Department of Fish and Wildlife. 2019. Evaluation of the Petition from the Xerxes Society, Defenders of Wildlife, and the Center for Food Safety to List Four Species of Bumble Bees as Endangered under the California Endangered Species Act. Sacramento, CA. April 4, 2019. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=166804&inline. Accessed December 12, 2019.

to under reporting. Two other sighting were documented within 20 miles of the Project Area in 2020: one just west of Davis and one in the Consumnes River Preserve. Suitable foraging habitat occurs in the survey area in annual grassland and scrub habitats. The potential for nesting and overwintering within the levees is unknown, due to potential frequent flooding and the limited data available documenting the bee's habits, but sufficient rodent burrows do occur.

Western Pond Turtle

Western pond turtle is a California species of special concern. This moderate-sized aquatic turtle is commonly found in ponds, lakes, marshes, rivers, streams, and irrigation ditches with rocky or muddy substrates. It basks in sandy areas that may or may not be bordered by aquatic vegetation. Aquatic sites are often within woodlands, grasslands, and open forests between sea level and 6,000 feet. Western pond turtle nests are created in upland areas with friable soils, often up to 0.25 miles from an aquatic site.[49,50]

Western pond turtles are discontinuously distributed throughout California west of the Cascade-Sierran crest.[51] There are documented CNDDB occurrences for this species. This species was observed in 2021 upstream of the Project Area near the Campus Commons Golf Course, on the right bank of the river, basking on a log in the water.[52] Pond turtles are expected to use upland and aquatic habitat in the Project Area throughout the year.

Burrowing Owl

Burrowing owl is a California species of special concern. Section 3.8.1 (pages 152–153) of the ARCF GRR FEIS/FEIR describes the ecology of this species in the Project Area. Recent occurrence information is presented below.

The closest CNDDB occurrence of burrowing owl was in 1974 and is just east of Site 2-1, in Subreach 2, on the university campus and approximately two miles east of the survey area, but has since been developed. More recent occurrences have been documented on levees along the Natomas Drainage Canal (2007) and along an irrigation canal near Elk Horn Boulevard (2012) within 5 miles of the Project Area. The non-riparian areas of the levee and bike path along the Project corridor in the staging and access areas of the Project Area consist of disturbed grasslands with small-mammal burrows and ground squirrel activity. This area provides nesting habitat for burrowing owl. During reconnaissance-level surveys, no burrowing owls nor signs of occupied burrows were found.

49 Jennings, M. R., and M. P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California*. Final report submitted to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA.

50 Zeiner, D. C., W. F. Laudenslayer Jr., and K. E. Mayer (comp. eds.). 1988. *California's Wildlife. Volume I: Amphibians and Reptiles.* California Statewide Wildlife Habitat Relationships System. Sacramento: California Department of Fish and Game.

51 Jennings, M. R., and M. P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California*. Final report submitted to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA.

52 Environmental Science Associates. 2021. Wildlife Habitat Survey Report: American River Common Features Project American River Contracts 3A and 4A. Prepared for Sacramento Area Flood Control Agency. December 2021.

Purple Martin

Purple martin is a California species of special concern. Section 3.8.1 (page 153) of the ARCF GRR FEIS/FEIR describes the ecology and occurrence of the purple martin, a California species of special concern, and its potential to nest within the Project Area.

White-Tailed Kite

White-tailed kite is a State fully protected species. Section 3.8.1 (page 153) of the ARCF GRR FEIS/FEIR describes the ecology and occurrence of this species in the Project Area.

Birds Protected by the Migratory Bird Treaty Act and California Fish and Game Code Subsections 3503 and 3503.5

The Federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC) protect raptors, most native migratory birds, and breeding birds that could be present in the Project Area. The Parkway corridor provides high-quality foraging and nesting opportunities for a variety of resident and migratory birds. Common species that may nest in the Parkway's mature trees include western scrub jay, acorn woodpecker, downy woodpecker, northern flicker, black phoebe, American robin, western bluebird, ash-throated flycatcher red-tailed hawk, red-shouldered hawk, and great horned owl. Remnant swallow nests were observed under the Highway 160 Bridge. A full list of species observed in the Project Area is provided in Appendix B. Additional information for Cooper's hawk, great egret, and great blue heron is provided below.

Cooper's Hawk

Cooper's hawk is a CDFW watch list species. Cooper's hawk is a resident of wooded areas throughout California, with breeding described throughout the Coast Ranges and Sierra Nevada foothills. The species' peak nesting season is May through July, although nesting may occur any time from March to August.[53]

A Cooper's hawk nest was recorded by the CNDDB within 0.5 mile south of the Project Area in 2007 and 2008.[54] Woodland habitat in and near the Project Area provides potential nesting opportunities for this species.

Great Egret

Great egret is a species protected under the MBTA. This species is a common yearlong resident throughout California, except for high mountains and deserts. They nest in colonies in large trees usually near water. Nests are often sheltered from prevailing winds and may be as high as 100 feet off the ground. Great egrets feed and rest in wetlands, and along the margins of estuaries, lakes, riverine features, mudflats, salt ponds, and irrigated agricultural lands. There is a documented egret rookery approximately 0.5 miles downstream and another approximately 6 miles upstream of the survey areas on the American River.

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53 Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White (eds.). 1990. *California's Wildlife. Volume II: Birds.* Sacramento: California Department of Fish and Game.

54 California Department of Fish and Wildlife. 2021. California Natural Diversity Database (CNDDB) search for the U.S. Geological Survey 7.5-minute Sacramento East topographic quadrangle and surrounding eight quadrangles. RareFind 5.0. Version 5.2.14. Biogeographic Data Branch. Information accessed November 11, 2021.

Great Blue Heron

Great blue heron is a species protected under the MBTA. This species is commonly found all year throughout most of California in shallow estuaries and emergent wetlands. They are less commonly found along riverine and rocky marine shorelines, croplands, pastures, and mountains. They usually nest in colonies on the tops of secluded large snags or live trees, usually among the tallest available. There is a documented heron rookery approximately 0.5 miles downstream and another approximately 6 miles upstream. upstream of the survey areas on the American River.

Pallid Bat

Pallid bat, a California species of special concern, occurs throughout California except in parts of the high Sierra and the northwestern corner of the state.[55] The pallid bat inhabits a variety of habitats, such as grasslands, shrublands, woodlands, and forests; however, it is most abundant in open, dry habitats with rocky areas for roosting. Pallid bats roost alone, in small groups, or gregariously.[56] Roosts include caves, crevices in rocky outcrops and cliffs, mines, trees, and various manmade structures (e.g., bridges, barns, porches); they generally have unobstructed entrances/exits that are high above the ground, warm, and inaccessible to terrestrial predators. Year-to-year and night-to-night roost reuse is common; however, bats may switch day roosts on a daily and seasonal basis.[57]

The pallid bat is the most widely described special-status bat species in central California. No occurrences are reported within 5 miles of the Project Area, or in the nine-quadrangle area that includes the Project Area. No bats were observed during reconnaissance-level surveys; however, they could utilize the railroad or Interstate 80 bridge for a day roost.

Western Red Bat

The western red bat is a California species of special concern. This is a riparian obligate species (i.e., a species dependent on riparian habitat) that is ubiquitous throughout California except in the northern Great Basin region. Western red bats roost individually in dense clumps of tree foliage in riparian areas, orchards, and suburban areas. Individuals have been observed foraging around street lamps and floodlights in suburban areas.[58]

Based on its tendency to roost within tree foliage, this species may be intermittently present in the riparian and woodland habitat in the Project Area. However, roosting occurrences are not reported by the CNDDB within 5 miles of the Project Area or in the nine-quadrangle area that includes the Project Area.

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55 Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White (eds.). 1990. *California's Wildlife. Volume III: Mammals.* Sacramento: California Department of Fish and Game.

56 Western Bat Working Group. 2005. Western Bat Working Group Species Accounts for all Bats. Available: http://www.wbwg.org/speciesinfo/species_accounts/allbats.pdf.

57 Western Bat Working Group. 2005. Western Bat Working Group Species Accounts for all Bats. Available: http://www.wbwg.org/speciesinfo/species_accounts/allbats.pdf.

58 Western Bat Working Group. 2005. Western Bat Working Group Species Accounts for all Bats. Available: http://www.wbwg.org/speciesinfo/species_accounts/allbats.pdf.

American Badger

The American badger is a California species of special concern. This species prefers open grasslands and riparian habitat in the valley areas, although it is present throughout multiple habitat types in California. This species inhabits areas with friable soils to excavate dens and pursue prey, and relatively open, uncultivated ground. In California, badgers range throughout the state, except for the humid coastal forests of northwestern California in Del Norte County and northwestern Humboldt County.[59]

Reconnaissance-level wildlife surveys of the Project Area in fall 2021 did not detect any badger excavations or other signs of presence. This species was previously observed in the vicinity of the Project Area, but the observation is almost 30 years old. Nonetheless, suitable habitat is present in the Project Area in annual grasslands.

Central Valley Fall-/Late Fall–Run Chinook Salmon

Section 3.8.1 (pages 156, 157, and 158–159) of the ARCF GRR FEIS/FEIR describes the ecology and occurrence of this species in the Project Area.

Hardhead

Hardhead is a California fish species of special concern found at low to mid-elevations in relatively undisturbed habitats of larger streams with clear, cool water. This species prefers pools and runs with deep, clear water, slow velocities, and sand-gravel-boulder substrates. The range for hardhead extends from the Pit River in the north to the Kern River in the south. The species is common in the Lower American River.[60]

Western River Lamprey

Western river lamprey is a California species of special concern. This species prefers clean, gravelly riffles in permanent streams for adult spawning while larvae need sandy to silty backwaters or stream edges. Their range extends from just north of Juneau, Alaska, south to tributaries of the San Joaquin River. They have been observed in the Lower American River.[61]

Listed Special-Status Plant Species

No listed special-status plants have the potential to occur within the Project Area.

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59 Williams, D. F. 1986. *Mammalian Species of Special Concern in California*. Wildlife Management Division Administrative Report 86-1. Sacramento: California Department of Fish and Game. June 1986.

60 Moyle, P.B., R. M. Quiñones, J. V. Katz and J. Weaver. 2015. *Fish Species of Special Concern in California.* Third Edition. Sacramento: California Department of Fish and Wildlife. Available: https://www.wildlife.ca.gov/Conservation/SSC/Fishes. Accessed January 10, 2021.

61 Moyle, P.B., R. M. Quiñones, J. V. Katz and J. Weaver. 2015. *Fish Species of Special Concern in California.* Third Edition. Sacramento: California Department of Fish and Wildlife. Available: https://www.wildlife.ca.gov/Conservation/SSC/Fishes. Accessed January 10, 2021.

Non-Listed Special-Status Plant Species

Sanford's Arrowhead

Section 3.8.1 (page 162) of the ARCF GRR FEIS/FEIR describes the ecology and of this species in the Project Area. Updated occurrence information is presented below.

Sanford's arrowhead was not observed within Site 1-1 during general biological surveys, conducted by Environmental Science Associates in fall 2021 and is not likely to occur due to lack of suitable habitat. However, there are known occurrences upstream, thus focused botanical surveys will be conducted prior to the start of construction to confirm its absence.

Bristly Sedge

Bristly sedge is a California Rare Plant Rank (CRPR) 2B plant.[62] This species is found in coastal prairie, margins of marshes and swamps, and valley and foothill grassland from 0 to 625 meters. It is identifiable from May to September. This species was not observed within Site 1-1 during general surveys conducted in 2021. Additional botanical surveys will be conducted prior to the start of construction to confirm its absence.

Woolly Rose-Mallow

Woolly rose-mallow is a CRPR 1B plant. This species is often found in riprap on sides of levees in freshwater marshes and swamps and is identifiable from June to September. This species was not observed within Site 1-1 during general surveys conducted in 2021. Additional botanical surveys are scheduled for spring/summer 2022, to confirm its absence.

Critical Habitat for Listed Species

USFWS defines the term "critical habitat" in the Federal Endangered Species Act as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat has been designated for the following regionally occurring species: western yellow-billed cuckoo, California red-legged frog, California tiger salamander, conservancy fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, Sacramento Orcutt grass, slender Orcutt grass, and VELB. The Project Area does not occur within designated critical habitat for any of these species.

The Project Area is within designated critical habitat for Central Valley spring-run Chinook salmon and California Central Valley steelhead.

The National Marine Fisheries Service (NMFS) defines the term "essential fish habitat" in the Magnuson-Stevens Fishery Conservation and Management Act as waters and substrate of the United States necessary for fish spawning, breeding, or growth to maturity. The Project Area is within essential fish habitat for Chinook salmon.

62 The CNPS Rare Plant Ranking system ranges from presumed extinct species, California Rare Plant Rank (CRPR) 1A, to limited distribution species now on a watch list CRPR 4.

3.6.2 Methodology and Basis of Significance

3.6.2.1 Methodology

This analysis generally uses the same methodology described in Section 3.8.2 (pages 162–163) of the ARCF GRR FEIS/FEIR. Impacts on special-status species in the Project Area were evaluated based on data collected from biological resources surveys conducted in 2019, 2020, and 2021 at Site 1-1 and from other resources such as the following:

- Aerial imagery.
- A list of special-status wildlife species with potential to occur in or in the vicinity of the Project Area that was compiled from a nine-quadrangle search of the CNDDB.[63]
- A USFWS species list for the Project Area generated using the online Information for Planning and Consultation (IPaC) database.[64]
- A list of special-status plant species with potential to occur in or in the vicinity of the Project Area that was compiled from a nine-quadrangle search of the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants of California.[65]
- Literature regarding the biological resources of the region.
- Coordination with USFWS and NMFS.
- The Standard Assessment Methodology (SAM) model for fish species.

For this analysis, the Project alternatives were determined to have a significant impact on special-status species if Project activities would have a substantial adverse effect, either directly or through habitat modification, on any species identified as candidate, sensitive, or special-status in local or regional plans or policies, or regulations, or by CDFW, USFWS, or NMFS. Species that are not currently listed under the State or Federal Endangered Species Acts as rare, threatened, or endangered, but that can be shown to meet the criteria for such listing, were also considered special-status species (CEQA Guidelines Section 15380[d]). The impact analysis also considered the goals and objectives of the American River Parkway Plan and how Project construction would affect those goals and objectives. Impacts on special-status species were evaluated based on anticipated construction activities and changes to habitat types after construction of the Project.

63 California Department of Fish and Wildlife. 2021. California Natural Diversity Database (CNDDB) search for the U.S. Geological Survey 7.5-minute Sacramento East topographic quadrangle and surrounding eight quadrangles. RareFind 5.0. Version 5.2.14. Biogeographic Data Branch. Information accessed November 11, 2021.

64 U.S. Fish and Wildlife Service. 2021. List of Threatened and Endangered Species that may occur in you Proposed Project Location or may be Affected by your Proposed Project. Consultation Code: 08ESMF00-2021-SLI-0720; Event Code: 08ESMF00-2021-E-02098. Species list generated November 15, 2021.

65 California Native Plant Society. 2021. Special-status Plants documented on the U.S. Geological Survey 7.5-minute Sacramento East topographic quadrangle and surrounding eight quadrangles. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Rare Plant Program. Available: www.rareplants.cnps.org. Accessed December 12, 2021.

The SAM analysis used measurements of SRA habitat features in both existing (without-project) and designed (with-project) conditions. Shoreline surveys conducted in 2019 and 2020 provided the without-project data and the 65-percent design plans provided the with-project data. The SAM analysis for individual fish species followed the approach used in the 2015 NMFS Biological Opinion (BO) for the ARCF 2016 Project and revised in the 2021 NMFS BO.

As described in the original NMFS BO[66] and 2021 NMFS BO,[67] SAM results are weighted relative response index (WRI) values that represent the difference between modeled fish responses to existing (without-project) conditions and designed (with-project) conditions. Negative WRI values indicate that existing conditions are better for fish and positive WRI values indicate that designed (proposed future) conditions are better for fish. While the quantified WRI values are provided in Appendix C, these numbers are used on a qualitative basis to determine the extent of impacts, and not a quantitative basis to assign value or absolute extent of impacts. Instead, impacts and mitigation have been assessed by determining the slope-area of the project footprint. The slope-area involves measuring surface area of the levee slope below the OHWM (18,500 cfs) and the natural benthic substrate out to the limit of rock placement. See Appendix C for details on updated SAM analysis methods and results.

3.6.2.2 Basis of Significance

This analysis uses the same basis of significance described in Section 3.8.2 (page 163) of the ARCF GRR FEIS/FEIR, as restated below.

The Proposed Action would result in a significant effect related to special-status species if it would result in:

- Substantial direct or indirect reduction in growth, survival, or reproductive success of species listed or proposed for listing as threatened or endangered under the Federal or California Endangered Species Act;
- Substantial direct mortality, long-term habitat loss, or lowered reproductive success of Federally or State-listed threatened or endangered animal or plant species or candidates for Federal listing;
- Direct or indirect reduction in the growth, survival, or reproductive success of substantial populations of Federal species of concern, State-listed endangered or threatened species, plant species listed by the California Native Plant Society, or species of special concern or regionally important commercial or game species; or
- An adverse effect on a species' designated critical habitat.

66 National Marine Fisheries Service. 2015. Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the American River Common Features General Reevaluation Report. pp. 25–26.

67 National Marine Fisheries Service. 2021. Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the American River Common Features General Reevaluation Report Reinitiation. pp. 40-41.

Effects Not Evaluated Further

Section 3.6.2, *Environmental Setting*, above discusses all special-status wildlife, fish, and plant species evaluated in this analysis and summarizes the potential for each of these species to be present in the Project Area. The wildlife, fish, and plant species listed in Tables 3-5 and 3-6 that are not expected to occur, or have low potential to occur (because the Project Area does not provide suitable habitat for the species, or because the Project Area is generally outside the species' range) are not analyzed further in this Supplemental EIR.

3.6.3 Impact Analysis

3.6.3.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the Proposed Action would not be implemented, and the Sacramento metropolitan area would experience no change in the present level of risk of flooding due to levee failure because of seepage, slope stability, overtopping, or other erosion concerns. This analysis finds the same effects as are described in Section 3.8.3 (page 163) of the ARCF GRR FEIS/FEIR, which are summarized below.

Under the No Action Alternative, no construction-related impacts would occur. If a levee failure were to occur, however, special-status species would experience substantial adverse effects as a result of flooding. The potential for loss of lives and property would require emergency action. The required emergency procedures could have significant effects on special-status species, such as sedimentation and turbidity from emergency repair efforts, a need to suspend best management practices (BMPs), permanent loss of SRA habitat as a result of rock placement, long-term loss of habitat for non-aquatic species, lack of reproductive success, and mortality. All these effects on special-status species would be significant; however, the timing, duration, and magnitude of a flood event is unpredictable, making a precise significance determination impossible.

3.6.3.2 Proposed Action

The following impact analysis is drawn from Section 3.8.4 (pages 164–180) of the ARCF GRR FEIS/FEIR, as revised to reflect Site 1-1 and the impacts of the Proposed Action.

Valley Elderberry Longhorn Beetle

Construction would directly affect 1.71 acres of VELB habitat at Site 1-1. These areas include the shrub and the riparian habitat within 25 meters (82 feet), which is considered VELB habitat. The impact of this loss of Federally listed species habitat would be significant. The impact would be reduced to a less-than-significant level with implementation of Mitigation Measure VELB-1, which would include creating 5.13 acres of off-site VELB habitat. The affected shrubs would be transplanted to the approved elderberry shrub mitigation sites: Paradise Bend/Glenn Hall, Rio Americano West, Rio Americano East and the Rossmoor East Mitigation Sites or other elderberry shrub mitigation sites in the LAR as described in Chapter 2, *Project Description* of the

American River Watershed Common Features, Water Resources Development Act of 2016, American River Contract 1 Supplemental Environmental Assessment/ Supplemental Environmental Impact Report and Chapter 2 of the *Project Description* of the *American River Watershed Common Features, Water Resources Development Act of 2016, American River Contract 2 Supplemental Environmental Impact Statement/ Supplemental Environmental Impact Report*.

Operation and maintenance (O&M) by the American River Flood Control District of the mitigation sites planned as part of the Proposed Action could require the trimming of elderberry shrubs as described in Section 3.8.4 (page 165) of the ARCF GRR FEIS/FEIR. As part of long-term O&M, up to 0.5 acre of elderberry shrubs would be trimmed by the American River Flood Control District, and up to 25 acres over the life of the ARCF GRR project (ARCF GRR FEIS/FEIR, Table 20). Trimming consists of cutting overhanging branches along the levee slopes on both the landside and waterside. Some shrubs may be located adjacent to the levee with branches hanging over the levee maintenance road. Up to a third of a shrub would be trimmed in a single season. Trimming would occur between November 1 and March 15. This loss of VELB habitat would be significant.

To offset this impact, Project Partners would implement Mitigation Measure VELB-1. Specifically, the mitigation for O&M impacts would be offset by development of off-site mitigation sites that would be designed in accordance with the 2017 Framework. In addition, each year the American River Flood Control District would document the amount of VELB habitat that they have trimmed and report that number to USACE to ensure compliance with the USFWS Biological Opinion. If the local maintaining agency has a need to exceed the amount of VELB habitat which needs to be trimmed or affected due to routine maintenance, then they would request that USACE reinitiate consultation on this biological opinion for those actions. With the implementation of the mitigation discussed above, O&M activities would result in less-than-significant impacts on VELB.

Western Yellow-Billed Cuckoo

As described in the Proposed Action effects discussion in Section 3.8.4 (page 167) of the ARCF GRR FEIS/FEIR, the Project Area is unlikely to support nesting western yellow-billed cuckoos because the riparian corridor is narrow, patchy, and frequented by park visitors. Construction of Site 1-1would result in the loss of 4.25 acres of riparian habitat (Table 3-4). This loss of habitat would be a significant impact. With implementation of Mitigation Measures VELB-1, VEG-1, VEG-2, and BIRD-1, the impact would be reduced to a less-than-significant level.

Swainson's Hawk

As described in Section 3.8.4 (page 168) of the ARCF GRR FEIS/FEIR, the Project Area possesses suitable roosting and nesting habitat for Swainson's hawk. Project construction could affect the riparian habitat used by this species for roosting and nesting. Although the removal of riparian trees would be mitigated through compensatory plantings, there would be a temporal loss of habitat until the newly planted trees could become

established and mature. Long-term effects on Swainson's hawk nesting habitat could result from the loss of riparian habitat in the Project Area as follows: 1.09 acres at Site 1-1 for erosion protection efforts, and 0.36 acre at Site 1-1 of riparian woodland habitat within the access areas, haul routes, and staging areas. This would be a significant impact on Swainson's hawk nesting habitat.

Before the start of construction, pre-construction surveys would be conducted following the Swainson's Hawk Technical Advisory Committee Guidance.[68] Should surveys indicate that nesting Swainson's hawk are present, the potential would exist for short-term, temporary impacts during construction from dust, noise, and vibration.

The compensatory mitigation proposed to address impacts to western yellow-billed cuckoo would also compensate for the loss of Swainson's hawk nesting habitat within riparian habitat. Both species use riparian trees for nesting, and mitigation plantings to address Project-related impacts on western yellow-billed cuckoo would additionally benefit Swainson's hawk. Potential nesting habitat would be temporarily reduced because there would be a lag time between when trees would be removed or trimmed during Project construction and when the replacement trees would be mature enough to support raptor nesting. There would be a net increase in the extent and quality of riparian habitat that would be present once the mitigation plantings become established. With implementation of the mitigation measures identified for impacts on riparian habitat (VEG-1 and VEG-2) and nesting birds (BIRD-1), the impact on Swainson's hawk from construction-related activities would be reduced to a less-than-significant level.

O&M activities after construction would be consistent with existing O&M practices, so any impacts associated with O&M would also be similar to existing conditions. O&M would involve activities such as mowing, herbicide application, and rodent control. Rodent control would be limited to preventing rodents from burrowing and undermining the levee; therefore, rodent control actions are not expected to appreciably reduce the prey base for Swainson's hawk. Mowing in the Project Area may also increase the visibility of prey, thereby enhancing foraging efficiency for Swainson's hawk. Application of herbicides would be limited and is not expected to appreciably affect habitat conditions for Swainson's hawk (i.e., no loss of nesting trees or loss of grassland foraging habitat). O&M would involve limited vegetation trimming and management to facilitate visual inspections of the levee. This vegetation trimming is expected to focus largely on shrubs and small, short trees whose presence may be concealing levee erosion issues. Therefore, vegetation management during O&M activities is not anticipated to affect large trees that represent suitable nesting habitat for Swainson's hawk. Because these activities would be short term, and the resulting impacts would be temporary, impacts of O&M would be less than significant.

[68] Swainson's Hawk Technical Advisory Committee. 2000. *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*. May 31, 2000.

Bank Swallow

Bank swallows historically nested along the Lower American River, as recently as 1986, and continue to forage in the area, but are not known to nest in the Project Area due to the dense vegetation and riprap cover on the banks in Site 1-1. If present in the vicinity of the Project Area, nesting bank swallow colonies could be directly affected if the proposed erosion protection measures were implemented during the species' nesting season (April 1 through August 31). Thus, measures to reduce erosion risk could indirectly affect bank swallows by removing suitable or potentially suitable foraging habitat and making the banks unsuitable for future use by bank swallows. This impact on bank swallow would be significant. With implementation of Mitigation Measure BIRD-1, including pre-construction surveys, training of construction crews, and avoidance buffers if nesting birds are located, the impact on bank swallow from construction activities would be reduced to a less-than-significant level.

O&M activities after construction would be consistent with existing O&M practices, so any impacts also would likely be consistent with existing conditions. In addition, these activities would be short term, and the resulting impacts would be temporary and less than significant.

Crotch Bumble Bee

Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from flowers, and suitable overwintering sites for queens. The Crotch bumble bee nests primarily underground in abandoned rodent burrows. They are generalist foragers. Very little is known about the overwintering sites of Crotch bumble bees, but overwintering habitat for bumble bees in general is often in soft, disturbed soil or under leaf litter or similar debris. Direct impacts of project construction could include mortality of individuals or nests as a result of activities such as vegetation removal and materials staging, or from construction equipment traffic. Vegetation removal could also result in a reduction of foraging habitat. With implementation of Mitigation Measure BEE-1 identified below for Crotch bumble bee, and Mitigation Measures VEG-1 and VEG-2 the impact of construction on this species would be reduced to a less-than-significant level.

O&M activities after construction would likely be consistent with existing O&M practices (except as described in Mitigation Measure BEE-1's statement regarding rodent abatement), so any impacts also would likely be consistent with existing conditions. In addition, these activities would be intermittent, and the resulting impacts would be temporary and less than significant with mitigation.

Burrowing Owl

During their nesting period (February 1 through August 15), burrowing owls could use small-mammal burrows in grassland areas that are present in and adjacent to the levees along the American River. If present, ground disturbance (excavation and backfilling) could result in direct mortality or injury of burrowing owls within burrows and similar

nesting features. Such features could be disturbed or destroyed during construction in staging areas. This would be a significant impact. However, because there is only habitat for burrowing owls in staging areas and transplant areas there is flexibility to avoid active burrows. Thus, implementation of pre-construction surveys to identify active burrows and placement of avoidance buffers to avoid active burrows, as described in Mitigation Measure BIRD-1, would reduce potential impacts from construction on burrowing owl to a less-than-significant level.

O&M activities after construction would be consistent with existing O&M practices, so any impacts also would likely be consistent with existing conditions. Ongoing rodent control could limit the available of small-mammal burrows often used by burrowing owl. However, because rodent control would be limited to areas where such burrows could threaten the integrity of the levee system, such actions are not expected to substantially reduce the availability of suitable burrows for burrowing owl along the American River. Mowing tall vegetation also improves foraging habitat conditions and accessibility to burrows. Therefore, because O&M activities would be short term and the resulting impacts would be temporary, impacts of O&M would be less than significant.

White-Tailed Kite

The Project Area contains numerous large riparian trees that provide suitable nesting conditions for white-tailed kite. Noise from heavy construction machinery could prompt nest abandonment and subsequent failure of nests in and near construction activity areas. Vegetation removal could also result in direct take of active white-tailed kite nests. This would be a significant impact. Implementation of Mitigation Measures VEG-1 and VEG-2 would reduce the impact on riparian nesting habitat to a less-than-significant level. Implementation of Mitigation Measure BIRD-1 would reduce the impact on nesting white-tailed kites to a less-than-significant level.

O&M activities after construction would be consistent with existing O&M practices, so any impacts also would likely be consistent with existing conditions. Vegetation management during O&M activities is not anticipated to affect large trees, limiting the potential for such activities to affect nesting habitat for white-tailed kite. Therefore, because O&M activities would be short term and the resulting impacts would be temporary, impacts of O&M would be less than significant.

Purple Martin

Purple martins inhabit riparian forest and woodland areas and nest in tree cavities or crevices of cliffs. This species is also known to use infrastructure such as bridge and overpasses (e.g., weep holes) or other manmade structures (e.g., lamp posts, traffic lights, birdhouses) for nesting. By removing riparian woodland, the Project could continue to fragment suitable habitat for this species. Noise from heavy construction machinery could prompt nest abandonment and subsequent failure of nests in and near construction activity areas. Vegetation removal could also result in direct take of purple martins if any are nesting in the trees targeted for removal. This impact would be significant. With implementation of Mitigation Measure BIRD-1 and restoration of riparian habitat in the

Parkway, the impact of construction on purple martin would be reduced to a less-than-significant level.

O&M activities after construction would be consistent with existing O&M practices, so any impacts also would likely be consistent with existing conditions. The application of herbicides could also indirectly affect purple martins by wilting or killing vegetation that contributes to the production of their prey (i.e., insects). Vegetation management during O&M activities would not likely affect nesting habitat for purple martin because it would not target the large trees (more specifically, large trees with cavities) used by this species. Mowing noise may temporarily disturb purple martins, but the activity would be only sporadic and short term.

Other Breeding and Migratory Birds

Many non-listed bird species that are otherwise protected by the MBTA and the CFGC are expected to be present in the Project Area. These include Cooper's hawk, great blue heron, great egret, and other common passerine, raptor, and wading bird species. General disturbance, including exposure to noise, vibration, and dust, could adversely affect nesting birds by altering their nesting behaviors (e.g., prompting adults to abandon eggs or chicks in nests). Construction activities would occur during a period that overlaps with the nesting season for numerous bird species that are present in the Project Area. Construction work, including removal of riparian trees, during the nesting season could result in the destruction of nests and eggs and mortality of nestlings. This would be a significant impact. With implementation of Mitigation Measure BIRD-1, the impact of construction on non-listed birds protected by the Migratory Bird Treaty Act or the California Fish and Game Code would be reduced to a less-than-significant level.

O&M activities after construction are expected to be consistent with existing O&M practices, so any impacts also would likely be consistent with existing conditions. Vegetation management for O&M activities is not anticipated to affect large trees, limiting the potential for such activities to affect nesting birds. Therefore, because O&M activities would be short term and the resulting impacts would be temporary, impacts of O&M would be less than significant.

Western Pond Turtle

Western pond turtle inhabits rivers, pond, wetlands, and irrigation ditches for aquatic habitat and sandy or grassland areas for upland habitat. This species nests in upland areas within one-quarter mile of aquatic habitat. Construction equipment accessing areas occupied by western pond turtle could strike turtles that are nesting, basking, or traversing upland habitat, resulting in mortality of these animals. Western pond turtles may also be crushed or entombed when construction equipment causes burrows to collapse. In addition, fuel, oil, other petroleum products, and other chemicals used during maintenance activities could be accidentally introduced into waterways. In sufficient concentrations, these contaminants would be toxic to western pond turtles and their prey species. This would be a significant impact. With implementation of Mitigation Measures

TURTLE-1 and WQ-1, the impact of construction on western pond turtle would be reduced to a less-than-significant level.

O&M activities, including vegetation management along the levees, could involve mowing and trimming of small trees and shrubs using hand tools or machinery. Such activities could incidentally collapse burrows or crush nests on the ground, potentially affecting western pond turtle individuals or their habitat. Pond turtles could be killed or injured by mower blades when they are above ground (e.g., during periods of cooler temperatures, such as early mornings) and unable to leave areas being maintained because of their relative lack of mobility. Mowing equipment could crush or expose a buried western pond turtle nest, potentially resulting in nest failure. This would be a significant impact. With implementation of Mitigation Measures TURTLE-1 and WQ-1, the impact of O&M on western pond turtle would be reduced to a less-than-significant level.

Pallid Bat

Construction activities could disturb riparian forest, which provides potential roosting habitat for pallid bat. Potential roosting habitat for pallid bat is also present underneath the railroad bridge and Interstate 80 Bridge. The period of construction activities would overlap the bat maternity season (generally May 1 to August 31). Tree removal in riparian habitat could adversely affect breeding and non-breeding pallid bats by causing the loss of established roosts and potential roosting habitat. Project construction work around vehicle bridge crossing the American River could also disturb pallid bat if they were occupying any of the bridges. General construction-related disturbance, including exposure to noise, vibration, and dust, could adversely affect breeding and non-breeding bats. This would be a significant impact. With implementation of Mitigation Measure BATS-1, the impact of construction on this species would be reduced to a less-than-significant level.

O&M activities, specifically trimming or removal of woody vegetation along the levees, could indirectly and directly affect colonies of roosting pallid bats by resulting in the loss or modification of habitat. However, such management of woody vegetation is largely expected to avoid the mature riparian trees where bats are most likely to be present, minimizing the potential for O&M activities to affect roosting pallid bats. The O&M activities associated with application of herbicides could indirectly affect pallid bats by wilting or killing vegetation that contributes to the production of their prey (i.e., insects). However, the application of herbicides would be highly localized and would focus on helping to eradicate unwanted weedy plants in the Project Area. Thus, the application of herbicides as part of O&M for the Proposed Action is not anticipated to appreciably affect the supply of prey for pallid bat. The impact of O&M on pallid bat would be less than significant.

Western Red Bat

Western red bats may establish day roosts in the foliage of large cottonwood, oak, and willow trees in the Project Area, and maternal roosts may occur in large well-developed stands of riparian habitat. Tree removal in riparian habitat could affect western red bats if

they are present. General construction-related disturbance, including exposure to noise, vibration, and dust, could adversely affect breeding and non-breeding bats. This would be a significant impact. With implementation of Mitigation Measure BATS-1 and restoration of riparian habitat in the Parkway the impact of construction on this species would be reduced to a less-than-significant level.

O&M activities, specifically trimming or removal of woody vegetation along the levees, could indirectly and directly affect colonies of roosting bats by resulting in the loss or modification of habitat. However, such management of woody vegetation is largely expected to avoid the mature riparian trees where bats are most likely to be present, minimizing the potential for O&M activities to affect roosting bats Other potential effects of O&M under the Proposed Action on western bat are the same as those described previously for pallid bat.

American Badger

American badger inhabits grasslands and riparian habitats. Potential impacts on American badger include mortality, injury, displacement, and harassment, along with permanent and temporary loss of habitat. During construction under the Proposed Action, badgers would be at risk of direct impacts such as vehicle strikes, along with impacts from loss of habitat, increased risks of predation loss, and disruption of behavioral patterns. Heavy machinery operating in the Project Area could compact the soil, making the ground less suitable for digging for badgers and their primary prey species. This would be a significant impact. Implementation of Mitigation Measure BADGER-1 would reduce this impact to a less-than-significant level.

O&M activities are expected to have only minor effects on habitat conditions for American badger. No widespread soil compaction is anticipated, and rodent control would result in only limited ground disturbance. Mowing work along the levees may displace badgers, but this effect would only be temporary because the activity would be temporary. Overall, the effect of O&M on American badger would be less than significant.

Sanford's Arrowhead

Sanford's arrowhead is an aquatic emergent herbaceous plant that grows in a variety of shallow freshwater habitats. This species is known to occur in various locations throughout the LAR, but Site 1-1 provides low quality habitat for this species and it was not observed during general surveys. Protocol level surveys are scheduled for spring/ summer 2022. If it is found to occur, Sanford's arrowhead plants could be crushed by construction equipment or trampled by construction personnel, resulting in damage to or mortality of the plants. Ground disturbance for the Proposed Action's bank improvement actions would increase the potential for Sanford's arrowhead plants to be unintentionally buried or removed. This would be a significant impact. Implementation of Mitigation Measure PLANT-1 would reduce this impact to a less-than-significant level, because as part of the final construction design, Project Partners would adjust construction access routes and the footprint of erosion protection activities to ensure the avoidance of known Sanford's arrowhead plants.

O&M activities after construction would involve activities such as mowing, herbicide application, and rodent control. Rodent control and mowing activities would increase the potential for Sanford's arrowhead to be unintentionally trampled, crushed, or ripped up by maintenance workers and equipment. O&M would involve limited vegetation trimming and management to facilitate visual inspections of the levee; this activity would have the same potential for Sanford's arrowhead to accidentally be damaged or killed as under current O&M activities. Overspray from herbicide applications may result in even accidental mortality of non-target plants, including Sanford arrowhead. However, the application of herbicides would be highly localized, and herbicides would not be sprayed near the known Sanford's arrowhead population within the Project Area. Thus, the application of herbicides as part of O&M for the Proposed Action is not anticipated to affect Sanford's arrowhead. The impact of O&M on Sanford's arrowhead would be less than significant.

Bristly Sedge and Woolly Rose-Mallow

Bristly sedge and woolly rose-mallow could occur along the water's edge within Site 1-1. Ground disturbance for the Proposed Action's bank improvement actions would increase the potential for these plants to be unintentionally buried or removed if present. Construction associated with Site 1-1 could result in removal of individuals if present in these areas. This would be a significant impact. Implementation of Mitigation Measure PLANT-1 would reduce this impact to a less-than-significant level, because as part of the final construction design, Project Partners would adjust construction access routes and the footprint of erosion protection activities to ensure the avoidance of these species, if determined to occur within these footprints.

Winter-Run Chinook Salmon

Construction impacts on winter-run Chinook salmon were based on the Proposed Action effects described in Section 3.8.4 (pages 170–173) of the ARCF GRR FEIS/FEIR and long-term impacts were based on SAM analysis as described above in Section 3.6.1.2 Existing Conditions. See Appendix C for details on updated SAM analysis methods and results.

Winter-run Chinook salmon do not spawn in the Project Area,[69] therefore, Project construction activities are not likely to affect winter-run Chinook salmon spawning or spawning habitat. Construction would avoid the primary migration period (December through July) and would be restricted to the channel edge, and the avoidance and minimization measures described below would be implemented. Therefore, no construction-related effects on winter-run Chinook salmon spawning or spawning habitat would occur.

Implementation of the erosion protection measures would result in adverse effects on juvenile and smolt winter-run Chinook salmon, their critical habitat, and essential fish

[69] Moyle, Peter B. Inland Fishes of California - Revised and Expanded. 1st ed. University of California Press, 2002. https://www.ucpress.edu/book/9780520227545/inland-fishes-of-california.

habitat. Construction activities that increase noise, turbidity, and suspended sediment may disrupt feeding or temporarily displace fish from their preferred habitat. Physical damage to or harassment of listed fish species would be low during the construction months. Adults would not sustain any physical damage because of construction as their size, preference for deep water,[70] and more crepuscular migratory behavior[71] would enable them to avoid most temporary, nearshore disturbance that occurs during typical daylight construction hours. Overall, the impact of construction activities on winter-run Chinook salmon would be significant. With implementation of Mitigation Measures WQ-1, FISH-1, FISH-2, and FISH-3 (below), this impact would be reduced to a less-than-significant level. Restricting in-water activities to a work window of July 1 through October 31 and implementing the avoidance and minimization measures described below would minimize, but not avoid, potential construction-related effects on juveniles and smolts.

Instream construction activities may cause mortality and reduced abundance of benthic aquatic macroinvertebrates within the erosion footprint, due to the placement of rock over the existing streambed. These effects to aquatic macroinvertebrates are expected to be long-term as permanent bank armoring alters the natural streambed.[72] The amount of food available for adult and juvenile salmonids in the Action Area is therefore expected to be permanently decreased in the areas where submerged riprap is being placed.

Over the lifetime of the project, winter-run Chinook salmon juvenile habitat is expected to show a long-term positive response to the Proposed Action based on the American River SAM analysis when both instream woody material (IWM) and planted benches are incorporated into with-project conditions.

Although winter and spring values of the WRI increase immediately above baseline conditions after construction for juvenile rearing of Chinook salmon, the values for summer and fall WRI remain below baseline conditions for up 15 years before they increase above baseline conditions, due to the time it takes after planting for vegetation to develop at Site 1-1. For juvenile migration the predicted recovery to baseline conditions is immediate in spring and winter, with recovery in fall taking 8 years. Therefore, although long-term habitat conditions at Site 1-1 for juvenile Chinook salmon are predicted to be substantially better than under baseline conditions, there would be a temporary adverse impact of the Proposed Action on juvenile Chinook salmon (including winter-run Chinook salmon) habitat. This impact would be significant.

Protection measures would generally provide long-term increases in bank shading at Project sites. Short-term impacts on SRA habitat would be reduced to a less-than-significant level with implementation of Mitigation Measures SRA-1, which would provide for the creation of off-site SRA habitat.

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70 Raleigh, R. F., Miller, W. J., & Nelson, P. C. (1986). Habitat suitability index models and instream flow suitability curves: chinook salmon. National Ecology Center.

71 Keefer, M. L., Caudill, C. C., Peery, C. A., & Moser, M. L. (2013). Context-dependent diel behavior of upstream-migrating anadromous fishes. Environmental biology of fishes, 96(6), 691-700.

72 U.S. Fish and Wildlife Service. 2004. Impacts of Riprapping to Aquatic Organisms and River Functioning, Lower Sacramento River, California. Sacramento, California. June 2004.

Spring-Run Chinook Salmon

Construction impacts of the Proposed Action on spring-run Chinook salmon have not changed from those described in Section 3.8.4 (page 173) of the ARCF GRR FEIS/FEIR. Long-term impacts were informed using SAM analysis like the methodology used for winter-run Chinook salmon. See Appendix C for details on updated SAM analysis methods and results.

Adult spring-run Chinook salmon migrate up the Sacramento River from March through September, although most individuals have entered tributary streams by mid-June and would not be affected by construction activities. Similar to winter-run Chinook salmon, spring-run Chinook salmon typically spend up to 1-year rearing in freshwater before migrating to sea. Therefore, the potential for construction-related effects would be like those described above for winter-run Chinook salmon. Construction related impacts would have a significant impact on spring-run Chinook salmon. With implementation of Mitigation Measures WQ-1, FISH-1, FISH-2, and FISH-3 this impact would be reduced to a less-than-significant level, as was described for winter-run Chinook salmon.

The Proposed Action would have a long-term beneficial effect on spring-run Chinook salmon habitat, but adverse impacts from vegetation removal on SRA habitat for juvenile salmon are expected to last for up to 15 years after construction, similar to what was described for winter-run Chinook salmon (see Appendix C). This would be a significant impact. Implementation of Mitigation Measure SRA-1, which would create off-site compensatory SRA habitat in the American River Parkway, would reduce this impact to a less-than-significant level.

Central Valley Fall/Late Fall–Run Chinook Salmon

Construction impacts on fall/late fall–run Chinook salmon have not changed from the Proposed Action effects described in Section 3.8.4 (pages 173–174) of the ARCF GRR FEIS/FEIR. Long-term impacts were informed using SAM analysis similar to the methodology used for other salmonids above. See Appendix C for details on updated SAM analysis methods and results.

Fall/late fall–run Chinook salmon migrate into the Sacramento River and its tributaries from June through December; therefore, construction activities would coincide with most of the migration period. Construction activities that increase noise, turbidity, and suspended sediment may disrupt adult passage through the Project Area and may displace these fish by affecting their preferred habitat and spawning habitat. The Project could represent a long-term loss of a small amount of potential spawning habitat because repairs would require covering bottom substrates with revetment. However, the extent of spawning area that might be affected would be very small. In general, channel areas immediately adjacent to erosion protection sites do not support spawning riffles. Long-term changes on nearshore habitat are expected to have adverse effects on habitat that is important to all life stages of fall/late fall–run Chinook salmon. These impacts on fall/late fall-run Chinook salmon would be significant. With implementation of Mitigation

Measures WQ-1, FISH-1, FISH-2, and FISH-3, this impact would be reduced to a less-than-significant level, as was described for winter-run Chinook salmon.

The Proposed Action would have a long-term beneficial effect on fall/late fall-run Chinook salmon habitat, but temporary adverse impacts from vegetation removal on SRA habitat for juvenile salmon could persist up to 17 years after construction, similar to the effects described for winter-run Chinook salmon (see Appendix C). This would be a significant impact. Implementation of Mitigation Measure SRA-1, which would create off-site compensatory SRA habitat in the American River Parkway, would reduce this effect to a less-than-significant level.

California Central Valley Steelhead

Construction impacts on steelhead have not changed from the Proposed Action effects described in Section 3.8.4 (pages 174–175) of the ARCF GRR FEIS/FEIR. Long-term impacts were informed using SAM analysis similar to the methodology used for other salmonids above See Appendix C for details on updated SAM analysis methods and results.

In the Sacramento River, adult steelhead migrate upstream during most months of the year, beginning in July, peaking in September, and continuing through February or March. Adults use the river channel in the Project Area as a migration pathway to upstream spawning habitat. They may also use deep pools with instream cover as resting and holding habitat. Juveniles and smolts are most likely to be present in the Project Area during their downstream migration to the ocean, which may begin as early as December and peaks from January to May. For purposes of this analysis, rearing juvenile steelhead are assumed to use nearshore and off-channel habitat in the Project Area. The potential for construction-related effects on steelhead juveniles and smolts and their habitat would therefore be similar to that described above for winter-run Chinook salmon. The potential for construction-related effects on steelhead would be like that described above for adult winter-run Chinook salmon. These impacts on steelhead would be significant. With implementation of Mitigation Measures WQ-1, FISH-1, FISH-2, and FISH-3 this impact would be reduced to a less-than-significant level.

Over the lifetime of the Project, California Central Valley steelhead juvenile habitat is expected to show a long-term positive response to the Proposed Action, based on the SAM analysis when both instream woody material (IWM) and planted benches are incorporated into with-project conditions (Appendix C). Juvenile steelhead migration showed a deficit in WRI values for Summer which lasts 7 years (Appendix C).

Although winter and spring values of the WRI increase immediately above baseline after construction for juvenile rearing of steelhead, the values for summer and fall remain below baseline for up to 12 years before they increase above baseline conditions, due to the time it takes after planting for vegetation to develop at Site 1-1. Therefore, although long-term habitat conditions at Site 1-1 for juvenile steelhead are predicted to be substantially better than baseline conditions, the Proposed Action would cause a temporary adverse impact on juvenile steelhead habitat. This impact is considered significant.

Short-term impacts on SRA habitat would be reduced to a less-than-significant level with implementation of Mitigation Measures SRA-1, which would provide for the creation of off-site SRA habitat.

Potential spawning habitat is present in the American River in the ARCF GRR Project Area. Steelhead spawn in late winter and late spring, outside of the July 1 through October 31 work window. Therefore, Project construction is unlikely to affect steelhead spawning or steelhead spawning habitat.

Green Sturgeon

Green sturgeon critical habitat begins downstream of the Project Area, below the State Route 160 bridge, but no occurrences have been documented in the American River. Thus, green sturgeon are unlikely to be present during construction activities and no direct effects on sturgeon from construction are anticipated. Any downstream indirect effects are also unlikely because critical habitat ends approximately 2 miles downstream of the Project Area.

ARCF GRR FEIS/FEIR Mitigation Measures

The ARCF GRR FEIS/FEIR mitigation measures (pages 180-195) listed below are incorporated into the Proposed Action and revised or added to as described in the bullets below. These reflect the revised Project Area and current agency guidance. Implementing these mitigation measures would reduce impacts on special-status species to a less-than-significant level. Modifications of the ARCF GRR FEIS/FEIR mitigation measures are as follows.

- Mitigation for impacts on VELB was updated from the 1999. *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*[73] to reflect the new 2017 *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* USFWS guidelines for impacts to VELB.[74]
- Nesting seasons and buffer distances for nesting birds were added.
- A rodent abatement buffer of 100 feet around nesting burrowing owls was added.
- Mitigation for PLANT-1 was updated to include botanical surveys in areas where previous surveys were not conducted.
- The in-water work window to avoid impacts on listed fish species was changed from the period of August 1 to November 30 to the period of July 1 to October 31.
- Additional Mitigation Measures are added for BATS-1, BADGER-1, and BEE-1.

[73] U.S. Fish and Wildlife Service. 1999. *Conservation Guidelines for the Valley Elderberry Longhorn Beetle.* Sacramento, California. 15 pp.

[74] U.S. Fish and Wildlife Service. 2017. *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (*Desmocerus californicus dimorphus*). U.S. Fish and Wildlife Service; Sacramento, California. 28 pp.

Mitigation Measure VELB-1: Implement Current USFWS Avoidance, Minimization, and Compensation Measures for Valley Elderberry Longhorn Beetle. Project Partners would implement the following measures in accordance with the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle*,[75] to reduce effects on valley elderberry longhorn beetle:

Avoidance and Minimization Measures

To reduce direct and indirect impacts on shrubs that would not be transplanted and that occur within 50 meters (165 feet) of the Project, the following measures would be implemented:

Fencing. All areas to be avoided during construction activities would be fenced and/or flagged as close to construction limits as feasible.

Avoidance area. Activities that may damage or kill an elderberry shrub (e.g., trenching, paving) may need an avoidance area of at least 6 meters (20 feet) from the dripline, depending on the type of activity.

Worker education. A qualified biologist would provide training for all contractors, work crews, and any on-site personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for non-compliance.

Construction monitoring. A qualified biologist would monitor the initial groundbreaking activities, vegetation removal, installation of protective fencing, and would be present during all transplanting and trimming activities. Weekly site visits would also be conducted to ensure all mitigation measures are being implemented and maintained. Additional monitoring may be required per the USFWS BO.

Timing. As much as feasible, all activities that could occur within 50 meters (165 feet) of an elderberry shrub would be conducted outside of the flight season of the VELB (March–July).

Trimming. Trimming may remove or destroy VELB eggs and/or larvae and may reduce the health and vigor of the elderberry shrub. To avoid and minimize adverse effects on VELB when trimming, trimming would occur between November and February and would avoid the removal of any branches or stems that are 1 inch or larger in diameter unless they were approved and compensated for by following the USFWS requirements.

Chemical Usage. Herbicides would not be used within the dripline of the shrub. Insecticides would not be used within 30 meters (98 feet) of an elderberry shrub.

75 U.S. Fish and Wildlife Service. 2017. *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (*Desmocerus californicus dimorphus)*. Sacramento, California. 28 pp.

All chemicals would be applied using a backpack sprayer or similar direct application method.

Mowing. Mechanical weed removal within the dripline of the shrub would be limited to the season when adults are not active (August–February) and would avoid damaging the elderberry shrub.

Erosion Control and Revegetation. Erosion control would be implemented, and the affected area would be revegetated with appropriate native plants.

Dust Control. Dust would be controlled by reducing speed limits to 10 miles per hour, regularly watering roads, and wetting down soil before removal and during placement.

Transplanting

Affected elderberry shrubs with one or more stems measuring 1.0 inch or greater in diameter at ground level that could feasibly be transplanted in accordance with the 2017 Framework must be transplanted to a mitigation site as approved by USFWS. Elderberry compensation would be planted in the Parkway, but outside of the Project Area (off-site) because of construction timing. Project Partners would find areas in the Lower American River Parkway to either expand existing compensation areas or provide connectivity between areas of conserved VELB habitat. Sites within the Lower American River Parkway would be coordinated with the Sacramento County Department of Regional Parks and USFWS during the design phase of the Project. Sites would be designed and developed in accordance with the criteria listed below before any effects on VELB habitat.

For impacts on VELB habitat at Site 1-1 (1.71 acres), the Project Partners would mitigate at a 3:1 ratio and create a total of 5.13 acres of VELB and riparian habitat off-site. The elderberry shrubs that would be affected would be transplanted to the Paradise Bend/Glenn Hall, Rio Americano East and West Mitigation Sites, and the Rossmoor East Site. These sites would be used for the transplantation and compensation for impacts on elderberry shrubs as described in the *Compensatory Mitigation* section below. The mitigation site acreage represents the acreage of woody vegetation planted for mitigation and does not include existing native woody vegetation within the mitigation sites boundaries, nor native grass plantings that form a 15-foot wide buffer around most of the perimeter of the woody plantings.

- **Monitor.** A qualified biologist would be on-site for the duration of transplanting activities to assure compliance with avoidance and minimization measures and other conservation measures (as listed above).
- **Exit Holes.** Exit-hole surveys would be completed immediately before transplanting. The number of exit holes found, the GPS location of the plant to

be relocated, and the GPS location where the plant is transplanted would be reported to USFWS and to the CNDDB.

- **Timing.** Elderberry shrubs would be transplanted when the shrubs are dormant (November through the first 2 weeks in February) and after they have lost their leaves. Transplanting during the non-growing season would reduce shock to the shrub and increase transplantation success.
- **Transplanting Procedure.** Transplanting would follow the most current version of the ANSI A300 (Part 6) guidelines for transplanting shrubs (http://www.tcia.org/).
- **Trimming Procedure.** Trimming would occur between November and February and should minimize the removal of branches or stems that exceed 1 inch in diameter.

Compensatory Mitigation

A Compensatory Mitigation Proposal would be prepared detailing the management of on-site and off-site lands. This plan would meet the standards for long-term management and protection of the site as outlined in USFWS's 2017 *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* and the Habitat Mitigation, Monitoring, and Adaptive Management Plan for the ARCF GRR (December 2015). The Compensatory Mitigation Proposal would be prepared and submitted by USACE to USFWS for approval. It would include habitat goals that would be suitable for the western yellow-billed cuckoo and VELB, and would benefit Swainson's hawk, with specific information regarding site selection and development, a planting plan that includes appropriate buffers, success standards, monitoring specifications, and a reporting schedule with data as outlined in Section 6.1 and Appendix C of the 2017 Framework.

Site Selection and Development. Site selection would use a landscape-level approach that would benefit not only the VELB and western yellow-billed cuckoo, but all other species that rely on riparian habitat in the Parkway. Mitigation sites would focus on restoring riparian areas adjacent to the American River that would provide connectivity for VELB populations as described in the 2017 Framework.

Planting Plan. A planting plan would be prepared that would consider site specifics that would influence the success of the elderberry shrub and associated plantings and create a healthy riparian system. The plan would establish a diverse natural community with a complex vegetation structure that would support species present in the Project Area that rely on riparian habitat. The plan would be designed to achieve the following goals described in the 2017 Framework:

(1) Maximize the number of stems between 2 centimeters (0.8 inches) and 12 centimeters (4.7 inches).

(2) Minimize competition for sunlight and water. Native associates should be planted at a ratio of one native associate for every three elderberry plants.

(3) Achieve an average elderberry stem density of 240 stems per acre.

Buffers. An appropriate buffer would be established between mitigation lands and adjacent lands in accordance with the 2017 Framework.

Success Standards. Performance standards including survival rates, stem densities, and recruitment as outlined below and detailed in the 2017 Framework would be established and met to meet compensatory mitigation goals:

(1) A minimum of 60 percent of the initial elderberry and native associate plantings must survive over the first 5 years after the site is established. As much as feasible, shrubs should be well distributed throughout the site; however, in some instances, underlying geologic or hydrologic issues might preclude elderberry establishment over some portion of the site. If significant die-back occurs within the first 3 years, replanting may be used to meet the 60 percent survival criterion. However, replanting efforts should be concentrated in areas containing surviving elderberry plants. In some instances, overplanting may be used to offset the selection of a less suitable site.

(2) After 5 years, the site must show signs of recruitment. A successful site should have evidence of new growth on existing plantings as well as natural recruitment of elderberry shrubs. New growth is characterized as stems less than 3 centimeters (1.2 inches) in diameter. If no signs of recruitment are observed, the agency or applicant should discuss possible remedies with USFWS.

(3) The Performance Standards outlined in Appendix C of the 2017 Framework, Table 2 for VELB mitigation would be complied with for monitoring years 2 through 7. If performance standards are not met, additional years would be required to meet the performance standards and monitoring years would start over.

Monitoring. The population of VELB, the general condition of the mitigation site, and the condition of the elderberry and associated native plantings in the mitigation site should be monitored at appropriate intervals. In any survey year, a minimum of two site visits between February 14 and June 30 of each year must be conducted by a USFWS-approved biologist. As indicated in the 2017 Framework, surveys must include:

(1) A search for VELB exit holes in elderberry stems, noting the precise locations and estimated ages of the exit holes. The location of shrubs with exit holes should be mapped with a GPS. Because adult VELB are rarely encountered, targeted surveys for adults are not required. However, surveyors should record all adult VELB seen. Record photographs should be taken for all observations of adult VELB and their location mapped with a GPS. All exit-hole or adult VELB observations should be reported to the CNDDB.

(2) An evaluation of the success standards outlined above.

(3) An evaluation of the adequacy of the site protection (fencing, signage, etc.) and weed control efforts on the mitigation site. Dense weeds and grasses such as Bermuda grass (*Cynodon dactylon*) are known to depress elderberry recruitment and their presence should be controlled to the greatest extent practicable.

(4) An assessment of any real or potential threats to VELB and its host plant, such as erosion, fire, excessive grazing, off-road vehicle use, vandalism, and excessive weed growth.

(5) A minimum of 10 permanent photographic monitoring locations, established to document conditions present at the mitigation site. Photographs should be included in each report.

Reports. In accordance with the 2017 Framework, yearly survey reports would be submitted to USFWS within 6 months of the final survey each year for monitoring years 2–7 (2017 Framework, Appendix C).

Mitigation Measure BIRD-1: Avoid and Minimize Effects on Nesting Birds. To avoid and minimize effects on nesting birds, The Project Partners would implement the following measures:

- Before ground disturbance, all construction personnel would participate in a USFWS-approved worker environmental awareness program. A qualified biologist would inform all construction personnel about the life history of Swainson's hawk, western yellow-billed cuckoo, western burrowing owl, bank swallow, and other relevant species, as well as the importance of nest sites and foraging habitat.

- Where feasible, construction and maintenance activities that have the potential to affect special-status nesting birds and common nesting birds would occur at times of the year when adverse effects on those species would be avoided. If activities are conducted outside the nesting seasons specified in **Table 3-7**, no additional measures are required to mitigate adverse effects on nesting birds.

- A breeding season survey for nesting birds would be conducted by a qualified biologist for all trees and shrubs to be removed or disturbed that are located within 500 feet of construction activities, including grading. Swainson's hawk surveys would be completed during at least two of the following survey periods: January 1 to March 20, March 20 to April 5, April 5 to April 20, and June 10 to July 30. An area with a radius of 0.5 mile from construction activities would be surveyed for Swainson's hawk nests. No fewer than three surveys would be completed in at least two survey periods, and at least one of these surveys would occur immediately before project initiation.[76] Western burrowing owl surveys would follow suggested guidelines set forth in

[76] Swainson's Hawk Technical Advisory Committee. 2000. *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*. May 31, 2000.

CDFW's *Staff Report on Burrowing Owl Mitigation*[77] such as conducting three or more daytime survey visits at least 3 weeks apart during the peak of breeding season from April 15 to July 15. Other migratory bird nest surveys could be conducted concurrent with Swainson's hawk surveys, with at least one survey to be conducted no more than 48 hours from the initiation of project activities to confirm the absence of nesting. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removal or pruning of trees and shrubs, could commence without any further mitigation. If at any time during the nesting season construction stops for a period of 2 weeks or longer, pre-construction surveys would be conducted before construction resumes.

TABLE 3-7
NESTING SEASON FOR SPECIAL-STATUS AND COMMON NESTING BIRDS

Species	Nesting Season
White-tailed kite	February 1 to September 30
Bald eagle	January 1 to August 31
Northern harrier	March 1 to August 31
Swainson's hawk	March 1 to September 15
Western yellow-billed cuckoo	June 1 to August 15
Burrowing owl	Year-round: February 1 to August 31 (nesting); September 1 to January 31 (wintering)
Bank swallow	April 1 to August 31
Purple martin	February 1 to August 31
Common nesting birds (raptors, passerines, herons, and egrets)	February 1 to August 31

- If nesting birds have been identified within or adjacent to the construction footprint, The Project Partners would establish avoidance buffers as indicated in **Table 3-8**. Reduced buffers may be implemented if recommended by the monitoring biologist and approved by CDFW. Buffers would be marked in the field by a qualified biologist using temporary fencing, high-visibility flagging, or other means that are equally effective in clearly delineating the buffers. Specific buffer distances for burrowing owl, which vary depending on time of year and level of disturbance, are presented in **Table 3-9** in accordance with CDFW's *Staff Report on Burrowing Owl Mitigation*.[78] Reduced buffers for burrowing owl may be implemented if recommended by the monitoring biologist, due to the nature of the activity, and if approved by CDFW. For example, typical burrow avoidance distances during active construction are 160 feet during the non-breeding season, and 250-feet during the breeding season. Any needed burrowing owl exclusion and burrow closure would occur

[77] California Department of Fish and Game. 2012. *Staff Report on Burrowing Owl Mitigation*. March 7, 2012.
[78] California Department of Fish and Game. 2012. *Staff Report on Burrowing Owl Mitigation*. March 7, 2012.

during the non-breeding season only following the methodology in the CDFW *Staff Report.*

TABLE 3-8
REQUIRED BUFFER DISTANCES FOR NESTING BIRDS*

Resource	Buffer Distance
White-tailed kite	0.5 mile
Bald eagle	0.5 mile
Swainson's hawk	0.25 mile (urban); 0.5 mile (rural or during use of heavy equipment)
Western yellow-billed cuckoo	500 feet
Bank swallow	300 feet
Burrowing Owl	160 feet (non-breeding season) and 250-feet (breeding season)
Common nesting birds	100 feet (passerines); 300 feet (raptors); 200 feet (heron or egret rookeries)

NOTE: If maintaining these buffers is not feasible they can be reduced in coordination with CDFW and/or USFWS.

TABLE 3-9
RECOMMENDED RESTRICTED ACTIVITY DATES AND SETBACK DISTANCES BY LEVEL OF DISTURBANCE FOR BURROWING OWLS

Time of Year	Distance of Disturbance (feet) from Occupied Burrows Low Disturbance	Distance of Disturbance (feet) from Occupied Burrows Medium Disturbance	Distance of Disturbance (feet) from Occupied Burrows High Disturbance
April 1 to August 15	600	1,500	1,500
August 16 to October 15	600	600	1,500
October 16 to March 31	150	300	1,500

NOTES:
Low = Presence of maintenance staff on foot or in vehicles conducting work with light equipment (maintenance trucks, all-terrain vehicles).
Medium = Heavy equipment use with moderate noise levels (approximately 50–75 A-weighted decibels [dBA]).
High = Heavy equipment with high noise levels (more than 75 dBA).

SOURCE: California Department of Fish and Game. 2012. *Staff Report on Burrowing Owl Mitigation*. March 7, 2012.

- Tree and shrub removal and work in other areas scheduled for vegetation clearing, grading, or other construction activities would not be conducted during the nesting season (generally February 15 through September 30, depending on the species and environmental conditions for any given year) where feasible.

- During rodent abatement efforts, no fumigation, use of treated bait, or other means of poisoning nuisance animals would occur within 100 feet of areas

where burrowing owls are known to occur (e.g., burrows with observed nesting owls).

Mitigation Measure TURTLE-1: Implement Measures to Avoid and Minimize Effects on Western Pond Turtle. The Project Partners would implement the following measures to avoid and minimize effects on western pond turtle:

- A qualified biologist would conduct a pre-construction survey within 7 days before the start of Project activities. If no western pond turtles are observed, the Project Partners would document that information for the file, and no additional measures would be required, except as described below for dewatering activities.
- Should any western pond turtles be detected on land during the pre-construction survey, the qualified biologist would identify the location using GPS coordinates. With prior CDFW approval, a qualified biologist may relocate any western pond turtles found on land or in aquatic habitat within the construction footprint to suitable aquatic habitat at least 200 feet away from the construction footprint.
- If western pond turtles are observed on land within the construction footprint during Project activities, The Project Partners would stop work within approximately 200 feet of the turtle, and a qualified biologist would be notified immediately. If possible, the turtle would be allowed to leave on its own and the qualified biologist would remain in the area until the biologist deems his or her presence no longer necessary to ensure that the turtle is not harmed. Alternatively, with prior CDFW approval, the qualified biologist may capture and relocate the turtle unharmed to suitable habitat at least 200 feet outside the construction footprint. If a western pond turtle nest is unintentionally uncovered during Project activities, work would stop in the vicinity of the nest and USACE and/or CVFPB would contact CDFW to determine the appropriate next steps.

Mitigation Measure PLANT-1: Implement Measures to Avoid and Minimize Effects on Special-Status Plants. To avoid and minimize effects on these known and potentially occurring plants, the Project Partners would implement the following measures:

- Prior to construction, botanical inventories shall be conducted during the identifiable periods for Sanford's arrowhead (blooms May-October), bristly-sedge (blooms May-September), and woolly rose-mallow (blooms June-September) within Site 1-1.
- Sanford's arrowhead, bristly-sedge, and woolly rose-mallow plants identified during rare-plant surveys would be marked or fenced off as an avoided area during construction if they occur outside of the construction footprint. A qualified biologist would establish a buffer of at least 25 feet around the

plants. If a buffer of 25 feet is not possible, the next maximum possible distance would be fenced off as a buffer.

- If Sanford's arrowhead, bristly-sedge, or woolly-rose mallow are located within the construction footprint and cannot be avoided during construction, the botanist shall establish distribution of the individuals in the population. A detailed relocation and mitigation/conservation plan that includes long-term strategies for the conservation of the species should be developed in coordination with CDFW upon confirming the presence of this species in the Project Area.

- If operations and maintenance activities are to occur near plants, a qualified biologist would mark their location with pin flags. The qualified biologist would instruct all personnel conducting the O&M activities regarding the location, appearance, and extent of these plants and the importance of avoiding impacts on this species.

- Herbicides would not be used within 3 meters (10 feet) of a known Sanford's arrowhead plant and a potentially occurring Sanford's arrowhead, bristly-sedge, or woolly rose-mallow plant. All chemicals would be applied using a backpack sprayer or similar direct application method.

Mitigation Measure FISH-3: Implement Measures to Avoid and Minimize Effects on Listed Fish Species. To avoid and minimize effects on listed fish species, the following measures would be implemented: In-water construction activities (e.g., placement of rock revetment) would be limited to the work window of July 1 through October 31. If the Project Partners need to work outside of this window, it would consult with USFWS and NMFS.

- Erosion control measures (BMPs) would be implemented, including a Storm Water Pollution Prevention Plan and Water Pollution Control Plan, to minimize the entry of soil or sediment into the American River. BMPs would be installed, monitored for effectiveness, and maintained throughout construction operations to minimize effects on Federally listed fish and their designated critical habitat. Maintenance would include daily inspections of all heavy equipment for leaks.

- The Project Partners would participate in an existing Interagency Working Group or work with other agencies to participate in a new Bank Protection Working Group to coordinate stakeholder input into future flood risk reduction actions associated with the ARCF 2016 Project, American River Contract 3A.

- The Project Partners would coordinate with NMFS during pre-construction engineering and design as future flood risk reduction actions are designed to ensure that conservation measures are incorporated to the extent practicable and feasible and projects are designed to maximize ecological benefits.

- The Project Partners would include a Riparian Corridor Improvement Plan as part of the Project, with the overall goal of maximizing the ecological function and value of the existing levee system in the Sacramento metropolitan area.
- The Project Partners would implement an ARCF GRR Habitat Mitigation Monitoring and Adaptive Management Plan (HMMAMP) with an overall goal of ensuring that the conservation measures achieve a high level of ecological function and value. In addition, per the NMFS 2021 BO, a site specific long term management plan (LTMP) and an overarching habitat management plan (HMP) that outlines O&M requirements will be prepared as a complimentary supplemental document to the HMMAMP (See FISH-4 below for additional details). The HMMAMP would include:
    - Specific goals and objectives and a clear strategy for maintaining all project conservation elements for the life of the Project.
    - Measures to be monitored by the Project Partners for 10 years after construction. The Project Partners would update its O&M manual to ensure that the HMMAMP is adopted by the local sponsor to ensure that the goals and objectives of the conservation measures are met for the life of the Project.
    - Specific goals and objectives and a clear strategy for achieving full compensation for all Project-related impacts on listed fish species.
- The Project Partners would continue to coordinate with NMFS during all phases of construction, implementation, and monitoring by hosting annual meetings and issuing annual reports throughout the construction period as described in the HMMAMP.
- The Project Partners would seek to avoid and minimize adverse construction effects on listed species and their critical habitat to the extent feasible and would implement on-site and off-site compensation actions as necessary.
- For identified designated critical habitat, where feasible all efforts will be made to compensate for impacts as close as possible to the place of occurrence. The SAM has been used throughout the Sacramento River basin and Delta flood control system to inform impacts to designated critical habitat, SRA, and instream components. Estimates of suitable habitat will be verified in the field by the Project Partners prior to initiating proposed actions to determine the extent of suitable habitat present NMFS. The Project Partners would develop and implement a compensatory mitigation accounting plan to ensure the tracking of compensatory measures associated with implementation of the Proposed Action. The Project Partners would continue to coordinate with NMFS after construction during the monitoring periods for habitat establishment via written monitoring reports, electronically, and through site visits as requested. The Project Partners would minimize the removal of existing riparian vegetation and IWM to the maximum extent practicable.

Where appropriate, removed IWM would be anchored back into place, or if not feasible, new IWM would be anchored in place.

- The Project Partners would ensure that the planting of native vegetation would occur as described in the HMMAMP. All plantings must be provided with the appropriate amount of water to ensure successful establishment.
- The Project Partners would provide a copy of the BO, or similar documentation, to the prime contractor, making the prime contractor responsible for implementing all requirements and obligations included in the documents and for educating and informing all other contractors involved in the Project as to the requirements of the BO.
- A NMFS-approved Worker Environmental Awareness Training Program for construction personnel would be conducted by the NMFS-approved biologist for all construction workers before the start of construction activities. Written documentation of the training would be submitted to NMFS within 30 days of the completion of training.
- The Project Partners would consider installing IWM of at least 40 percent shoreline coverage at all seasonal water surface elevations in coordination with the Interagency Working Group or the Bank Protection Working Group. The purpose is to maximize the refugia and rearing habitats for juvenile fish.
- The Project Partners would consider varying the elevation of planting benches and IWM to accommodate a wide variety of water years and ensure there is ample shoreline habitat in different flow scenarios.
- The Project Partners would monitor turbidity during in-water work activities to ensure levels stay below the allowable thresholds (turbidity measured 1,000 feet downstream of the extent of the site is not to exceed double the upstream of site turbidity measurement).
- Screen any water pump intakes, as specified by the 2011 NMFS screening specifications.[79] Water pumps would maintain an approach velocity of 0.2 feet per second or less. Screen openings would be for a perforated plate: circular or square openings shall not exceed 3/32 inch (2.38 millimeters [mm]), measured on a side, and slotted or rectangular screen face openings must not exceed 1.75 mm (approximately 1/16 inch) in the narrow direction. Screen material shall provide a minimum of 27 percent open area.

Mitigation Measure FISH-4: Implement Measures to Avoid and Minimize Effects on Listed Fish Species. In 2015, NMFS issued a Biological Opinion (BO) for the ARCF GRR consultation for levee improvements and bank protection, including bank protection along the lower American River. In 2020, the *NMFS Biological Assessment for the American River Common Features*

[79] National Marine Fisheries Service. 2011. Anadromous Salmonid Passage Facility Design. NMFS, Northwest Region, Portland, OR. Available: https://www.dfw.state.or.us/fish/passage/docs/fish_passage_design_criteria.pdf.

WRDA 2016 Project (2020 NMFS BA) was prepared to reinitiate consultation with NMFS to provide new information related to site-specific details for the Proposed Action and in 2021 a new BO was issued.[80] The 2021 NMFS BO evaluated impacts to Sacramento River winter-run and Central Valley spring-run Chinook salmon, California Central Valley steelhead, and green sturgeon, as well as their critical habitat. The BO evaluated potential impacts based on rough estimates and preliminary designs for the proposed Project. To avoid and minimize effects on listed fish species, the following measures from the 2021 NMFS BO would be implemented:

- The Project Partners would provide NMFS with a site-specific project description prior to advertising for construction contracts of any sites. The project description would include a design at or beyond the 65% level, anticipated impacts, and proposed mitigation ratios for the site. NMFS would provide written approval that the site is consistent with this opinion prior to construction, NMFS would respond within 14 days of receiving site-specific documents.

- The Project Partners would provide to NMFS (at the address below) a vegetation monitoring report at years 1, 2, 3, 5, and 8 post-construction no later than December 31st of each reporting cycle. This report would provide information as to the success of the revegetation program and whether the conservation goals are being met at each site. If goals are not being met, then the report would indicate what actions are being implemented to meet those goals.

- The Project Partners would submit a report to NMFS of any incidental take that occurs as part of the Project. This report would be submitted no later than December 31 of each reporting cycle.

- The Project Partners would ensure that the NMFS Central Valley Office is involved with the discussions, development, and tracking of the SAM model development.

- The Project Partners would provide NMFS a detailed O&M plan for all aspects of the proposed action, to ensure all sites are properly managed and the Design Deviation allowing vegetation to remain is followed. This plan would be incorporated into the O&M manual.

- The Project Partners would provide NMFS a LTMP outlining the maintenance of all on-site and off-site mitigation. The plan would include performance goals, monitoring plans, replanting plans, and an adaptive management plan for how mitigation will be addressed if the mitigation site fails.

[80] National Marine Fisheries Service. 2021. Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the American River Common Features General Reevaluation Report Reinitiation. May 12, 2021.

Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat. The Project Partners would implement the following avoidance, minimization, and compensation measures:

- For identified designated critical habitat of listed fish species, where feasible, all efforts would be made to compensate for impacts where they have occurred, or elsewhere in the American River Parkway. Impacts on designated critical habitat, SRA habitat, and instream components combined and the compensation value of replacement habitat would be informed by a qualitative assessment of habitat value from the SAM model used throughout the Sacramento River basin and Sacramento–San Joaquin Delta flood control system. Amount of mitigation would be assessed using the slope-area method combined with the qualitative assessment.

- The Project Partners would incorporate compensation for SRA habitat losses by constructing off-site compensation sites, such as Arden Pond and others and if needed, purchasing additional credits at a NMFS-approved conservation bank, where appropriate, or by implementing a combination of the two. The Project Partners would compensate for lost habitat using NMFS-approved mitigation actions as approved in the 2021 NMFS BO. Off-site mitigation in the Lower American River would benefit fall-run Chinook, late fall-run Chinook and steelhead. Riparian plantings will be installed onsite on planting benches where feasible in NMFS approved mitigation sites. If the Project Partners find that onsite and offsite permittee responsible mitigation and mitigation bank opportunities have been exhausted, they will approach the resource agencies regarding the potential use of in-lieu fees for remaining mitigation needs.

- Compensation sites would be monitored, and vegetation would be replaced as necessary based on performance standards in the ARCF GRR HMMAMP and according to the conditions in the NMFS 2021 BO.

Summary

The mitigation measures in the ARCF GRR FEIS/FEIR, as modified above, would reduce the impacts on special-status species addressed in that document to a less-than-significant level. The ARCF GRR FEIS/FEIR did not consider impacts on special-status bats, American badger, or the Crotch bumble bee and, therefore, there would be a residual significant impact. Implementation of the following new Mitigation Measures BATS-1, BADGER-1, and BEE-1 would reduce impacts from the Proposed Action on special-status bats, American badger, and the Crotch bumble bee, respectively, to a less-than-significant level.

Additional Mitigation Measures

Implementation of the following additional Mitigation Measures BATS-1 and BADGER-1 not provided for in the ARCF GRR FEIS/FEIR would reduce impacts on special-status bats and American badger, respectively, to a less-than-significant level.

Mitigation Measure BATS-1: Implement Measures to Protect Maternity Roosts of Special-Status Bats. The ARCF GRR FEIS/FEIR does not identify a significant impact associated with special-status bats. Therefore, the following is a new mitigation measure. The Project Partners would implement the following measures to avoid and minimize effects on special-status bats, including pallid bat and western red bat:

- When possible, removal of trees identified as providing suitable roosting habitat should be conducted during seasonal periods of bat activity, including:
    - Between March 1 and April 15, and after evening temperatures rise above 45 degrees Fahrenheit and/or no more than ½ inch of rainfall within 24 hours occurs; or
    - Between September 1 and about October 15, and before evening temperatures fall below 45 degrees Fahrenheit and/or more than ½ inch of rainfall within 24 hours occurs.
- If removal of trees must occur during the bat pupping season (typically April-July), within 30 days of tree removal activities, all trees to be removed shall be surveyed by a qualified biologist for the presence of features that may function as special status bat maternity roosting habitat. Trees that do not contain potential special status maternity roosting habitat may be removed. For trees that contain suitable special status bat maternity roosting habitat, surveys for active maternity roosts shall be conducted by a qualified biologist in trees designated for removal. The surveys shall be conducted from dusk until dark.
- If a special-status bat maternity roost is located, appropriate buffers around the roost sites shall be determined by a qualified biologist and implemented to avoid destruction or abandonment of the roost resulting from tree removal or other Project activities. The size of the buffer shall depend on the species, roost location, and specific construction activities to be performed in the vicinity. High-visibility construction fencing would be installed around the buffer and would remain in place until the tree is no longer occupied by bats. No Project activity shall commence within the buffer areas until the end of the pupping season (September 1) or until a qualified biologist confirms the maternity roost is no longer active. If construction activities must occur within the avoidance buffer, then the activities would be monitored by a qualified biologist either continuously or periodically during work, as determined by the qualified biologist. The qualified biologist would be empowered to stop activities that, in the biologist's opinion, threaten to cause unanticipated and/or unpermitted adverse effects on special-status bats. If construction activities are stopped, the biological monitor would inform the Project Partners, and CDFW would be consulted to determine appropriate measures to minimize adverse effects.

- All trees designated for removal would be surveyed by a qualified biologist to identify features that provide habitat for roosting bats., such as cracks, crevices, or bark fissures for trees containing suitable bat roosting habitat that are planned for removal or trimming (irrespective of the time of year). Live trees that are indicated to contain roosting habitat trees should be removed in a two-phase removal system conducted over two consecutive days. The first day, under supervision of the biological monitor, limbs and branches would be removed. Removal activities on the first day should avoid limbs with bat habitat features for roosting bats and remove only branches or limbs without those features. On the second day, the entire tree would be removed and gently lowered to the ground. Tree material removed on the second day should be left undisturbed for the next 48-hours, as feasible. If it is not feasible to remove a tree using the two-phased approach, limbs containing habitat features should be removed and left undisturbed near the felled tree for 48-hours. A qualified biologist would monitor removal of these trees. If tree trimming results in the removal of vegetation that contains potential bat habitat, vegetation should be gently lowered to the ground and left near the tree for 48-hours prior to removal, as feasible.

- A qualified biologist would conduct a pre-construction emergence survey for special-status bats within 14 days before the start of work within 250 feet of the railroad and Interstate 80 Bridges. The survey would be conducted 1 hour before dusk to 1 hour after dusk to identify whether special-status bats are occupying the bridges as day roosts. If special-status bats are found roosting beneath any of these bridges and work would occur within 250 feet of the roost, a qualified biologist will monitor the bats and establish appropriate buffers if needed. If maternity roosts are found, they would be avoided by at least 250 feet until the offspring have fledged. If avoidance is not feasible, additional mitigation would be developed in consultation with CDFW.

Mitigation Measure BADGER-1: Implement Measures to Avoid and Minimize Effects on American Badger. The ARCF GRR FEIS/FEIR did not identify a significant impact on American badger. Therefore, the following is a new mitigation measure. The Project Partners would implement the following measures to avoid and minimize effects on American badger.

- The Project Partners would conduct pre-construction clearance surveys for American badgers. These surveys would be conducted within 14 days of the start of any ground-disturbing activity. If no potential American badger dens are present, no further mitigation is necessary.

- If a potential American badger den is discovered but deemed inactive, the qualified biologist would excavate the den during the initial clearance survey to prevent badgers from reoccupying the den during the construction period.

- If found to be present, occupied badger dens would be flagged and ground-disturbing activities would be avoided within 50 feet of an occupied den.

Maternity dens would be avoided during pup-rearing season (February 15 through July 1) and a minimum 200-foot buffer would be established.

- If avoidance of a non-maternity den is not feasible, badgers would be relocated by carefully evacuating the burrow (either by hand or using mechanized equipment, under the direct supervision of a qualified biologist) before or after the rearing season (February 15 through July 1). Any relocation of badgers would occur only after consultation with CDFW.

Mitigation Measure BEE-1: Implement Measures to Avoid and Minimize Effects on Crotch Bumble Bee. To avoid and minimize effects on Crotch bumble bee, the Project Partners would implement the following measure:

- Before construction activities, a qualified biologist would conduct a pre-construction survey, during the flight period for worker and male bees late March through September, within the construction disturbance area for active Crotch bumble bee nests. If an active bumble bee nest is located, recommendations for avoiding or minimizing disturbance of the colony would be developed (e.g., establishing a buffer surrounding entry/exits and avoiding direct disturbance). During rodent abatement efforts, no fumigation, use of treated bait, or other means of poisoning nuisance animals would occur within 100 feet of areas where Crotch bumble bees are known to occur (e.g., burrows with observed nesting bees).

3.7 Cultural Resources

3.7.1 Environmental Setting

3.7.1.1 Regulatory Setting

The regulatory setting in the ARCF GRR FEIS/FEIR (page 195) is generally applicable to the analysis in this Supplemental EIR and is not repeated here.

3.7.1.2 Existing Conditions

The area within which cultural resources are identified and within which potential effects to historic properties are analyzed is called the Area of Potential Effects (APE). The APE for the Proposed Action includes the project footprint (the area where any ground-disturbance would occur), such as bank excavation, riprap placement, and staging areas. These areas are described in detail in Chapter 2, *Alternatives*. The APE includes the area within which built-environment resources could be affected physically, including through vibration. No permanent substantial visual or auditory changes would occur as a result of implementation of the Proposed Action; therefore, no area of indirect effect (the area in which changes in the visual or auditory setting may occur) has been identified. The vertical extent of the project APE is variable but would have a maximum depth of up to approximately 18 feet below ground surface for bank excavation and placement of buried rock.

The APE for the Proposed Action may contain Native American human interments and artifacts of past human activity ranging from Native American sites to flood control structures. USACE has consulted with the State Historic Preservation Officer (SHPO) and other parties regarding the APE and executed a Programmatic Agreement (PA) to guide compliance with Section 106 of the National Historic Preservation Act (NHPA). USACE uses effects determinations arrived at through Section 106 compliance to assess effects to cultural resources under NEPA and to mitigate for adverse effects under both laws.

The PA, titled *Programmatic Agreement Among the U.S. Army Corps of Engineers and the California State Historic Preservation Officer Regarding the American River Common Features Project, Sacramento and Yolo Counties, California*, and executed on September 10, 2015, establishes the process USACE will follow to comply with Section 106 of the NHPA, taking into consideration the views of the signatory and concurring parties and interested Native American Tribes. The PA stipulates time frames and document review procedures; delineation of project APEs; development of a Historic Properties Management Plan (HPMP) to guide identification, evaluation, and findings of effect; Historic Property Treatment Plans (HPTPs) to identify treatment for historic properties that would be adversely affected; a process to guide limited geotechnical investigations; Native American consultation procedures; and other processes and implementation procedures. The Project HPMP was completed in June 2017. The term "historic property" refers to any cultural resource that has been found eligible for listing, or is listed, in the National Register of Historic Places (NRHP).

Native American Consultation

USACE is the lead Federal agency responsible for compliance with Section 106 of the NHPA and has conducted consultations with Native American Tribes and interested parties according to the PA. Several Native American Tribes and interested parties were contacted while developing the PA and provided with general information about the ARCF 2016 Project. Consultations specifically related to the Proposed Action are a continuation of the ongoing process. All Native American Tribes identified in the PA have been contacted and provided a description of the Proposed Action and requested to provide information on resources important to Native Americans. Consultation with Native American Tribes is ongoing.

The CVFPB is the State lead agency responsible for CEQA compliance. The California Natural Resources Agency adopted the California Natural Resource Agency Final Tribal Coordination Policy on November 20, 2012, which was developed in response to Governor Brown's September 19, 2011 Executive Order B-10-11. The CVFPB has adopted this Policy. Accordingly, Native American consultation for CEQA compliance will be conducted in accordance with the Policy adopted by the CVFPB. The purpose of the Policy is to ensure effective, meaningful, and mutually beneficial government-to-government consultation, communication, and coordination between the CVFPB and tribal entities relative to activities under the CVFPB's jurisdiction that my affect tribal communities. USACE and the CVFPB has contacted Native American contacts identified by the California Native American Heritage Commission (NAHC) in an effort to identify

cultural resources important to Native Americans, including Tribal Cultural Resources (TCRs) as defined in California Public Resources Code Section 21074, that may be present in the project area.

Identification of Potential Historic Properties

Records searches conducted at the North Central Information Center (NCIC) on October 21, 2019, and the Northwest Information Center (NWIC) on November 2021, identified one recorded potential Historic Property within the Proposed Action APE: P-34-005121, American River Railroad Bridge, a 1910 stationary truss railroad bridge associated with the Central Pacific Railroad.

Letters describing the Proposed Action APE were mailed to potentially interested Native American Tribes on October 8, 2019 by USACE. Responses were received from the Shingle Springs Band of Miwok Indians, Wilton Rancheria, and the United Auburn Indian Community (UAIC) requesting additional information and to consult on the project. Consultation is ongoing; at this time, no specific information has been received regarding potential historic properties, defined according to NHPA, or Native American–identified TCRs, defined according to State law.

The Proposed Action APE was surveyed on November 15, 2021, by professional archaeologists meeting the Secretary of the Interior (SOI) requirements joined by UAIC representatives. These surveys were conducted using intensive standards (transects spaced no more than 15 meters apart). A Trimble 7 Series GPS unit capable of sub-meter accuracy was carried to record the location of any identified resources. Hard copy maps were used to ensure adequate coverage of the APE. No cultural resources were identified.

Much of the Proposed Action APE is covered in pavement, structures, levees, landscaped, or consists of very steep terrain and is heavily vegetated. No archaeological resources were identified during the pedestrian survey. As noted above, one cultural resource was identified in the Proposed Action APE.

Based on the record search, background research, pedestrian survey, and consultation with interested Native American Tribes, USACE has found that the Proposed Action would result in No Adverse Effect to historic properties.

3.7.2 Methodology and Basis of Significance

3.7.2.1 Methodology

For those resources recommended to be eligible for listing in the NRHP/California Register of Historical Resources (CRHR), analysis of the effects or likely effects was based on evaluation of the changes to the existing historic properties that would result from implementing the Proposed Action. In making a determination of the effects on Historic Properties, consideration was given to:

- Specific changes in the characteristics of Historic Properties in the APE;

- The temporary or permanent nature of changes to Historic Properties and the visual area around the Historic Properties; and
- The existing integrity considerations of Historic Properties in the APE and how the integrity was related to the specific criterion (or criteria) that makes a Historic Property eligible for listing in the NRHP.

An assessment of effects for the purposes of this Supplemental EIR and a determination of effect under Section 106 of the NHPA is made only for those resources determined to be eligible for listing in the NRHP. Resources that have been found or recommended to be ineligible for listing in the NRHP are not considered further in this Supplemental EIR. Similarly, because isolated artifacts are generally not considered to be potentially eligible for listing in the NRHP and because an assessment of effects for the purposes of this Supplemental EIR and a determination of effects under Section 106 of the NHPA is made only for those resources determined to be eligible for listing in the NRHP or that are listed in the NRHP, isolated artifacts are not considered to be Historic Properties and an assessment of effects on those resources is not necessary. Therefore, isolated artifacts are not considered further in this Supplemental EIR.

This evaluation of potential effects on cultural resources is based on detailed information compiled since the ARCF GRR FEIS/FEIR was prepared, as described above under "Existing Conditions." The effects analysis considered the following factors related to the Proposed Action: project elements, including erosion counter measures, staging areas, potential effect mechanisms; the area that would be temporarily and permanently disturbed; known or potential locations of cultural resources, including locations identified by Native Americans as cultural landscapes, traditional cultural properties, sacred sites or other sensitive resources. In particular, the significance of each effect was evaluated in terms of its potential effect on resources that are eligible or potentially eligible for listing in the NRHP/CRHR. The mitigation identified in the ARCF GRR FEIS/FEIR for potential impacts on cultural resources included implementing stipulations of the ARCF PA.

USACE has not concluded determinations of NRHP eligibility for components of the Proposed Action based on consultation with SHPO and other ARCF PA Parties and, therefore, the impact analysis presented in this document does not reflect consensus findings under Section 106 of the NHPA as implemented through the ARCF PA. In accordance with the ARCF PA, confirmation of NRHP eligibility and findings of effect and appropriate mitigation would be made through consultation between USACE, SHPO, and other ARCF PA Parties as appropriate prior to initiating construction of the Proposed Action.

3.7.2.2 Basis of Significance

The following analysis uses the same basis of significance described in Section 3.9 (page 195) of the ARCF GRR FEIS/FEIR. Any adverse effects on cultural resources listed or eligible for listing in the NRHP (i.e., historic properties) are considered

significant. 36 CFR 800.5(a)(1) provides criteria for assessing an adverse effect. Effects are considered to be adverse under Section 106 of the NHPA if they:

- Alter, directly or indirectly, any of the characteristics of a cultural resource that qualify that resource for the NRHP so that the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association is diminished.
- Cause a substantial adverse change in the significance of a historic property through the physical demolition, destruction, relocation, or alteration of the historic property of its immediate surroundings such that the significance of the resource would be materially impaired.

Under California law (i.e., CEQA), effects on a historic resource or unique archaeological resource are considered to be adverse if they:

- Materially impair the significance of a historic resource or unique archaeological resource.
- Require the demolition of a historic resource.

Two additional significance thresholds not included in the 2016 ARCF GRR FEIS/FEIR are considered in this analysis. The project would be determined to result in a potentially significant effect if it would:

- Disturb any Native American human remains, including those interred outside of formal cemeteries; or
- Result in a substantial adverse change in the significance of a Tribal Cultural Resource (as defined in California Public Resources Code [PRC] Section 21074 and above) when compared against existing conditions.

3.7.3 Impact Analysis

3.7.3.1 No Action/No Project Alternative

Under the No-Action Alternative, USACE would not construct the proposed erosion protection measures. As a result, if a flood event were to occur, the Sacramento area would remain at the same level of risk of a possible levee failure due to erosion as today. Continued severe erosion has the potential to destroy buried cultural resources or to expose them to the surface, increasing the possibility of damage from both natural forces and man-made impacts.

Potential levee failure and the resulting major flooding event could alter existing conditions by burying, destroying, or revealing cultural resources. Failure of the levee and subsequent flooding would trigger post-failure emergency repairs. Flooding could result in significant damage to cultural resources in a large geographic area through erosion and inundation. The required post-failure emergency repairs could have a large footprint, and the urgent need to immediately repair the levee would preclude proper

planning and environmental protection. These effects on cultural resources would be significant. However, the timing, duration, and magnitude of such a flood is unpredictable, and therefore a precise determination of significance is not possible.

3.7.3.2 Proposed Action

Erosion protection measures would include substantial ground disturbance, including bank excavation and riprap placement, and use of staging areas. These earthmoving activities could result in damage to or destruction of unknown or subsurface historic-period sites, prehistoric-period archaeological sites, and Native American–identified TCRs.

One potential historic property is located within the Proposed Action APE: P-34-005121, American River Railroad Bridge, a 1910 stationary truss railroad bridge associated with the Central Pacific Railroad. In accordance with the ARCF PA, confirmation of NRHP eligibility and findings of effect and appropriate mitigation would be made through consultation between USACE, SHPO, and other ARCF PA Parties as appropriate prior to initiating construction of the Proposed Action.

Unknown archaeological resources and TCRs also could be discovered and inadvertently damaged during project construction.

Implementing Mitigation Measures CR-1, CR-2, CR-3, CR-4, and CR-5 described below would reduce the potential impact related to inadvertent damage to or destruction of presently undocumented archaeological resources and TCRs to a less-than-significant level under CEQA because the measures would require that if archaeological resources or TCRs are discovered prior to or during project-related construction, appropriate treatment and protection measures must be implemented.

Although no Native American human remains have been discovered in or near the APE, they could be encountered during earthmoving activities associated with the project. This potential impact related to inadvertent damage to or destruction of presently undocumented human remains would be significant. Implementing the new mitigation measure (Mitigation Measure CR-6) described below would reduce the impact to a less-than-significant level because it requires disturbances in the area of a find must be halted and appropriate treatment and protection measures must be implemented. All of this measure must be done in consultation with the NAHC, Most Likely Descendant (MLD), and landowners, in compliance with California Health and Safety Code Section 7050 et seq. and PRC Section 5097.9 et seq.

Avoidance, Minimization, and Mitigation Measures

The following mitigation measures augment the mitigation identified in the ARCF GRR FEIS/FEIR, including actions to address TCRs under CEQA and specifically address discovery of archaeological resources and human remains. If the project is implemented, USACE and the CVFPB would implement the measures as described.

Mitigation Measure CR-1: Resolve Adverse Effects through a Programmatic Agreement and Historic Properties Treatment Plan. A Programmatic Agreement has been executed for the ARCF Project. A Historic Properties Treatment Plan (HPTP) would be developed if the proposed action is found to result in adverse effects.

Mitigation Measure CR-2: Prepare an Archaeological Discovery Plan and an Archaeological Monitoring Plan. In accordance with the procedures described in Section 9.2 of the ARCF HPMP, an archaeological discovery plan would be developed for the Proposed Action. The discovery plan would specify what actions must be taken by the contractor in the event of an archaeological discovery and describe what actions USACE may take in the event of a discovery.

In accordance with the procedures described in Section 9.3.9 of the ARCF HPMP, an archaeological monitoring plan would be developed for the Proposed Action. This plan would identify the locations of known Historic Properties as well as sensitive areas designated for archaeological monitoring, and would include methods and procedures for monitoring and the procedures to be followed in the event of a discovery of archaeological materials.

Mitigation Measure CR-3: Conduct Cultural Resources Awareness Training. In accordance with the procedures described in Section 9.1 of the ARCF HPMP, USACE would require the contractor to provide a cultural resources and TCRs sensitivity and awareness training program for all personnel involved in project construction, including field consultants and construction workers. The training would be developed in coordination with and delivered by an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology, as well as culturally affiliated Native American tribes. USACE may invite Native American representatives from interested culturally affiliated Native American tribes to participate.

Mitigation Measure CR-4: Implement Procedures for Discovery of Cultural Material. If the discovery of cultural materials (e.g., unusual amounts of shell, animal bone, any human remains, bottle glass, ceramics, building remains), TCRs, sacred sites, or landscapes is made at any time during project-related construction activities, USACE in consultation with the CVFPB and other interested parties would develop appropriate protection and avoidance measures where feasible. These procedures would be developed in accordance with the ARCF PA and ARCF HPMP, which specifies procedures for post-review discoveries. Additional measures, such as development of HPTPs prepared in accordance with the PA and HPMP, may be necessary if avoidance or protection is not possible.

Mitigation Measure CR-5: Evaluate Any Tribal Cultural Resources Discovered and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects. California Native American Tribes have expertise regarding TCRs (PRC Section 21080.3.1). Consistent with the California Natural Resources Agency Tribal Consultation Policy, culturally affiliated Tribes would

be consulted concerning TCRs that may be affected, if these types of resources are discovered before or during construction. Consultation with culturally affiliated Tribes would focus on identifying measures to avoid or minimize impacts on any such resources discovered during construction. If TCRs are identified in the APE before or during construction, the following performance standards would be met before any further construction and associated activities that may result in damage to or destruction of TCRs:

- Each identified TCR would be evaluated for CRHR eligibility through application of established eligibility criteria (14 CCR 15064.636), in consultation with interested Native American Tribes.
- If a TCR is determined to be eligible for listing in the CRHR, USACE, in consultation with the CVFPB, would avoid damaging the Tribal Cultural Resource in accordance with PRC Section 21084.3, if feasible. If the CVFPB determines that the project may cause a substantial adverse change to a TCR, and measures are not otherwise identified in the consultation process, the following are examples of mitigation steps or alternatives capable of avoiding or substantially lessening potential significant impacts on a TCR:
    i. Avoid and preserve resources in place, including, but not limited to, planning construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    ii. Treat the resource with culturally appropriate dignity, taking into account the Tribal cultural values and meaning of the resource, including, but not limited to, the following:
        a. Protect the cultural character and integrity of the resource.
        b. Protect the traditional use of the resource.
        c. Protect the confidentiality of the resource.
        d. Establish permanent conservation easements or other interests in real estate, with culturally appropriate management criteria for the purposes of preserving or using the resources or places.
        e. Protect the resource.

Mitigation Measure CR-6: Implement Procedures for Discovery of Human Remains. The roles and responsibilities of USACE during the response to the discovery of human remains are outlined in the HPMP. To minimize adverse effects from encountering human remains during construction, the Project Partners would implement the following measures:

- In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, the CVFPB would consult

with USACE, and USACE would immediately halt potentially damaging excavation in the area of the burial and notify the Sacramento County Coroner and a professional archaeologist to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (California Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (California Health and Safety Code Section 7050.5[c]). After the coroner's findings have been made, the archaeologist and the NAHC-designated MLD, in consultation with the landowner, would determine the ultimate treatment and disposition of the remains.

- Upon the discovery of Native American human remains, USACE, in coordination with the CVFPB, would require that all construction work must stop within 100 feet of the discovery until consultation with the MLD has taken place. The CVFPB would lead consultation with the MLD, in coordination with USACE. The MLD would have 48 hours to complete a site inspection and make recommendations to the landowner after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. PRC Section 5097.98(b)(2) suggests that the concerned parties may mutually agree to extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. The following is a list of site protection measures that the CVFPB would employ:
  - Record the site with the NAHC or the appropriate Information Center.
  - Record a document with the county in which the property is located.
  - Rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. Reburial of the remains would be completed by the CVFPB or its authorized representative. If the NAHC is unable to identify an MLD, or if the MLD fails to make a recommendation within 48 hours after being granted access to the site, the CVFPB or its authorized representative may reinter the remains in a location not subject to further disturbance. If the CVFPB rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to the CVFPB, the CVFPB would implement mitigation to protect the burial remains. Construction work in the vicinity of the burials would not resume until the mitigation is completed.

Summary

The ARCF GRR FEIS/FEIR concluded that mitigation measures would reduce potential impacts of the project on cultural resources to a less-than-significant level as any adverse

effects would be resolved by implementing requirements contained in the PA. The ARCF GRR FEIS/FEIR also concluded that under CEQA the impacts of project construction on historic and unique archaeological resources would be significant and unavoidable. With implementation of new Mitigation Measures CR-1, CR-2, CR-3, CR-4, CR-5, and CR-6, the Proposed Action would have a less-than-significant impact with mitigation under CEQA.

3.8 Transportation and Circulation

3.8.1 Environmental Setting

3.8.1.1 Regulatory Setting

Section 3.10 (page 219) of the ARCF GRR FEIS/FEIR identified Federal, State, and local regulations that apply to transportation and circulation. Chapter 5 of the ARCF GRR FEIS/FEIR summarized the environmental laws and regulations and described the status of compliance with those laws and regulations. There are no additional laws or regulations applicable to transportation and circulation that have gone into effect since certification of the ARCF GRR FEIS/FEIR.

3.8.1.2 Existing Conditions

Section 3.10 of the ARCF GRR FEIS/FEIR (pages 220 through 224) describes the regional and local setting for the ARCF GRR Project, including the setting for the Proposed Action and vicinity. The following provides additional information specific to the Project Area.

The Project Area would be accessed from the State highway system from U.S. 50 and Business 80/Capital City Freeway. The nearest highway interchanges to the Project Area include the following:

- U.S. 50 and Howe Avenue
- Business 80/Capital City Freeway and Exposition Boulevard

In addition to the major arterial roadways used to access the Project Area described in the ARCF GRR FEIS/FEIR, including Howe Avenue, Arden Way, and Fair Oaks Boulevard, construction of the facilities planned under the Proposed Action would also require use of Exposition Boulevard, Ethan Way, and Hurley Way for construction traffic.

In addition, the Proposed Action would require use of minor arterial and collector roadways. In East Sacramento, H and J Streets would provide access to and from Site 1-1 from Howe Avenue.

3.8.1.3 Methodology

This analysis generally uses the same methodology described in Section 3.10.2 (page 224) of the ARCF GRR FEIS/FEIR. The methodology anticipated that the levee

improvements along the American River, including the Project Area, would generate intermittent substantial volumes of construction traffic, due to earthwork and delivery of materials. Operation of the Proposed Action would generate traffic volumes for maintenance activity that would be similar to traffic volumes for maintenance generated under existing conditions.

3.8.1.4 Basis of Significance

This analysis uses the same basis of significance described in Section 3.10.2 (page 224) of the ARCF GRR FEIS/FEIR, as stated below.

The Proposed Action would result in a significant effect related to transportation and circulation if it would:

- Substantially increase traffic in relation to existing traffic load and capacity of the roadway system;
- Substantially disrupt the flow of traffic;
- Expose people to significant public safety hazards resulting from construction activities on or near the public road system;
- Reduce the supply of parking spaces sufficiently to increase demand above supply;
- Cause substantial deterioration of the physical condition of nearby roadways;
- Result in inadequate emergency access; or
- Disrupt railroad services for a significant amount of time.

Since publication of the ARCF GRR FEIS/FEIR, changes to Appendix G of the State CEQA Guidelines were adopted. As a result, this analysis also takes into consideration the following modified significance criteria:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

3.8.2 Impact Analysis

3.8.2.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the Proposed Action would not be implemented, and the Sacramento metropolitan area would experience no change in the present level of risk of flooding due to levee failure from seepage, slope stability, overtopping, or other erosion concerns.

Under these conditions, a flood event could cause portions of the levees to fail, possibly triggering widespread flooding and related damage. If a catastrophic flood were to occur, emergency flood fighting and clean-up efforts would be initiated, probably requiring mobilization of a large number of emergency vehicles and construction equipment. In addition, under the No Action/No Project alternative, if a flood event were to occur, roadways and railroads could be inundated with floodwaters, causing disruptions in traffic and deterioration of roadway conditions. These effects on transportation would be considered significant; however, the timing, duration, and magnitude of a flood event is unpredictable and precise significance determination cannot be made.

3.8.2.2 Proposed Action

Traffic Load and Capacity

Section 3.10 (pages 224 through 229) of the ARCF GRR FEIS/FEIR analyzed the impacts on transportation and circulation associated with construction of levee improvements throughout the Sacramento area, including the Project Area that encompasses Site 1-1. The ARCF GRR FEIS/FEIR described that implementation of the proposed levee improvements would require moving construction equipment and materials along highways and local roads such as Howe Avenue, Arden Way, and Fair Oaks Boulevard, as well as local minor arterial streets to access the construction sites. The ARCF GRR FEIS/FEIR transportation and circulation impact analysis identified that construction of proposed levee improvements and related mitigation activities would intermittently generate substantial volumes of traffic due to the earthwork involved and the need for materials deliveries and would result in significant temporary and short-term impacts.

In addition, construction of levee improvements and related mitigation activities in performance of the Proposed Action would require trucks to enter the American River Parkway and Sutter's Landing Regional Park, and the increased traffic in the Parkway, Sutter's Landing Regional Park, and Glenn Hall Park would result in significant temporary impacts to recreational users, bicycle commuters, commuters, and residents adjacent to the levee structure. Construction-related traffic on residential roads to access the Parkway would result in significant temporary and short-term impacts to residents along the selected routes. The following discussion provides additional details on transportation and circulation effects of the Proposed Action that were not available when the ARCF GRR FEIS/FEIR was prepared.

Site Preparation and Mobilization

Site preparation would begin with trimming and/or removal of trees where construction access and activities would occur. After these activities, mobilization would include the application of temporary best management practices for the control of off-site stormwater runoff and sedimentation, building temporary access roads and ramps, preparing staging areas, and installing signage for traffic and alternate transportation routes that would be affected by construction activities (e.g., bicycle routes). Vegetation clearing could be needed to allow for site access and to accommodate construction activities.

As described in Chapter 2, *Alternatives*, construction activities would coincide with planned improvements by the California Department of Transportation (Caltrans) and the City of Sacramento. Coordination with Caltrans and the City is currently underway to prevent conflicts during site preparation and construction activities.

Site Access and Haul Routes

As depicted on Figure 2-12 in Chapter 2, *Alternatives*, haul routes for riprap, bedding, gravel, soil, and IWM would be from either I-80 or from U.S. 50. The neighborhoods along the routes would be notified of haul routes, ingress and egress points, staging areas, detours, lane closures (if any), and closed recreational areas (including bike paths) approximately one week prior to commencement of construction activities. Signage would be installed at all ingress and egress locations approximately one week prior to construction to alert the public of construction activities and potential restrictions on access during construction activities. Coordination with the UPRR would occur well before construction starts to ensure railroad safety measures are in place.

As depicted on Figure 2-12, haul trucks would travel to the staging areas using the main ingress points at either the Sutter's Landing Regional Park entrance located off of 28th Street or at Glenn Hall Park located off of Carlson Drive. Haul trucks would travel along the top of the levee crossing the paved bicycle path adjacent to the 28th and B Street Skate Park. Bicycle traffic within Sutter's Landing Regional Park would be controlled by a dedicated flagger during construction to prevent collisions from occurring. All other areas along the levee east of Sutter's Landing Regional Park to Glenn Hall Park would be closed to pedestrian and bicycle traffic for safety reasons. All traffic passing over the UPRR at-grade crossing would require a dedicated flagger and other railroad safety measures during construction. Haul trucks would enter either main ingress points and use either the downstream or upstream temporary construction access ramps to deliver their loads on the waterside of the levee along Site 1-1 and then continue along the top of the levee to exit at either Glenn Hall Park or at Sutter's Landing Regional Park. Haul trucks would travel either north or south along Howe Avenue to either I-80 or to U.S. 50. Some smaller pickup trucks or equipment may enter from either Glenn Hall Park or at Sutter's Landing Regional Park to access Site 1-1. In addition, the haul routes shown on Figure 2-12 could be used in both directions if traffic or road closures occur for unforeseen reasons (e.g., emergencies, road construction, etc.) during the construction period.

Anticipated Construction Traffic Volumes and Distribution

Construction traffic associated with the Proposed Action would result from the transport of construction personnel, materials, and equipment to and from the Project Area. Most construction traffic volumes would be associated with the delivery of material and supplies to staging areas and Site 1-1, and export of fill to off-site locations. **Table 3-10** provides a summary of haul trips, as they would be anticipated to occur throughout the primary construction phases. The Proposed Action would result in approximately 15,790 truck trips, based on the anticipated size of haul vehicles. Haul trips would begin in approximately May 2023 and continue through approximately November 2023. The anticipated peak haul trips per hour would take place from May 2023 through October 2023 during the

TABLE 3-10
ANTICIPATED CONSTRUCTION TRAFFIC VOLUMES

Schedule	Materials	Total Imported Materials (cy or trees)	Total Haul Trips	Return/Unloaded Trips	Total Truck Trips	Scheduled Delivery Days	Trips/Day	Trips/Hr
May 2023 through October 2023	Excavated Soil	3,500 cy	360	360	720	12	60	5.5
	Bedding Material	7,520 cy	750	750	1500	12	125	11.4
	Riprap	23,400 cy	2,700	2,700	5,400	34	159	14.4
	Soil-filled Riprap	10,000 cy	1,500	1,500	3,000	14	214	19.5
	Planting Bench Soil	21,000 cy	2,090	2,090	4,180	26	161	14.6
November 2023	Aggregate Base	4,100 cy	455	455	910	9	101	9.2
	IWM	160 trees	40	40	80	20	4	0.4
		Total	**7,895**	**7,895**	**15,790**	**Peak Trips**	**214**	**19**

NOTES:
1 CY: Cubic Yards
2 Truck Volume
- Excavated Soil 9.72 cy
- Bedding Material 10.03 cy
- Riprap 8.67 cy
- Soil-filled Riprap 6.67 cy
- Planting Bench Soil 10.05 cy
- Aggregate Base 9.01 cy
- IWM 4 trees

3 Construction Day (Hours) 11

Source: USACE, 2022; ESA, 2021.

primary construction phase. Haul trips would be anticipated to take place intermittently throughout each project phase, with the number of delivery days for each type of material to occur as shown in Table 3-10, as the number of active construction days is greater than the number of delivery days required for each material quantity. On days in which deliveries would be anticipated to take place and based on an assumption of evenly distributed truck trips across an 11-hour workday, the construction phase of the Proposed Action could be anticipated to have a peak of approximately 19 truck trips per hour along the proposed haul routes during the primary construction phase from May 2023 through October 2023. This would be a significant and unavoidable impact.

Safety Hazards

Construction of levee improvements at Site 1-1 would require trucks to enter the Sutter's Landing Regional Park and the Parkway. The increased traffic in these recreational areas would result in significant temporary and short-term impacts on recreational users, bicycle commuters, and pedestrians. Without appropriate safeguards, implementation of the Proposed Action could expose people to significant public safety hazards resulting from construction activities on or near the public road system and within the Parkway.

While the transportation and circulation analysis in the ARCF GRR FEIS/FEIR did not specifically evaluate public safety hazards resulting from construction activities on or near the public road system, this topic was addressed in the ARCF GRR FEIS/FEIR by Mitigation Measure TR-1: Prepare and Implement a Traffic Control and Road Maintenance Plan, which is incorporated into the Proposed Action. The mitigation measure includes the requirement that safe pedestrian and bicyclist access be maintained around the construction areas at all times, the requirement that construction areas would be secured as required by the applicable jurisdiction to prevent pedestrians and bicyclists from entering the work site, and the requirement that all stationary equipment would be located as far away as possible from areas where bicyclists and pedestrians are present. Implementation of Mitigation Measure TR-1 identified in the ARCF GRR FEIS/FEIR and previously adopted and incorporated into the Proposed Action and new Mitigation Measure TR-2 would ensure that public safety hazards resulting from construction activities on or near the public road system would be reduced to less than significant.

Parking Demand

The ARCF GRR FEIS/FEIR determined that the increase in vehicle traffic within the project area that would by caused by the Proposed Action would not result in a reduction of public parking availability, because construction vehicles would be required to park in designated staging areas, as specified in the mitigation measure provided below.

Mitigation measures identified in the ARCF GRR FEIS/FEIR are incorporated into the Proposed Action, including the requirement that the construction contractor provide adequate parking for construction trucks, equipment, and construction workers within designated staging areas throughout the construction period. If inadequate space for parking is available at a given work site, the construction contractor would be required to provide an off-site staging area and as needed, coordinate the daily transport of

construction vehicles, equipment, and personnel to and from the work site. Several designated staging areas would include parking spaces at Sutter's Landing Regional Park at the request of the City of Sacramento. Use of the parking spaces would be temporary and would not impede or otherwise prevent users of the Sutter's Landing Regional Park from finding parking within the park or available neighboring street parking. Implementation of mitigation measures identified in the ARCF GRR FEIS/FEIR and incorporated into the Proposed Action would ensure that impacts related to the supply of parking spaces adjacent to project sites would be less than significant.

Deterioration of Roadways

The ARCF GRR FEIS/FEIR determined that construction of the levee improvements would result in a substantial increase in traffic on local roadways associated with truck haul trips during construction activities, and the haul trucks could cause additional damage or deterioration to roadway conditions.

Without appropriate safeguards, implementation of the Proposed Action, which would deploy substantial numbers of heavy-duty trucks hauling heavy loads of soil, rock, and other materials, could cause substantial deterioration of the physical condition of nearby roadways, including potholes, fractures, or other damages. Mitigation measures identified in the ARCF GRR FEIS/FEIR are incorporated into the Proposed Action, including the requirement that the construction contractor assess damage to roadways caused by the transit of project vehicles and equipment and repair all potholes, fractures, or other damages. Implementation of mitigation measures identified in the ARCF GRR FEIS/FEIR and incorporated into the Proposed Action (see below) would ensure that impacts related to substantial deterioration of the physical condition of nearby roadways would be less that significant.

Inadequate Emergency Access

The ARCF GRR FEIS/FEIR determined that construction of the levee improvements would result in a substantial increase in traffic on local roadways associated with truck haul trips during construction activities. The ARCF GRR FEIS/FEIR determined that traffic controls associated with truck haul trips during construction activities would cause or contribute to substantial temporary increases in traffic levels on several roadways, as traffic is detoured, slowed, or disrupted by lane closures. Traffic controls could cause delays during the morning and evening peak commute hours, which could disrupt emergency response times in the vicinity of the construction sites. Implementation of mitigation measures identified in the ARCF GRR FEIS/FEIR and incorporated into the Proposed Action would ensure that impacts related to inadequate emergency access would be less than significant.

Conflict or Inconsistency with State CEQA Guidelines Section 15064.3

State CEQA Guidelines Section 15064.3(b) was adopted in December 2018 by the California Natural Resources Agency and took effect on July 1, 2020. Amendments to the CEQA Guidelines Appendix G, Section XVII were also adopted. These revisions to

the State CEQA Guidelines criteria for determining the significance of transportation impacts shift the focus from vehicle delay to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses for projects that are not roadway capacity projects. Vehicle miles traveled (VMT) is a measure of the total number of miles driven to or from a destination, such as work and home, and is sometimes expressed as an average per trip or per person.

CEQA Guidelines Section 15064.3(a) states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project," where, in accordance to guidance provided by the California Office of Planning and Research,[81] automobiles refer to on-road passenger vehicles, specifically cars and light trucks. Consequently, truck haul trips associated with construction for the Proposed Action are not factored into the assessment of project VMT, and the focus of this analysis is on passenger vehicle (i.e., cars and light trucks) trips generated by the Proposed Action. However, this Draft EIR also includes an analysis of emissions associated with truck traffic generated by the Proposed Action (as well as commuter trips; see Section 3.9, *Air Quality* Section 3.10, *Greenhouse Gas Emissions and Energy Consumption*)

While the Proposed Action would result in temporary construction-related vehicle trips (i.e., cars and light trucks) associated with workers traveling to and from construction sites, these additional trips would not be expected to result in a long-term change in travel behavior or a long-term increase in VMT. In addition, the Proposed Action would not develop any uses (e.g., residential, commercial, industrial) that would result in a long-term change in travel behavior or a long-term increase in VMT. Operations and maintenance trips associated with improvements implemented under the Proposed Action would not be anticipated to materially increase over existing trips. Consequently, the Proposed Action would not result in a long-term increase in VMT or result in conflicts or inconsistency with State CEQA Guidelines Section 15064.3, and the Proposed Action would result in a less-than-significant impact.

Conflict with a Program, Plan, or Ordinance: Decreased Performance or Safety of Alternative Modes of Transportation

Construction of the Proposed Action would have an impact on bicycle and pedestrian routes along the American River Parkway. As described in Chapter 2, *Alternatives*, construction of levee improvements at Site 1-1 would require trucks to enter the Parkway and Sutter's Landing Regional Park. The increased traffic in these recreational areas would result in significant temporary and short-term impacts on recreational users, bicycle commuters, and pedestrians. Construction activities would result in the temporary closure of bicycle/pedestrian pathways, requiring commuters and recreational users to seek alternative routes within the Parkway and Sutter's Landing Regional Park or in adjacent neighborhoods. While temporary, these impacts would have the potential to reduce safe access for bicycle and pedestrian users, which would conflict with the County

[81] California Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018.

of Sacramento's policy regarding pedestrian pathways along the Parkway or Sutter's Landing Regional Park. However, implementation of the previously adopted mitigation measures described below would reduce impacts to less than significant.

ARCF GRR FEIS/FEIR Mitigation Measures

The following ARCF GRR FEIS/FEIR mitigation measure found in Section 3.10 (pages 228-229) is incorporated into the Proposed Action:

> **Mitigation Measure TR-1: Prepare and Implement a Traffic Control and Road Maintenance Plan.** Before the start of project-related construction activities, USACE in coordination with CVFPB would require the contractor to prepare a Traffic Control and Road Maintenance Plan. The items listed below would be included in the plan and as terms of the construction contracts:
>
> - The contractor would be required to prepare a Traffic Control and Road Maintenance Plan. A traffic control plan describes the methods of traffic control to be used during construction. All on-street construction traffic would be required to comply with the City of Sacramento's standard construction specifications as detailed in City Code 12.20.030 to the satisfaction of the City Traffic Engineer. The plan would reduce the effects of construction on the roadway system in the Project Area throughout the construction period.
> - Construction contractors would follow the standard construction specifications of affected jurisdictions, including UPRR, and obtain the appropriate encroachment permits, if required. The conditions of the encroachment permit would be incorporated into the construction contract and would be enforced by the agency that issues the encroachment permit.
> - Proposed lane closures would be coordinated with the appropriate jurisdiction and would be minimized to the extent possible during the morning and evening peak traffic periods.
> - Standard construction specifications also typically limit lane closures during commuting hours. Lane closures would be kept as short as possible. If a road must be closed, detour routes and/or temporary roads would be made to accommodate traffic flows. Detour signs would be provided to direct traffic through detours. Advance notice signs of upcoming construction activities would be posted at least 1 week in advance so that motorists are able to avoid traveling through the study area during these times. Within the Parkway, detours would be used to allow for continued use by bicycle commuters.
> - Safe pedestrian and bicyclist access would be maintained around the construction areas at all times. Construction areas would be secured as required by the applicable jurisdiction to prevent pedestrians and bicyclists from entering the work site, and all stationary equipment would be located as far away as possible from areas where bicyclists and pedestrians are present.
> - The construction contractor would provide adequate parking for construction trucks, equipment, and construction workers within the designated staging

areas throughout the construction period. If inadequate space for parking is available at a given work site, the construction contractor would provide an off-site staging area and, as needed, coordinate the daily transport of construction vehicles, equipment, and personnel to and from the work site.

- The construction contractor would assess damage to roadways used during construction and the UPRR at-grade railroad crossing and would repair all potholes, fractures, or other damages.
- The construction contractor would notify and consult with emergency service providers at least 14 days prior to commencement of construction that would partially or fully obstruct roadways to ensure that alternative emergency access routes are established to facilitate the passage of emergency vehicles on city streets.
- Emergency vehicle access would be made available at all times. The contractor would be required to coordinate with local emergency responders to inform them of the construction activities.

Summary

Implementation of the Proposed Action would generate temporary but substantial volumes of traffic on local roadways and highways, primarily numerous daily transits by haul trucks carrying material to and from project site. Mitigation measures identified in the 2016 ARCF GRR FEIS/FEIR are incorporated into the Proposed Action and would reduce the magnitude of impacts, but temporary traffic increases during project construction would remain significant and unavoidable. Construction of the Proposed Action would not cause new or more severe traffic impacts than those addressed in the ARCF GRR FEIS/FEIR

Implementation of the proposed new mitigation measure, not included in the ARCF GRR FEIS/FEIR, below would reduce anticipated impacts on the safety of alternative modes of transportation (e.g., bicycles and pedestrians) to a less-than-significant level.

Additional Mitigation Measure

Implementation of the following mitigation measure would reduce the impact on bicycle and pedestrian access to a less-than-significant level. To maintain safe usage of pedestrian and bicycle facilities that would intersect construction traffic, signal personnel would be in place to control construction vehicle, pedestrian, and bicycle traffic at those locations.

Mitigation Measure TR-2: Provide Bicycle and Pedestrian Access. The contractor would prepare a Traffic Control and Road Maintenance Plan that would include, but not be limited to, the following provisions related to bicycle and pedestrian access:

- Provide signs along affected pedestrian and bicycle pathways announcing scheduled closures and recommended detour routes.
- Place signal personnel at intersections of construction vehicle pathways and active bicycle and pedestrian facilities.

3.9 Air Quality

3.9.1 Environmental Setting

3.9.1.1 Regulatory Setting

Section 3.11 (page 229) of the ARCF GRR FEIS/FEIR identified the Federal Clean Air Act (CAA) and the California Clean Air Act (CCAA) that apply to regulating air quality emissions. Chapter 5 of the ARCF GRR FEIS/FEIR summarized the environmental laws and regulations that apply to the Proposed Action and described the status of compliance with those laws and regulations. Additional and updated applicable laws and regulations related to air quality are summarized below.

Federal

Criteria Air Pollutants

The CAA requires the U.S. Environmental Protection Agency (EPA) to set minimum emissions standards for a range of pollution sources. Specifically, EPA and the National Highway Traffic Safety Administration (NHTSA) regulate emissions from on-road vehicles include automobiles and light-duty trucks. In 2012, EPA and NHSTA established the Corporate Average Fuel Economy (CAFE) standards for automobiles and light-duty trucks for model years 2014 and beyond (77 *Federal Register* [FR] 62624). Under the original iteration of the CAFE standards, fuel economy would be raised to the equivalent of 54.6 miles per gallon by 2025 (77 FR 62630).

On August 2, 2018, the NHSTA and EPA proposed the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE Rule) (49 Code of Federal Regulations (CFR) 523, 531, 533, 536, and 537 and 40 CFR 85 and 86). This rule addresses emissions and fuel economy standards for motor vehicles and is separated in two parts as described below.

Part One, "One National Program" (84 *Federal Register* [FR] 51310), revokes a waiver granted by EPA to the State of California under Section 209 of the CAA to enforce more stringent emission standards for motor vehicles than those required by EPA for the explicit purpose of reducing greenhouse gas (GHG) and, indirectly, criteria air pollutants and ozone precursor emissions. This revocation became effective on November 26, 2019, restricting the ability of the California Air Resources Board (CARB) to enforce more stringent GHG emission standards for new vehicles and set zero-emission-vehicle mandates in California.[82] However, on April 26, 2021, EPA announced plans to reconsider Part One of the SAFE Rule as directed in Executive Order 13990, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis." At this time, EPA is seeking public input on its reconsideration of the action. However, on April 26, 2021, EPA announced plans to reconsider Part One of the SAFE Rule as directed in Executive Order 13990, "Protecting Public Health and the Environment and Restoring Science to

[82] National Highway Traffic Safety Administration. 2019. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One Nation Program. 49 CFR Parts 531 and 533. Available: https://www.govinfo.gov/content/pkg/FR-2019-09-27/pdf/2019-20672.pdf. Accessed December 22, 2021.

Tackle the Climate Crisis" (discussed below). Public comments to the Notice of Reconsideration ended on June 6, 2021, and EPA held a public hearing on June 22, 2021.[83]

Part Two addresses CAFE standards for passenger cars and light trucks for model years 2021–2026. This rulemaking proposes new CAFE standards for model years 2022–2026 and would amend existing CAFE standards for model year 2021. The proposal would retain the model year 2020 standards (specifically, the footprint target curves for passenger cars and light trucks) through model year 2026, but comment is sought on a range of alternatives discussed throughout the proposed rule. This proposal addressing CAFE standards is being jointly developed with EPA, which is simultaneously proposing tailpipe carbon dioxide standards for the same vehicles covered by the same model years. The final SAFE Rule Part Two was released on March 31, 2020, and multiple lawsuits have been filed challenging the rulemaking.

Toxic Air Contaminants

TACs, or in federal parlance, HAPs, are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established. Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

State

In December 2018, the California Supreme Court issued its decision in *Sierra Club v. County of Fresno* (226 Cal.App.4th 704), (herein referred to as the Friant Ranch decision). The case reviewed the long-term, regional air quality analysis contained in the EIR for the proposed Friant Ranch development. The Court ruled that the air quality analysis failed to adequately disclose the nature and magnitude of long-term air quality health impacts from emissions of criteria air pollutants and precursors "in sufficient detail to enable those who did not participate in its preparation to understand and consider meaningfully the issues the proposed project raises." The Court noted that the air quality analysis did not discuss the foreseeable adverse health effects of project-generated emissions on Fresno County's likelihood of exceeding the NAAQS and CAAQS for criteria air pollutants, nor did it explain why it was not "scientifically possible" to determine such a connection. The Court

[83] National Highway Traffic Safety Administration. 2019. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One Nation Program. 49 CFR Parts 531 and 533. Available: https://www.govinfo.gov/content/pkg/FR-2019-09-27/pdf/2019-20672.pdf. Accessed December 22, 2021.

concluded that "because the EIR as written makes it impossible for the public to translate the bare numbers provided into adverse health impacts or to understand why such translation is not possible," the EIR's discussion of air quality impacts was inadequate. As a result, EIR analyses must make a reasonable effort to substantively connect the project's air quality impacts to likely health consequences and that an EIR should relate the expected adverse air quality impacts to likely health consequences or explain in meaningful detail why it is not feasible to do so. In California, CARB is the agency responsible for coordination and oversight of state and local air pollution control programs and for implementing the CCAA and demonstrating compliance with the NAAQS. California law authorizes CARB to set ambient (outdoor) air pollution standards (California Health and Safety Code Section 39606) for criteria air pollutants in consideration of public health, safety, and welfare. CARB has established CAAQS for criteria air pollutants of ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}), fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead, as well as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter. The standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

Local

Sacramento Metropolitan Air Quality Management District

Criteria Air Pollutants

The Sacramento Metropolitan Air Quality Management District (SMAQMD) is the primary agency responsible for planning to meet NAAQS and CAAQS in Sacramento County. SMAQMD works with other local air districts in the Sacramento region to maintain the region's portion of the State Implementation Plan (SIP) for ozone. The SIP is a compilation of plans and regulations that govern how the region and state will comply with the CCA requirements to attain and maintain the NAAQS for ozone. The Sacramento Region has been designated as a "moderate" nonattainment area for the 2015 8-hour ozone standard.[84]

SMAQMD has developed a set of guidelines for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria air pollutants and toxic air contaminants (TACs) and make recommendations for conducting air quality analyses. Thresholds of significance adopted by SMAQMD are designed on a cumulative basis, considering regional growth and anticipated development, such that projects that do not exceed the adopted thresholds would not impede the region from achieving the CAAQS and ultimately the NAAQS. Further, because the ambient air quality standards are designed to protect public health, projects that do not exceed SMAQMD-adopted thresholds, or are reduced to below the thresholds

[84] U.S. Environmental Protection Agency. 2021. Greenbook 8-Hour Ozone (2015) Designated Area (State/Area/County Report). Last updated November 30, 2021. Available: https://www3.epa.gov/airquality/greenbook/jbcs.html#CA. Accessed December 22, 2021.

with applied mitigation, would be considered to have a less-than-significant impact under CEQA, would not contribute to exceedance of a CAAQS or NAAQS, and would not result in adverse health effects.

After SMAQMD guidelines have been consulted and the air quality impacts of a project have been assessed, the lead agency's analysis undergoes a review by SMAQMD. SMAQMD submits comments and suggestions to the lead agency for incorporation into the environmental document.

All projects in the Sacramento area are subject to SMAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the Proposed Action may include but are not limited to the following:

- **Rule 201:** General Permit Requirements. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may be required to obtain permit(s) from SMAQMD before equipment operation. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment) with an internal combustion engine greater than 50 horsepower must have a SMAQMD permit or CARB portable equipment registration.

- **Rule 402:** Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.

- **Rule 403:** Fugitive Dust. The developer or contractor is required to control dust emissions from earthmoving activities or any other construction activity to prevent airborne dust from leaving the Project Area.

In addition, if modeled construction-generated emissions for a project are not reduced to less than SMAQMD's mass emission threshold (i.e., 85 pounds per day [lb/day]) after the standard construction mitigation is applied, then SMAQMD recommends charging an off-site construction mitigation fee. The fee must be paid before a grading permit can be issued. This fee is charged by SMAQMD to fund emission reduction programs. One example is SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies.

Toxic Air Contaminants

At the local level, air districts may adopt and enforce CARB control measures. Under SMAQMD Rule 201 ("General Permit Requirements"), construction equipment that possess the potential to emit TACs must be permitted by SMAQMD. Permits may be granted if a project is constructed and operated in accordance with applicable regulations, including air toxics control measures. SMAQMD limits emissions and public exposure to TACs through several programs. SMAQMD prioritizes TAC-emitting stationary sources

based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants.

In September 2020, SMAQMD released the most recent version of the Mobile Source Air Toxics Protocol (MSAT Protocol). The MSAT Protocol provides guidance to local land use jurisdictions on assessing and disclosing potential cancer risk and $PM_{2.5}$ concentrations from major roadways and railways throughout Sacramento County. The MSAT Protocol replaces the *Recommended Protocol for the Evaluation of Sensitive Receptors Adjacent to Major Roadways*.[85]

Odors

Although offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and SMAQMD. SMAQMD's Rule 402 ("Nuisance") regulates odors.

Health Effects

In October 2020 SMAQMD issued Guidance to Address the Friant Ranch decision for CEQA Projects in SMAQMD's jurisdiction.[86] In that decision, the California Supreme Court held that an EIR should "relate the expected adverse air quality impacts to likely health consequences or explain in meaningful detail why it is not feasible at the time of drafting to provide such an analysis." The Final Guidance contains two screening tools, one for a "Minor Project" and another for "Strategic Area Projects." Strategic Area Projects are projects that generate emissions two to eight times greater than the maximum thresholds of significance (derived from identifying the greatest thresholds from air districts operating within the SVAB). Minor Projects are projects that generate emissions below the maximum thresholds of significance. Given its size and estimated level of emissions, the Proposed Action is considered a Strategic Area Project and was grouped into the Strategic Area Project III, "Downtown Sacramento," designation due to the Proposed Action's location.

3.9.1.2 Existing Conditions

Section 3.11 (pages 230 through 235) of the ARCF GRR FEIS/FEIR adequately describes the regional and local setting of the Project Area.

85 Sacramento Metropolitan Air Quality Management District. 2020 (September) Mobile Source Air Toxics Protocol Guidance Document. Available: http://www.airquality.org/LandUseTransportation/Documents/Final MSATProtocolGuidancev1.3Sept2020.pdf. Accessed December 22, 2021.

86 Sacramento Metropolitan Air Quality Management District. 2020 (October). Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District. Available: http://www.airquality.org/LandUse Transportation/Documents/SMAQMDFriantRanchFinalOct2020.pdf. Accessed December 22, 2021.

3.9.2 Methodology and Basis of Significance

3.9.2.1 Methodology

This analysis generally uses the same methodology described in Section 3.11 (page 236) of the ARCF GRR FEIS/FEIR. Project-specific material quantities, haul routes, daily equipment use/types, and construction worker information have been added and are the basis for this analysis. The types of construction activities that would generate emissions of air pollutants include clearing of trees, vegetation, and loose materials; degrading and excavating the levee; installation of rock revetment; construction of a launchable-rock-filled trench; reconstruction of the levee; associated worker haul and commute trips; and construction of mitigation sites. Refer to **Appendix D** for all inputs, assumptions, and modeling results. Where significant air quality impacts are identified, mitigation measures to reduce these impacts are specified.

Construction would take place over a 1.5-year period. Based on available construction sequencing assumptions, site preparation would begin in November 2022 and last through the Summer of 2024. This would entail the removal and/or trimming of trees where access and construction activities would occur. Mobilization of construction equipment, site preparation, and construction would begin as early of May 2023 and would take approximately 7 months to complete, with another 6 months of post-construction work (e.g., plantings, irrigation, stormwater control monitoring). Post-construction work would be similar to existing maintenance activities; thus, emissions were not quantified. Maximum emissions associated with the Proposed Action would occur during the primary earthwork, during the second year of construction, modeled in 2023.

Construction would begin Monday through Saturday at 7:00 a.m. and end by 6:00 p.m.; Sundays from 9:00 a.m. to 6:00 p.m. Based on the construction sequencing anticipated, maximum construction activity would occur from May 2023 to December 2023 when rock hauling, on-site earth movement, and bank protection work would be underway simultaneously. The air quality analysis prepared for the Proposed Action quantified a "worst case scenario" scenario that would occur during 2023 and daily emissions were compared to SMAQMD's thresholds of significance. A General Conformity Determination was also prepared, which quantified project emissions by calendar year and is included in **Appendix E**.

A variety of emissions modeling software and methods were used, consistent with SMAQMD guidance. The SMAQMD Roadway Construction Emissions Model Version 9.0 was used to obtain emission factors for heavy-duty construction equipment. Default off-road equipment emission factors, default horsepower, and load factors from the model were used, also consistent with defaults used in the California Emissions Estimator Model (CalEEMod) Version 2020.4.0.[87] Modeling incorporated the Proposed Action's commitment that heavy-duty construction equipment of 50 horsepower or

[87] California Air Pollution Control Officers Association. 2021 (May). CalEEMod Users Guide Version 2020.4.0. Available: http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/01_user-39-s-guide2020-4-0.pdf?sfvrsn=6. Accessed December 22, 2021.

greater would consist of, at a minimum, 90 percent EPA Tier 4 standards. No Tier 0 or uncontrolled equipment would be used as part of implementation without prior approval from the U.S. Army Corps of Engineers (USACE) and a proposed mitigation plan to reduce these emissions to a minimum of Tier 1 levels. Fugitive dust emissions of PM_{10} were calculated from aggregate storage piles, dump truck travel on unpaved roads, hauling travel on paved roads, worker commute trips, and bulldozing and grading using emissions factors derived from EPA's AP-42 emissions factors using site specific information where available. Fugitive dust emissions of $PM_{2.5}$ were calculated using a 0.1 ratio of $PM_{2.5}$ to PM_{10} from EPA's AP-42 emissions factors. Regarding hauling emissions, it was assumed that haul trucks to the construction site would consist of trucks with the capacity to haul 10 cubic yards (cy) of materials.

The SMAQMD's Guidance to Address the Friant Ranch Decision was used to evaluate health effects for the Proposed Action. Consistent with SMAQMD's Final Friant Ranch Guidance, the anticipated construction emissions of criteria air pollutants were used to estimate foreseeable adverse health outcomes using SMAQMD's Strategic Area Project Health Screening Tool. Strategic Area Project III, "Downtown Sacramento," was used because it is the closest to the Proposed Action. **Table 3-11**, below, summarizes the anticipated health effects in the region from the Project's unmitigated emissions across all populations in the Sacramento Region.

In addition to estimating mass emissions from criteria air pollutants, air dispersion modeling was conducted to estimate health risks from project construction. Emissions from TACs (i.e., diesel PM) was modeled using EPA's AERMOD and health risks were calculated using CARB's HARP 2. The health risk assessment (HRA) considered TAC emissions associated with the use of heavy-duty construction equipment at the Proposed Action's construction site and the potential health risk effects at the nearest sensitive receptors.

It was conservatively assumed that rock material could be hauled to the site from as far as 75 miles and instream woody material (IWM) from within a 100-mile radius. For the HRA, haul trucks with a capacity of 10 cy were assumed. As shown in Figure 2-11, there are two potential haul route scenarios, referred herein as Scenario 1 North and Scenario 2 South. Under Scenario 1 North, once haul trucks leave Site 1-1, they would travel north along Howe Avenue until they reach I-80. Under Scenario 2 South, once haul trucks leave Site 1-1, they would travel south along Howe Avenue until they reach U.S. 50. Because the specific route is unknown at this time, and due to the local nature of TAC health risk exposure, which is determined by local meteorological factors, mass emission rates, and proximity to receptors, the two scenarios were modeled separately for the HRA, assuming all anticipated hauling activity in each direction (north and south) for each hauling scenario. See Appendix E for modeling inputs and outputs.

In addition, note that if other, closer material sources were used, haul routes that could be used would result in shorter distances and associated lower emission levels, and therefore, the scenario modeled represents the highest potential diesel PM emissions, and associated risk levels.

TABLE 3-11
POTENTIAL ANNUAL INCREMENTAL HEALTH INCIDENCES FOR THE PROPOSED ACTION

Health Endpoint	Health Endpoint	Health Endpoint	Age Range	Incidences (Mean)	Percent of Background Incidences	Total Number of Health Incidences (per Year)
$PM_{2.5}$	Respiratory	Emergency Room Visits	0-99	2.0	0.011%	18,419
		Hospital Admissions, Asthma	0-64	0.13	0.0070%	1,846
		Hospital Admissions, All Respiratory	65-99	0.69	0.0035%	19,644
	Cardiovascular	Hospital Admissions, All Cardiovascular (less Myocardial Infarctions)	65-99	0.36	0.0015%	24,037
		Acute Myocardial Infarction, Nonfatal	18-24	0.00018	0.0048%	4
		Acute Myocardial Infarction, Nonfatal	25-44	0.016	0.0051%	308
		Acute Myocardial Infarction, Nonfatal	45-54	0.035	0.0048%	741
		Acute Myocardial Infarction, Nonfatal	55-64	0.061	0.0049%	1,239
		Acute Myocardial Infarction, Nonfatal	65-99	0.23	0.0046%	5,052
	Mortality	Mortality, All Causes	30-99	5.1	0.011%	44,766
Ozone	Respiratory	Hospital Admissions, All Respiratory	65-99	0.12	0.00060%	19,644
		Emergency Room Visits, Asthma	0-17	0.64	0.011%	5,859
		Emergency Room Visits, Asthma	18-99	1.0	0.0083%	12,560
	Mortality	Mortality, Non-Accidental	0-99	0.079	0.00026%	30,386
		Total Incidences	***0-99***	10.46	0.0784%	***184,505***

NOTES:
$PM_{2.5}$ = fine particulate matter

SOURCE: Modeling conducted by Ascent Environmental in 2021.

3.9.2.2 Basis of Significance

This analysis uses the same basis of significance described in Section 3.11 (page 238) of the ARCF GRR FEIS/FEIR, as summarized below.

The Proposed Action would result in a significant effect related to air quality if it would:

- Conflict with, or obstruct implementation of, the applicable air quality plan;

- Violate any air quality standard or substantial contribution to existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area under NAAQS and CAAQS;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

Since publication of the ARCF GRR FEIS/FEIR, changes to Appendix G of the State CEQA Guidelines were adopted. Specifically, Appendix G of the State CEQA Guidelines considers the direct, indirect, or cumulative effects of air pollutant emissions. In addition, Appendix G no longer includes the criterion of violation of any air quality standard or contribute substantially to an existing or projected air quality violation. As a result, this analysis also takes into consideration the following modified significance criterion:

- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

An air quality effect is considered significant if the Proposed Action's construction emissions would:

- Cause construction-generated criteria air pollutant or precursor emissions to exceed SMAQMD-recommended thresholds. The thresholds are as follows:
  - NOx: 85 lb/day,
  - PM_{10}: zero, or if all feasible control measures are applied then 80 lb/day and 14.6 tons/year,
  - $PM_{2.5}$: zero, or if all feasible control measures are applied then 82 lb/day and 15 tons/year for $PM_{2.5}$;
- Cause construction-generated criteria air pollutant or precursor emissions to exceed the General Conformity *de minimis* thresholds of 25 tons/year for ROG and NO_X, and 100 tons/year for CO, PM_{10}, and $PM_{2.5}$;
- Result in a net increase in long-term operational criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended thresholds of 65 lb/day for ROG and NO_X, 80 lb/day and 14.6 tons/year for PM_{10}, and 82 lb/day and 15 tons/year for $PM_{2.5}$;
- Result in long-term operational local mobile-source CO emissions that would violate or contribute substantially to concentrations that exceed the 1-hour CAAQS of 20 parts per million or the 8-hour CAAQS of 9 parts per million;
- Expose sensitive receptors to a substantial incremental increase in TAC emission-related health risks that exceed 10 in 1 million for carcinogenic risk (e.g., the risk of contracting cancer) and/or a noncarcinogenic hazard index of 1.0 or greater; or
- Create objectionable odors affecting a substantial number of people.

3.9.3 Impact Analysis

3.9.3.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the Proposed Action would not be implemented, and the Sacramento metropolitan area would experience no change in the present level of risk of flooding due to levee failure due to seepage, slope stability, overtopping, or other erosion concerns.

Under these conditions, a flood event could cause portions of the levees to fail, possibly triggering widespread flooding and related damage. If a catastrophic flood were to occur, emergency responders would initiate flood fighting and clean-up efforts, probably involving the operation of numerous pieces of heavy-duty construction equipment. Air pollutants emitted by this equipment could contribute to an exceedance of an applicable air quality standard, expose sensitive receptors to substantial pollutant concentrations, and create objectionable odors. Depending on the magnitude of a flood, flood fighting could last for weeks or even months. Moreover, the application of best management practices to control emissions would be unlikely during such an emergency response. All of these effects on air quality could be significant; however, the timing, duration, and magnitude of a flood event is unpredictable, and therefore precise significance determination cannot be made.

3.9.3.2 Proposed Action

Construction Emissions

The ARCF GRR FEIS/FEIR Section 3.11 (pages 240 through 245) analyzed the impacts on air quality in the Project Area. Emission sources would include the operation of off-road construction equipment, on-road vehicles traveling to and from the site during construction phasing, haul truck trips, and fugitive dust associated with earth movement and soil-disturbance activities. The Proposed Action would generate emissions from all of these construction activities.

As discussed above in Section 3.9.2.1, *Methodology*, construction emissions were evaluated with the assumption that haul trucks would have a 10-cy capacity. Total maximum daily emissions for 2022 and 2023 were estimated for ROG, NOX, CO, PM10, and PM2.5 and evaluated against SMAQMD's thresholds and presented in **Table 3-12A** and **Table 3-12B** for daily and annual emissions.

As shown in Table 3-12A, construction-related emissions under the Proposed Action, which includes reductions associated with project commitments of higher tiered engines, would exceed SMAQMD's mass daily emission threshold for NOX, PM10, and PM2.5 in 2023 and would exceed the mass daily emission threshold for PM10 and PM2.5 in 2022 and 2023. USACE would be required to pay an off-site mitigation fee for NOX emissions to reduce the impact to a less-than-significant level. As shown in Table 3-12B, construction-related emissions from the Proposed Action would not exceed SMAQMD's annual emissions de minimus levels.

TABLE 3-12A
ARCF 2016 PROJECT, AMERICAN RIVER CONTRACT 3A CONSTRUCTION EMISSIONS

Maximum Construction Activity	Maximum Daily ROG Emissions (lb/day)[1]	Maximum Daily NO_X Emissions (lb/day)[1]	Maximum Daily CO Emissions (lb/day)[1]	Maximum Daily PM_{10} Emissions (lb/day)[1]	Maximum Daily $PM_{2.5}$ Emissions (lb/day)[1]
2022	<1	<1	<1	<1	<1
Exceed Threshold?	N/A	No	N/A	Yes	Yes
2023	4	176	20	47	6
Exceed Threshold?	N/A	Yes	N/A	Yes	Yes
CEQA Threshold	N/A	85	N/A	0[2]	0[2]

NOTES:

1 Estimates represent a worst-case construction conditions which was assumed to be from July to October 2022. For annual emissions and a comparison to Federal *de minimis* levels, see Appendix D.

2 SMAQMD has a zero pound per day threshold of PM, when best available controls are not implemented but threshold with incorporated controls are 80 lb/day for PM_{10} and 82 lb/day for $PM_{2.5}$

SOURCE: Modeling conducted by Ascent Environmental in 2021.

TABLE 3-12B
ARCF 2016 PROJECT, AMERICAN RIVER CONTRACT 3A CONSTRUCTION ANNUAL EMISSIONS

Maximum Construction Activity	ROG Emissions (tons/year)	NO_X Emissions (tons/year)	CO Emissions (tons/year)	PM_{10} Emissions (tons/year)	$PM_{2.5}$ Emissions (tons/year)
2022	<1	<1	<1	<1	<1
Exceed De Minimis Level?	No	No	No	No	No
2023	0.27	9.76	3.22	<1	<1
Exceed De Minimis Level?	No	No	No	No	No
De Minimis Level	25[1]	25[1]	100	100[2]	100[3]

NOTES:

1 VOCs/NOx levels for serious nonattainment areas for ozone

2 PM_{10} levels for all maintenance areas

3 $PM_{2.5}$ (2012) standard in attainment; thus higher de minimis level for moderate nonattainment areas used.

SOURCES:

EPA. 2021. De Minimis Tables. General Conformity. Last updated on July 22, 2021. Available: https://www.epa.gov/general-conformity/de-minimis-tables. Accessed: June 20, 2022.

EPA. 2022a. Nonattainment Areas for Criteria Air Pollutants (Green Book). Green Book 8-Hour Ozone (2015) Area Information. 8-Hour Ozone (2015) Designated State/Area/County Report. Last updated on May 21, 2022. Available: https://www3.epa.gov/airquality/greenbook/jbcs.html#CA. Accessed: June 20, 2022.

EPA. 2022b.Nonattainment Areas for Criteria Air Pollutants (Green Book). Green Book PM-10 (1987) Area Information. PM-10 (1987) Designated Area State/Area/County Report. Last updated on May 31, 2022. Available: https://www3.epa.gov/airquality/greenbook/pbcs.html#CA. Accessed: June 20, 2022.

EPA. 2022c.Nonattainment Areas for Criteria Air Pollutants (Green Book). Green Book PM-2.5 (2012) Area Information. PM-2.5 (2012) Designated Area State/Area/County Report. Last updated on May 31, 2022. Available: https://www3.epa.gov/airquality/greenbook/pbcs.html#CA. Accessed: June 20, 2022.

The Strategic Area Project Health Effects Tool was used to evaluate potential health effects of mass emissions associated with implementation of the Proposed Action. The outputs reflect the potential increase in premature death over the background health incidence rate of each health endpoint in the region.[88] The outputs of the SMAQMD's Strategic Area Project Health Effects tool for the general geographic location of the Proposed Action indicate that ozone and $PM_{2.5}$ exposure across the 5-air-district region would result in mortality of up to 20.7 persons per year above background health incidences of 75,000 mortality incidences per year, or an increase of about 0.011 percent of background incidences.

Table 3-11 summarizes the anticipated health effects in the region from the Proposed Action's emissions.

Consistent with SMAQMD's Guidance to Address the Friant Ranch Decision, the outputs summarized in Table 3-11 should be presented in the context of the current population of Sacramento County. From 2017–2019, Sacramento County experienced an annual average of 11,914 deaths from all causes (not limited to air pollution–related mortality).[89] Using the Strategic Area Project Health Effects Tool, this total number could be increased by an annual average of 6 persons per year from increased exposure to ground-level ozone and $PM_{2.5}$ from emissions generated by the Proposed Action as shown in Table 3-11.

Notably, the Strategic Area Project Health Effects Tool provides conservative health estimates for two reasons. The Strategic Area Project Health Effects Tool assumes that persons would be exposed to a full year of pollution at the maximum levels on a daily basis. Additionally, the Strategic Area Project Health Effects Tool assumes that a project will have emissions two to eight times SMAQMD's thresholds of significance.

The Proposed Action would generate daily mass emissions above SMAQMD's thresholds of significance; however, the estimates presented in Table 3-12 reflect a worst-case construction day where several pieces of equipment are expected to operate concurrently. Construction would not occur at those high levels every day; however, as stated above, the Strategic Area Project Health Effects Tool assumes that all persons in Sacramento County will be exposed to these levels of emissions for a full year, which would not be the case in actuality.

Additionally, the Proposed Action would not generate emissions of NO_X up to eight times SMAQMD's thresholds of significance. Thus, the outputs of the Strategic Area Project Health Effects Tool are inherently conservative. Nonetheless, the findings of the Strategic Area Project Health Effects Tool are presented above in Table 3-11 to provide information to the public that allow for a meaningful understanding of the Proposed Action's contribution of air pollution in Sacramento County.

88 Sacramento Metropolitan Air Quality Management District. 2020 (October). Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District. Available: Available: http://www.airquality.org/LandUseTransportation/Documents/SMAQMDFriantRanchFinalOct2020.pdf. Accessed December 22, 2021.

89 California Department of Public Health. 2021. County Health Status Profile. Available: https://data.chhs.ca.gov/dataset/county-health-status-profiles/resource/3781a514-d658-4779-abb5-3c71e15c1944. December 22, 2021.

As shown above, construction-generated exhaust emissions of NO_X would exceed SMAQMD's mass daily threshold of 85 lb/day. This impact would be significant; however, implementation of mitigation measures would reduce NO_X emissions to a less-than-significant level and, therefore, result in no adverse health effects.

Fugitive Dust

Construction of the Proposed Action would result in short-term dust emissions from grading and earth moving activities at the project construction sites and the soil borrow sites. The amount of dust generated would be highly variable and is dependent on the size of the disturbed area at any given time, amount of activity, soil conditions, and meteorological conditions. Nearby land uses, especially those residences and schools located downwind of the project sites could be exposed to dust generated during construction activities, indirectly resulting in potential adverse health effects associated with exposure to high concentrations of PM. This indirect effect would be significant, but implementation of mitigation measures set forth below would reduce dust emissions during construction to a less-than-significant level.

Toxic Air Contaminants

Construction of the Proposed Action would result in short-term diesel particulate emissions from on-site heavy-duty equipment and on-road haul trucks. Diesel PM, which is classified as a carcinogenic TAC by CARB, is the primary pollutant of concern regarding indirect health risks to sensitive receptors. Nearby land uses, especially residences and schools downwind of the project sites, could be exposed to diesel PM during construction activities, resulting in potential adverse health effects.

The assessment of health risks associated with exposure to diesel exhaust typically is associated with chronic exposure, in which a 70-year exposure period is often assumed. However, while cancer can result from exposure periods of less than 70 years, acute exposure periods (i.e., exposure periods of 2 to 3 years) to diesel exhaust are not anticipated to result in increased health risk, as health risks associated with exposure to diesel exhaust are typically seen in exposure periods that are chronic.[90] Construction activities that would require diesel-powered heavy-duty equipment associated with the Proposed Action are not expected to be used for more than 18 months. Further, construction activities of the Proposed Action would not occur over a prolonged period in any one specific location, minimizing exposure from diesel PM at any one receptor. Additionally, as required by 13 CCR Section 2449(d)(3), no in-use off-road diesel vehicles may idle for more than 5 consecutive minutes. Nonetheless, an HRA was prepared for the Proposed Action and is appended to this Supplemental EIR in Appendix D.

As discussed above in the *Methodology* section, two separate hauling scenarios were modeled for the HRA; Scenario 1: Haul Route North and Scenario 2: Haul Route South. As

[90] Office of Environmental Health Hazard Assessment. 2015. Guidance Manual for Preparation of Health Risk Assessments. Available: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed January 27, 2021.

detailed in Appendix D, construction of the Proposed Action would result in a maximum risk exposure (chances in 1 million for carcinogenic risk) of 1.66 for Scenario 1: Haul Route North and 1.57 for Scenario 2: Haul South. The estimated risk presented here represents the point of maximum exposure (PMI), which does not exceed the SMAQMD-adopted thresholds of significance of an incremental cancer risk of 10 in a million. Therefore, values would not exceed the applicable threshold at any other nearby receptors. Thus, no sensitive receptor would be exposed to substantial TAC concentrations. Because these values do not exceed 10 in 1 million, exposure of sensitive receptors to TACs would not be considered substantial. Moreover, the Proposed Action would apply SMAQMD-recommended construction mitigation which would further reduce emissions of TACs. For these reasons, and the reasons listed above, this impact would be less than significant.

Odors

The Proposed Action would not result in any major source of odor, and the project would not involve operation of any of the common types of facilities that are known to produce odors (e.g., landfill, wastewater treatment facility). Odors associated with diesel exhaust emissions from the use of construction equipment may be noticeable from time to time by nearby receptors. However, the odors would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. Further, as required by 13 CCR Section 2449(d)(3), no in-use off-road diesel vehicles may idle for more than 5 consecutive minutes. Therefore, this impact would be less than significant.

Operation and Maintenance

Long-term operational and maintenance activities under the Proposed Action would result in limited emissions of criteria air pollutants and precursors from the use of on-road vehicles on the levees for inspection and maintenance activities, mowing grasses on the levees, and possibly limited heavy earth-moving equipment for repair of any damage to the site. These emissions would be limited to a temporary time frame once or twice per year. Any emissions that result from long-term operational and maintenance activities would not exceed SMAQMD or *de minimis* thresholds and would be less than significant.

ARCF GRR FEIS/FEIR Mitigation Measures

All the following mitigation measures were presented in the ARCF GRR FEIS/FEIR (pages 251 to 254) but have been revised and updated to demonstrate consistency with the most current SMAQMD recommendations. The measure to install wind breaks by planting trees or installing fences at the upstream end of construction areas was not incorporated in the Proposed Action, because it is not a practical measure for a linear construction project consisting of multiple multi-thousand-foot construction areas. Mitigation measures incorporated into the Proposed Action are as follows:

> **Mitigation Measure AQ-1: Implement SMAQMD's Basic Construction Emissions Control Practices.** SMAQMD requires construction projects to implement basic construction emissions control practices to control fugitive dust

and diesel exhaust emissions.[91] USACE would implement the following control measures during project construction:

- Control fugitive dust as required by SMAQMD Rule 403 and enforced by SMAQMD staff.
- Water all exposed surfaces twice daily. Exposed surfaces include but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would travel along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible track-out of mud or dirt from adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Complete all roadways, driveways, sidewalks, or parking lots to be paved as soon as possible. In addition, lay building pads as soon as possible after grading unless seeding or soil binders are used.
- Limit vehicle speeds on unpaved roads to 15 miles per hour.
- Minimize idling time, either by shutting equipment off when not in use or by reducing the time of idling to 5 minutes (required by 13 CCR Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the site entrances.
- Maintain all construction equipment in proper working condition according to the manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.

Mitigation Measure AQ-2: Implement Enhanced Fugitive Dust Control Practices. Fugitive dust mitigation for the project would require the use of adequate measures during each construction activity and would include frequent application of water or application of soil additives, control of vehicle access, and vehicle speed restrictions. USACE would implement the dust mitigation measures listed below.[92]

- Water exposed soil with adequate frequency for continued moist soil; however, do not overwater to the extent that sediment flows from the site.

91 Sacramento Metropolitan Air Quality Management District. 2019. Basic Construction Emissions Control Practices. Available: http://www.airquality.org/LandUseTransportation/Documents/Ch3BasicEmissionControlPractices BMPSFinal7-2019.pdf. Accessed December 22, 2021.

92 Sacramento Metropolitan Air Quality Management District. 2009. Enhanced Fugitive PM Dust Control Practices. Available: http://www.airquality.org/LandUseTransportation/Documents/Ch3EnhancedFugitiveDustControl FINAL12-2009.pdf. Accessed December 22, 2021.

- Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 miles per hour.
- Plant vegetative ground cover (fast-germinating native grass seed) in disturbed areas as soon as possible.
- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the site.
- Treat site access to 100 feet from the paved road with a 6- to 12-inch layer of wood chips, mulch, or gravel to reduce generation of road dust and road dust carryout onto public roads.
- Post a publicly visible sign identifying the telephone number and person to contact at the lead agency regarding dust complaints. This person would respond and take corrective action within 48 hours. To ensure compliance, SMAQMD's phone number would also be visible.

Mitigation Measure AQ-3: Develop and Implement a Plan for Enhanced On-Site Exhaust Controls.[93] Actual emissions of nonattainment and maintenance pollutants would be tracked monthly using tools acceptable to SMAQMD (e.g., construction mitigation calculator, SMAQMD's Equipment List). USACE shall submit to SMAQMD a comprehensive inventory of all off-road construction equipment (50 horsepower or more) to be used 8 hours or more during project construction. The tracking data would be used to verify that all pollutants remain below the CEQA daily thresholds, General Conformity *de minimis* thresholds, or are fully mitigated and offset if emissions exceed either.

The initial report would include all the following details:

- Information about the project information and the construction company.
- The equipment type, horsepower rating, engine model year, projected hours of use, and CARB equipment identification number for each piece of equipment in the plan.
- All owned, leased, and subcontracted equipment to be used.

Updated reports would be submitted monthly to demonstrate continued project compliance.

SMAQMD may conduct periodic site inspections to determine compliance. Nothing in this mitigation would supersede other air district, state, or federal rules or regulations.

93 Sacramento Metropolitan Air Quality Management District. 2019.Enhanced On-Site Exhaust Controls. Available: http://www.airquality.org/LandUseTransportation/Documents/Ch3On-SiteEnhancedExhaustMitigationFinal4-2019.pdf. Accessed December 22, 2021.

Mitigation Measure AQ-4: Use Electric Construction Equipment. To the extent available and feasible, construction equipment would be powered by electricity, rather than diesel fuel, which would reduce construction-related criteria air pollutants, TACs, and tailpipe GHG emissions associated with diesel fuel combustion.

Mitigation Measure AQ-5: Pay NO_X Mitigation Fee to SMAQMD. The contractor would pay the appropriate SMAQMD-required NO_X mitigation fee to offset the project's NO_X emissions when they exceed SMAQMD's threshold of 85 lb/day only if USACE does not pay the mitigation fee through the General Conformity Determination during the year of construction. The NO_X mitigation fee would apply to all emissions from the Proposed Action: on-road (on- and off-site), off-road, portable, stationary equipment, and vehicles.

Summary

Implementation of the mitigation measures contained in the ARCF GRR FEIS/EIR would reduce construction-generated NO_X emissions to a less-than-significant level that would not result in adverse health effects. In addition, with incorporation of dust control measures, PM (fugitive dust) emissions would be further reduced (i.e., by up to 75 percent) and would not exceed applicable SMAQMD thresholds or result in adverse health effects. The application of BMPs combined with engagement in SMAQMD's NO_X mitigation fee program or offsets obtained through purchase or loan would be sufficient to reduce emissions to zero, in accordance with the Clean Air Act for projects that exceed *de minimis* levels, and consequently below SMAQMD's recommended daily mass emissions threshold of 85 lb/day. Emissions of ROG, PM_{10}, and $PM_{2.5}$ would additionally be reduced through the application of the mitigation measures. As discussed in the General Conformity Determination, included in **Appendix F**, the project would be in conformity with the Clean Air Act and would not cause or contribute to a new violation, nor increase the frequency or severity of existing violations of the NAAQS. Based on the conformity analysis, no exceedance of the *de minimis* thresholds in 2023 would occur. Construction-related air quality impacts would be less than significant with mitigation.

3.10 Greenhouse Gas Emissions and Energy Consumption

3.10.1 Environmental Setting

3.10.1.1 Regulatory Setting

Section 3.12 (page 254) of the ARCF GRR FEIS/FEIR identifies applicable federal, state, and local environmental laws and regulations that apply to regulating greenhouse gas (GHG) emissions. Chapter 5 of the ARCF GRR FEIS/FEIR summarized the environmental laws and regulations that apply to the Proposed Action and described the status of compliance with those laws and regulations. Additional applicable laws and regulations related to GHG emissions are summarized below.

The ARCF GRR FEIS/FEIR did not evaluate potential adverse energy impacts. Therefore, this chapter presents the applicable federal, state, and local environmental laws and regulations that pertain to energy demand, consumption, and generation. Energy-related impacts are evaluated in Section 3.10.3.

Federal

Energy Policy and Conservation Act and Corporate Average Fuel Economy Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic Safety Administration (NHTSA), part of the U.S. Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

Under the Energy Independence and Security Act of 2007 (described below), the CAFE standards were revised for the first time in 30 years then later updated in 2012 and 2019.

Energy Policy Act of 1992 and 2005

The Energy Policy Act of 1992 (EPAct) was enacted to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain Federal, State, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs. The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a Federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 is designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It represents a major step forward in expanding the production of renewable fuels, reducing dependence on oil, and confronting global climate change. The Energy Independence and Security Act of 2007 increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels; and reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020—an increase in fuel economy standards of 40 percent.

By addressing renewable fuels and the CAFE standards, the Energy Independence and Security Act of 2007 builds upon progress made by the Energy Policy Act of 2005 in setting out a comprehensive national energy strategy for the 21st century; however, on

August 2, 2018, the NHSTA and EPA proposed the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE Rule) (49 Code of Federal Regulations [CFR] 523, 531, 533, 536, and 537 and 40 CFR 85 and 86). This rule addresses emissions and fuel economy standards for motor vehicles and is separated in two parts as described below.

Part One, "One National Program" (84 *Federal Register* [FR] 51310), revokes a waiver granted by EPA to the State of California under Section 209 of the CAA to enforce more stringent emission standards for motor vehicles than those required by EPA for the explicit purpose of greenhouse gas (GHG) reduction and, indirectly, criteria air pollutants and ozone precursor emission reduction. This revocation became effective on November 26, 2019, restricting the ability of the California Air Resources Board (CARB) to enforce more stringent GHG emission standards for new vehicles and set zero-emission-vehicle mandates in California.[94] EPA released a Notice of Reconsideration of Part One of the SAFE Rule on April 26, 2021 for public input which ended on June 6, 2021.[95]

Part Two addresses CAFE standards for passenger cars and light trucks for model years 2021–2026. This rulemaking proposes new CAFE standards for model years 2022–2026 and would amend existing CAFE standards for model year 2021. The proposal would retain the model year 2020 standards (specifically, the footprint target curves for passenger cars and light trucks) through model year 2026, but comment is sought on a range of alternatives discussed throughout the proposed rule. This proposal addressing CAFE standards is being jointly developed with EPA, which is simultaneously proposing tailpipe carbon dioxide standards for the same vehicles covered by the same model years.

At the time of writing this Draft EIR, the provision of Parts One and Two of the SAFE Rule are still in effect; however, pending litigation, the SAFE Rule may not be in effect once construction of the Proposed Action commences. The analysis herein is therefore inherently conservative.

State

Statewide Greenhouse Gas Emissions Targets and the Climate Change Scoping Plan

Reducing GHG emissions in California has been the focus of the state government for approximately two decades. GHG emission targets established by the State Legislature include reducing statewide GHG emissions to 1990 levels by 2020 (Assembly Bill [AB] 32 of 2006) and reducing them to 40 percent below 1990 levels by 2030 (Senate Bill [SB] 32 of 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050. Executive Order B-55-18 calls for California to achieve carbon neutrality by 2045 and achieve and maintain net negative GHG emissions

94 National Highway Traffic Safety Administration. 2019. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One Nation Program. 49 CFR Parts 531 and 533. Available: https://www.federalregister.gov/documents/2019/09/27/2019-20672/the-safer-affordable-fuel-efficient-safe-vehicles-rule-part-one-one-national-program. Accessed December 22, 2021.

95 U.S. Environmental Protection Agency. 2021 (April 26). EPA Reconsiders Previous Administration's Withdrawal of California's Waiver to Enforce Greenhouse Gas Standards for Cars and Light Trucks. Available: https://www.epa.gov/newsreleases/epa-reconsiders-previous-administrations-withdrawal-californias-waiver-enforce. Accessed December 22, 2021.

thereafter. These targets are in line with the scientifically established levels needed in the United States to limit the rise in global temperature to no more than 2 degrees Celsius, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected; these targets also pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.[96]

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by CARB, outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and "substantially advance toward our 2050 climate goals."[97] It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste). CARB and other state agencies also released the January 2019 Draft California 2030 Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal of Executive Order B-55-18.[98]

The state has also passed more detailed legislation addressing GHG emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized below.

Warren-Alquist Act

The 1974 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The creation of the act occurred as a response to the state legislature's review of studies projecting an increase in statewide energy demand, which would potentially encourage the development of power plants in environmentally sensitive areas. The act introduced state policy for siting power plants to reduce potential environmental impacts, and additionally sought to reduce demand for these facilities by directing CEC to develop statewide energy conservation measures to reduce wasteful, inefficient, and unnecessary uses of energy. Conservation measures recommended establishing design standards for energy conservation in buildings that ultimately resulted in the creation of the Title 24 Building Energy Efficiency Standards, which have been updated regularly and remain in effect today. The act additionally directed CEC to cooperate with the Governor's Office of Planning and Research, the California Natural Resources Agency, and other interested parties in ensuring that a discussion of wasteful, inefficient, and unnecessary consumption of energy is included in all environmental impact reports required on local projects.

96 United Nations. 2015. Paris Agreement. Available: https://unfccc.int/sites/default/files/english_paris_agreement.pdf. Accessed January 26, 2021.

97 California Air Resources Board. 2017 (November). California's 2017 Climate Change Scoping Plan. Available: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. Accessed December 22, 2021. pp. 1, 3, 5, 20, and 25–26.

98 California Environmental Protection Agency, California Natural Resources Agency, California Department of Food and Agriculture, California Air Resources Board, and California Strategic Growth Council. 2019 (January). *Draft California 2030 Natural and Working Lands Climate Change Implementation Plan.* Available: https://ww3.arb.ca.gov/cc/natandworkinglands/draft-nwl-ip-1.3.19.pdf. Accessed December 22, 2021.

State of California Energy Action Plan

CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 2003 California Energy Action Plan (2008 update).[99] The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban design that reduces vehicle miles traveled (VMT) and accommodates pedestrian and bicycle access.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to AB 2076 (Chapter 936, Statutes of 2000), CEC and CARB prepared and adopted a joint agency report in 2003, *Reducing California's Petroleum Dependence.* Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT.[100] Further, in response to CEC's 2003 and 2005 *Integrated Energy Policy Reports*, Governor Davis directed CEC to take the lead in developing a long-term plan to increase alternative fuel use.

A performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand by 2030.

Integrated Energy Policy Report

SB 1389 (Chapter 568, Statutes of 2002) required CEC to: "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety" (Public Resources Code Section 25301[a]). This work culminated in the Integrated Energy Policy Report (IEPR).

CEC adopts an IEPR every 2 years and an update every other year. The 2020 IEPR Update, which is the most recent IEPR, was adopted March 23, 2021. The 2020 IEPR Update provides a summary of priority energy issues currently facing the state, outlining strategies and recommendations to further the State's goal of ensuring reliable, affordable, and environmentally responsible energy sources. Energy topics covered in the report include progress toward statewide renewable energy targets and issues facing future renewable development; efforts to increase energy efficiency in existing and new buildings; progress by utilities in achieving energy efficiency targets and potential;

[99] California Energy Commission and California Air Resources Board. 2003. Reducing California's Petroleum Dependence. Available: https://ww3.arb.ca.gov/fuels/carefinery/ab2076final.pdf. Accessed December 22, 2021.

[100] California Energy Commission and California Air Resources Board. 2003. Reducing California's Petroleum Dependence. Available: https://ww3.arb.ca.gov/fuels/carefinery/ab2076final.pdf. Accessed December 22, 2021.

improving coordination among the state's energy agencies; streamlining power plant licensing processes; results of preliminary forecasts of electricity, natural gas, and transportation fuel supply and demand; future energy infrastructure needs; the need for research and development efforts to statewide energy policies; and issues facing California's nuclear power plants.[101]

Legislation Associated with Electricity Generation

The state has passed multiple pieces of legislation requiring the increasing use of renewable energy to produce electricity for consumers. California's Renewable Portfolio Standard (RPS) Program was established in 2002 (SB 1078) with the initial requirement to generate 20 percent of their electricity from renewable by 2017, 33 percent of their electricity from renewables by 2020 (SB X1-2 of 2011), 52 percent by 2027 (SB 100 of 2018), 60 percent by 2030 (also SB 100 of 2018), and 100 percent by 2045 (also SB 100 of 2018).

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other Federal, State, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation to public health and environmental quality.

Executive Order S-06-06

Executive Order S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The Executive Order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The Executive Order also calls for the state to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 plan and provides a more detailed action plan to achieve the following goals:

- Increase environmentally and economically sustainable energy production from organic waste.

[101] California Energy Commission. 2021. Final 2020 Integrated Energy Policy Report Update. Submission date: March 23, 2021. Available: https://efiling.energy.ca.gov/getdocument.aspx?tn=237268. Accessed December 22, 2021.

- Encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications.
- Create jobs and stimulate economic development, especially in rural regions of the state.
- Reduce fire danger, improve air and water quality, and reduce waste.

As of 2020, 2.44 percent of the total electricity system power in California was derived from biomass.[102]

Local

Sacramento Metropolitan Air Quality Management District

SMAQMD provides guidance to lead agencies for conducting GHG analyses under CEQA and is currently in the process of updating their guidance and thresholds of significance for GHG emissions. In February 2021, SMAQMD adopted the final version of the *Greenhouse Gas Thresholds for Sacramento County* guidance document. The final guidance document provides recommendations for thresholds that can be applied to construction and operational activities, and provides a tailored approach for land use development projects. However, the Proposed Project does not fit the criterion of being a land use development project; therefore, the construction thresholds of significance identified by SMAQMD will be applied in this analysis.[103]

3.10.1.2 Existing Conditions

The ARCF GRR FEIS/FEIR Section 3.12 (pages 255 through 260) describes the regional and local setting in the vicinity of the Project Area. The ARCF GRR FEIS/FEIR did not include a summary of the environmental setting as it pertains to energy resources. Therefore, a summary is provided below.

Electricity and Natural Gas Use

Electric services are provided to the City from Sacramento Municipal Utility District (SMUD). Natural gas is supplied to the City from Pacific Gas and Electric (PG&E).

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. One-third of energy commodities consumed in California is natural gas. In 2020, approximately 37 percent of natural gas consumed in the state was used to generate electricity. Large hydroelectric powered approximately 12 percent of electricity and renewable energy from solar, wind,

[102] California Energy Commission. 2021. Total System Electric Generation. Available: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation. Accessed December 22, 2021.

[103] Sacramento Metropolitan Air Quality Management District. 2021 (February). Greenhouse Gas Emissions. Available: http://www.airquality.org/LandUseTransportation/Documents/Ch6GHG2-26-2021.pdf. Accessed December 22, 2021.

small hydroelectric, geothermal, and biomass combustion totaled 33 percent.[104] In 2020, SMUD provided its customers with 34 percent eligible renewable energy (i.e., biomass combustion, geothermal, small scale hydroelectric, solar, and wind) and 29 percent and 35 percent from large scale hydroelectric and natural gas, respectively.[105] The contribution of in- and out-of-state power plants depends on the precipitation that occurred in the previous year, the corresponding amount of hydroelectric power that is available, and other factors. SMUD is the primary electricity and natural gas service provider in Sacramento County.

The proportion of SMUD-delivered electricity generated from eligible renewable energy sources is anticipated to increase over the next three decades to comply with the SB 100 goals, as described in Section 3.10.1.

Energy Use for Transportation

In 2019, the transportation sector comprised the largest end-use sector of energy in the state totaling 39.3 percent, followed by the industrial sector totaling 23.2 percent, the commercial sectors at 18.9 percent, and the residential sector of 18.7 percent.[106] On-road vehicles use about 90 percent of the petroleum consumed in California. CEC reported retail sales of 689 million and 44 million gallons of gasoline and diesel, respectively, in Sacramento County in 2020 (the most recent data available).[107] The California Department of Transportation projects that 996 million gallons of gasoline and diesel will be consumed in Sacramento County in 2030.[108]

3.10.2 Methodology and Basis of Significance

3.10.2.1 Methodology

This analysis generally uses the same methodology described in Section 3.12 (pages 261 through 262) of the ARCF GRR FEIS/FEIR. That analysis focused on evaluating GHG impacts from construction activities because operation and maintenance activities are part of the existing environmental baseline and thus would not create a substantial source of new emissions. Where significant climate change impacts are identified, mitigation measures to reduce these impacts are specified.

[104] California Energy Commission. 2021. Total System Electric Generation. Available: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation. Accessed December 22, 2021.

[105] Sacramento Metropolitan Utility District. 2021. 2020 Power Content Label. Available: https://www.smud.org/SMUDPCL. Accessed December 22, 2021.

[106] U.S. Energy Information Administration. 2021. California Energy Consumption by End-Use Sector, 2019. Available: https://www.eia.gov/state/?sid=CA#tabs-2. Accessed December 22, 2021.

[107] California Energy Commission. 2021. California Annual Retail Fuel Outlet Report Results Spreadsheets. Available: https://www.energy.ca.gov/media/3874. Accessed December 22, 2021.

[108] California Department of Transportation. 2008. 2007 California Motor Vehicle Stock, Travel, and Fuel Forecast. Available: https://planning.lacity.org/eir/8150Sunset/References/6.0.%20Other%20CEQA%20Considerations/OTHER.03_2008%20California%20Motor%20Vehicle%20Stock,%20Travel%20and%20Fuel%20Forecast.pdf. Accessed January December 22, 2021.

GHG emissions from project construction would result from fuel usage by off-road equipment, on-road vehicles, electricity consumption by office trailers, and delivery of materials. The project's potential GHG impact was analyzed using a conservative construction scenario to estimate the maximum construction emissions generated.

A variety of methods and emissions modeling software were used to quantify criteria air pollutants, described in Section 3.9, *Air Quality*. The emission factors and models described there were also used to quantify GHG emissions. GHG emissions were summed over the duration of all anticipated activity, including the use of heavy-duty equipment, haul trucks, and worker commute trips. All inputs and assumptions are included in Appendix D.

The ARCF GRR FEIS/FEIR did not evaluate potential energy impacts. The 2018 revisions to the State CEQA Guidelines amended Appendix G to include potentially significant impacts related to energy consumption. Total gallons of diesel and gasoline were estimated for the Proposed Action using assumptions derived from CalEEMod and EMFAC.

3.10.2.2 Basis of Significance

This analysis uses a basis of significance described in in Section 3.12 (pages 262 through 263) of the ARCF GRR FEIS/FEIR, as restated below. The ARCF GRR FEIS/FEIR did not evaluate potential energy impacts, and significance thresholds were added for energy consumption.

The Proposed Action would result in a significant effect related to GHG emissions and energy consumption if it would:

- Conflict with an applicable plan adopted for the purpose of reducing GHG emissions.

SMAQMD has local jurisdiction over the Project Area. On October 23, 2014, the SMAQMD adopted GHG thresholds, which were informed by the California Air Pollution Control Officers Association, "CEQA and Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act" Document.[109] As noted in Section 3.10.1, SMAQMD adopted new thresholds of significance for GHG impacts; however, the February 2021 Final *Greenhouse Gas Thresholds for Sacramento County* guidance document is best applied to land use development projects, of which the Proposed Action is not.

Therefore, the mass-emissions thresholds for construction projects developed by SMAQMD using substantial evidence will continue to serve as the basis of determining the significance of the Proposed Action with respect to climate change impacts.

Based on the CEQA guidelines established by each air district, SMAQMD recommends quantifying and disclosing GHG emissions from construction activities; making a

[109] California Air Pollution Control Officers Association. 2008. CEQA and Climate Change. Available: http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf. Accessed December 22, 2021.

determination regarding the significance of these GHG emissions based on a threshold determined by the lead agency; and incorporating applicable BMPs to reduce GHG emissions during construction, as feasible and applicable. Based on the CEQA Guidelines and guidance provided by SMAQMD, the Proposed Action would have a significant contribution to global climate change if the project would:

- generate emissions of GHGs from construction activities exceeding 1,100 metric tons of carbon dioxide equivalent per year (MTCO2e/year).

Since publication of the ARCF GRR FEIS/FEIR, changes to Appendix G of the State CEQA Guidelines have been adopted that identify criteria for evaluating potentially significant energy impacts. As a result, this analysis also takes into consideration the following additional or modified significance criteria:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
- Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Effects Not Evaluated Further

The Proposed Action would involve short-term construction activities to improve levee structures along the American River. Once construction activities are complete (approximately 1.5 years), emissions-generating activities would cease. Operational activities may require maintenance crews visiting the site for short periods of time. However, these activities occur now, and therefore, the Proposed Action would not result in any long-term increase in GHG emissions. This issue is not discussed further.

3.10.3 Impact Analysis

3.10.3.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the Proposed Action would not be implemented, and the Sacramento metropolitan area would experience no change in the present level of risk of flooding due to levee failure from seepage, slope stability, overtopping, or other erosion concerns.

Under these conditions, a flood event could cause portions of the levees to fail, triggering potentially widespread flooding and related damage. If a catastrophic flood were to occur, emergency flood fighting and clean-up efforts would involve the operation of heavy-duty construction equipment that would consume diesel fuel and emit GHGs. Timing and duration of use would correlate with flood fighting needs, but pollutants from this equipment could generate a notable amount of GHG emissions and fuel consumption. Depending on the magnitude of a flood, flood fighting could last for weeks or even months. All of these effects on GHG emissions would be considered significant; however, the timing, duration, and magnitude of a flood event is unpredictable and a precise significance determination cannot be made.

3.10.3.2 Proposed Action

Greenhouse Gas Emissions

The ARCF GRR FEIS/FEIR Section 3.12 (pages 261 through 266) analyzed the impacts on GHG emissions and energy consumption in the Project Area. Construction emissions associated with site-related activities and off-site commute and haul truck trips were estimated based on the emission rates and assumptions described in Section 3.9, *Air Quality*. Emission sources associated with Proposed Action-related activities include the off-road construction equipment operating in Project Area, on-road vehicles, and haul trucks traveling to and from the Project Area. As summarized in Section 3.9, *Air Quality*, GHG emissions and fuel consumption were estimated using the assumption that haul trucks with a capacity to move 32 cubic yards (cy) would be used for all construction activities. Total annual GHG emissions (expressed in $MTCO_2e$/year) for the Proposed Action are summarized by year and are shown in **Table 3-13**.

As shown in Table 3-13, construction-related GHG emissions caused by the Proposed Action would exceed SMAQMD's mass emission construction threshold of 1,100 $MTCO_2e$/year in 2023. This would constitute a significant climate change impact. Notably, however, the Proposed Action would increase the likelihood that the flood management system could accommodate future flood events because of climate change. Consequently, the Proposed Action would improve the resiliency of the levee system with respect to changing climatic conditions, potentially reducing exposure of property or persons to the effects of climate change. Nevertheless, because the Proposed Action would exceed the 1,100 $MTCO_2e$/year threshold established by SMAQMD, climate change impacts would be significant; however, this impact would be reduced to a less-than-significant level with mitigation that would require the purchase of GHG offsets, effectively reducing emission to the SMAQMD threshold of significance.

TABLE 3-13
ARCF 2016 PROJECT, AMERICAN RIVER CONTRACT 2
CONSTRUCTION GREENHOUSE GAS EMISSIONS (SCENARIO 1)

Construction Year	Total GHG Emissions ($MTCO_2e$/year)
2022	6
Exceed Threshold?	No
2023	3,536
Exceed Threshold?	Yes
CEQA Threshold	1,100

NOTE:
$MTCO_2e$/year = metric tons of carbon dioxide per year

SOURCE: Modeling performed by Ascent Environmental in 2021.

Energy

Construction of the Proposed Action would result in an increase in fuel consumption as compared to baseline conditions. Gasoline would be consumed from worker commute trips to and from the Project Area. Diesel fuel would be required to operate heavy-duty diesel-powered construction equipment and haul trucks. **Table 3-14** displays the estimated total gallons of diesel fuel and gasoline consumption from implementation of the Proposed Action.

TABLE 3-14
ARCF 2016 PROJECT, AMERICAN RIVER CONTRACT 1
CONSTRUCTION FUEL CONSUMPTION

Fuel Type	Total Fuel Consumption (gallons)
Gasoline	1,916
Diesel	193,578

SOURCE: Modeling performed by Ascent Environmental in 2021.

As shown in Table 3-14, construction-activities would result in the consumption of approximately 1,916 and 193,578 gallons of gasoline and diesel fuel, respectively. This increase in fuel consumption would be met through existing fueling infrastructure and would not require the construction of new infrastructure that would result in an adverse environmental effect. Additionally, the use of fuel would not be considered wasteful, inefficient, or unnecessary because the Proposed Action would implement a method of improving the resiliency of the Sacramento region to flood impacts, which would be considered a necessary action for the protection of residents in the Sacramento region.

The Proposed Action would also not prevent the implementation of goals, policies, or actions contained in a plan to increase renewable energy usage or improve energy efficiency. The Proposed Action constitutes a construction project and would not generate operational electricity demand. Therefore, energy-related impacts would be less than significant.

ARCF GRR FEIS/FEIR Mitigation Measures

The following ARCF GRR FEIS/FEIR on-site mitigation measure is incorporated into the Proposed Action during construction. The portion of the measure committing to perform on-site material hauling using trucks equipped with on-road engines (if determined to result in lower levels of emissions than the off-road engines) was not incorporated, because it is not feasible for the Proposed Action.

> **Mitigation Measure GHG-1: Avoid, Minimize, and Compensate for Greenhouse Gas Emissions Effects.** The Project Partners would implement the following measures to avoid, minimize, and compensate for the Proposed Action's GHG emissions effects:

- Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking for construction worker commutes.
- Recycle at least 75 percent of construction waste and demolition debris.
- Purchase at least 20 percent of the materials and imported soil from sources within 100 miles of the project site.
- Minimize idling time, either by shutting equipment off when not in use or by reducing the time of idling to no more than 3 minutes (a 5-minute limit is required by the State airborne toxics control measure [13 CCR Sections 2449(d)(3) and 2485]). Clear signage identifying this requirement for workers would be posted at the entrances to the site.
- Maintain all construction equipment in proper working condition according to the manufacturer's specifications. The equipment would be checked by a certified mechanic and determined to be running in proper condition before it is operated.
- Use equipment with new technologies (repowered engines, electric drive trains).
- Use a CARB-approved low-carbon fuel for construction equipment. (NO_X emissions from the use of low-carbon fuel would be reviewed and increases mitigated.)
- Purchase carbon offsets for program-wide GHG emissions (direct plus indirect emissions from on-road haul trucks plus commute vehicles) that meet the criteria of being real, quantifiable, permanent, verifiable, enforceable, and additional, consistent with the standards set forth in Health and Safety Code section 38562, subdivisions (d)(1) and (d)(2). Such credits shall be based on protocols approved by the California Air Resources Board (CARB), consistent with Section 95972 of Title 17 of the California Code of Regulations, and shall not allow the use of offset projects originating outside of California, except to the extent that the quality of the offsets, and their sufficiency under the standards set forth herein, can be verified by USACE or the Sacramento Metropolitan Air Quality Management District (SMAQMD). Such credits must be purchased through one of the following: (i) a CARB-approved registry, such as the Climate Action Reserve, the American Carbon Registry, and the Verified Carbon Standard; (ii) any registry approved by CARB to act as a registry under the California Cap and Trade program; or (iii) through the California Air Pollution Control Officers Association's (CAPCOA's) GHG Rx and SMAQMD. Purchase of carbon offsets shall be sufficient to reduce the Proposed Action's GHG emissions to below SMAQMD's significance thresholds applicable through a one-time purchase of credits, based on the emissions estimates in this Supplemental EIR or on an ongoing basis based on monthly emissions estimates that would be prepared in accordance with procedures established by Measure AQ-3.

Summary

Implementation of the Mitigation Measure GHG-1 would improve the fuel and material efficiency of construction equipment, which would generate fewer emissions of GHGs. Once all on-site mitigation has been applied to the Proposed Action, carbon offsets would be purchased to reduce the remaining $MTCO_2e$ to levels at or below SMAQMD's 1,100 $MTCO_2e$/year significance threshold. Therefore, implementation of the measures identified above would reduce impacts to a less-than-significant level.

3.11 Noise and Vibration

3.11.1 Environmental Setting

3.11.1.1 Regulatory Setting

Section 3.13 (page 266) of the ARCF GRR FEIS/FEIR identifies local noise ordinances that apply to regulating noise in the in the Project Area of the Proposed Action. Chapter 5 of the ARCF GRR FEIS/FEIR summarized the environmental laws and regulations that apply to the ARCF Project and described the status of compliance with those laws and regulations. There have been no changes to the applicable listed regulations related to Noise and Vibration. Specific regulations and guidelines used in this analysis are presented below.

Federal

Federal Transit Administration

To address the human response to ground vibration, the Federal Transit Administration (FTA) has set forth guidelines for maximum-acceptable vibration criteria for different types of land uses. These guidelines are presented in **Table 3-15**, below.

TABLE 3-15
GROUND-BORNE VIBRATION IMPACT CRITERIA FOR GENERAL ASSESSMENT
(VDB RE 1 MICRO-INCH/SECOND

Land Use Category	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Category 1: Buildings where vibration would interfere with interior operations.	65[d]	65[d]	65[d]
Category 2: Residences and buildings where people normally sleep.	72	75	80
Category 3: Institutional land uses with primarily daytime uses.	75	78	83

NOTES:

VdB = vibration decibels referenced to 1 microinch per second and based on the root mean square velocity amplitude.

[a] "Frequent Events" is defined as more than 70 vibration events of the same source per day.
[b] "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
[c] "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.
[d] This criterion is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research would require detailed evaluation to define acceptable vibration levels.

SOURCE: Federal Transit Administration. 2018 (September). *Transit Noise and Vibration Impact Assessment.* Washington, D.C. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed December 22, 2021.

State

California Department of Transportation

In 2013, Caltrans published the *Transportation and Construction Vibration Manual*.[110] The manual provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. **Table 3-16** presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

3.11.1.2 Existing Conditions

The ARCF GRR FEIS/FEIR Section 3.13 (page 272) describes the regional and local setting in the vicinity of the Project Area. The following provides additional information specific to the Project Area.

TABLE 3-16
CALIFORNIA DEPARTMENT OF TRANSPORTATION RECOMMENDATIONS REGARDING LEVELS OF VIBRATION EXPOSURE

Effect on Buildings	PPV (in/sec)
Architectural damage and possible minor structural damage	0.4-0.6
Risk of architectural damage to normal dwelling houses	0.2
Virtually no risk of architectural damage to normal buildings	0.1
Recommended upper limit of vibration to which ruins and ancient monuments should be subjected	0.08
Vibration unlikely to cause damage of any type	0.006-0.019

NOTES:
in/sec = inches per second; PPV = peak particle velocity

SOURCE: California Department of Transportation. 2020 (April). *Transportation and Construction Vibration Guidance Manual, 2020 Update.* Division of Environmental Analysis. Sacramento, CA. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf. Accessed December 22, 2021.

Sensitive Receptors

Sensitive receptors along the American River include residents along the levee system and along the proposed haul routes. Refer to Figure 2-12 in Chapter 2, *Alternatives* for proposed haul routes and their proximity to existing land uses. Residential areas back up to the levees and in most cases, there is very little space between the levee toe and the back fence of private properties. Because the levee is higher than the houses, noise on the levees could travel into the backyards and houses. In addition, recreationists using the American River Parkway would be considered sensitive receptors, as would the local wildlife in the Parkway.

[110] California Department of Transportation, 2020 (April). *Transportation and Construction Vibration Guidance Manual, 2020 Update*. Sacramento, CA: Noise, Division of Environmental Analysis. Sacramento, CA. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf. Accessed December 22, 2021.

Sources of Noise

The majority of the Project Area, including both the American River North and South basins, is in urban and residential areas, where the primary sources of noise are traffic, trains, common urban uses, and limited air traffic. Boating operation is common along the American River. Major highways and roadways which generate noise near the American River include Business 80, U.S. 50, California State Highway 160, Exposition Boulevard, Elvas Avenue, Hurly Way, C Street, and Howe Avenue. Arterial roadways and stationary sources have a localized influence on the noise environment.

Based on available existing traffic data for Business 80 (i.e., U.S. 51) and U.S. 50, existing noise levels at nearby major intersections (e.g., U.S. 51/E Street and I-50/Howe Avenue), range from approximately 83 A-weighted decibels (dBA) to 84 dBA community noise equivalent level (CNEL), respectively (see Appendix F for modeling).

3.11.2 Methodology and Basis of Significance

3.11.2.1 Methodology

This analysis generally uses the same methodology described in Section 3.13.2 (page 274) of the ARCF GRR FEIS/FEIR. Construction activities (including construction equipment used for long-term maintenance) are assumed to be the predominant source of noise and vibration associated with the project. Construction noise impacts were assessed using an analysis method recommended by the U.S. Department of Transportation for construction of large public works infrastructure projects.[111] Based on anticipated construction equipment types and methods of operation, construction noise levels for various elements of the construction process were calculated. These predicted levels were compared to significance criteria to determine whether significant impacts are predicted to occur. Where significant noise impacts are identified, mitigation measures to reduce noise impacts are specified.

Project-generated construction noise and vibration levels were determined based on methodologies, reference noise levels, and usage factors from FTA's *Transit Noise and Vibration Impact Assessment* methodology.[112] Reference levels for noise and vibration emissions for specific equipment or activity types are well documented and the usage thereof common practice in the field of acoustics. The magnitude of construction noise and vibration impacts at sensitive land uses depends on the type of construction activity, the noise and vibration levels generated by various pieces of construction equipment, the distance between the activity, and sensitive land uses. For this analysis, noise levels at various distances from the construction equipment were estimated using calculation

[111] Federal Transit Administration, 2018 (September). *Transit Noise and Vibration Impact Assessment*. Washington, D.C. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed December 22, 2021.

[112] Federal Transit Administration, 2018 (September). *Transit Noise and Vibration Impact Assessment*. Washington, D.C. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed December 22, 2021.

procedures recommended by FTA.[113] The calculations used for this analysis include distance attenuation (6 decibels per doubling of distance) and attenuation from ground absorption for both hard ground and soft ground.

Regarding temporary increases in noise from haul trucks, noise levels were estimated based on anticipated maximum daily truck activity and traffic noise modeling using methods consistent with the Federal Highway Administration's (FHWA's) Traffic Noise Model.

3.11.2.2 Basis of Significance

This analysis uses the same basis of significance described in Section 3.13.2 (page 274) of the ARCF GRR FEIS/FEIR, as stated below.

Both the City and County of Sacramento noise ordinances state that a standard of 55 dBA is applied from 7:00 a.m. to 10:00 p.m., and a standard of 50 dBA is applied from 10:00 p.m. to 7:00 a.m. for residential and agricultural uses. The Proposed Activity at Site 1-1 and the staging area is located within City limits however truck hauling trips could extend into the County. Therefore, both the City and County of Sacramento noise ordinances are included in this analysis.

These noise levels are then adjusted according to the cumulative duration of the intrusive sound. For example, if the cumulative period is 5 minutes per hour, then the standard is adjusted by 10 dBA to 65 dBA during daytime hours and 60 dBA during nighttime hours. If the cumulative period is 30 minutes per hour, no adjustments are made and the standard is 55 dBA during the daytime and 50 dBA during the nighttime, functionally similar to the average hourly noise level, or L_{eq}. The noise level that must not be exceeded for any time per hour is 75 dBA during the day and 70 dBA during the night, functionally similar to a maximum noise level or L_{max}.

The Sacramento County noise ordinance further states that construction noise is exempt from 6:00 a.m. to 8:00 p.m. Monday through Friday and from 7:00 a.m. to 8:00 p.m. on Saturdays and Sundays (Chapter 6.68 Noise Control, County of Sacramento Code). The City of Sacramento exempts construction noise from 7:00 a.m. to 6:00 p.m. Monday through Saturday and from 9:00 a.m. to 6:00 p.m. on Sundays (8.68.080 Exemptions, Noise Control Standards, City of Sacramento Municipal Code). Thus, construction noise impacts were evaluated using the City and County noise codes, where applicable.

To evaluate potential structural damage from construction activities, Caltrans guidance was used. To evaluate disturbance to sensitive receptors from construction and hauling activities, FTA guidance was used. Thus, based on the aforementioned applicable

[113] Federal Transit Administration, 2018 (September). *Transit Noise and Vibration Impact Assessment*. Washington, D.C. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed December 22, 2021.

regulations, the Proposed Action would result in a significant effect related to noise if it would result in:

- A substantial temporary (i.e., construction) or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Due to the nature of project construction that would vary throughout the day depending on individual construction activities, applicable thresholds include construction noise levels above 55 dBA L_{eq}, or construction activity that generates excessive noise levels during sensitive times of the day; or
- Exposure of sensitive receptors or structures to groundborne vibration, that exceed the following:
  - 72 vibration decibels (VdB) for hauling activities,
  - 80 VdB for heavy-duty equipment, or
  - 0.2 peak particle velocity (PPV) for structural damage from any activity.

Since publication of the ARCF GRR FEIS/FEIR, changes to Appendix G of the State CEQA Guidelines that became effective in December 2018 were intended to reflect recent changes to the CEQA statutes and court decisions. To the extent that the topics or questions in Appendix G are not reflected in the ARCF GRR FEIS/FEIR significance criteria, these topics and questions have been taken into consideration in the impact analysis below, even though the determination of significance relies on City and County of Sacramento thresholds. Specifically, Appendix G no longer includes the criterion of the effect of permanent, temporary, or periodic increases in ambient noise levels in the project vicinity above levels existing without the project, but rather defers to local noise ordinances and standards as the relevant criteria.

Effects Not Evaluated Further

The Proposed Action would not result in any long-term sources of vibration such as railways or transit centers, and therefore, operational vibration impacts are not discussed further. In addition, no new stationary noise sources are proposed. Regarding permanent increases in traffic noise, once construction is complete, operational activities would be limited to small maintenance crews traveling to and from the site periodically to conduct inspections and limited work on-site. These activities are similar to current operations and would not result in traffic increases that could generate perceptible increases in noise. Issues related to long-term operational vibration, stationary noise sources, and traffic noise increases are not evaluated further.

The Proposed Action does not include any new land use development (e.g., residences, commercial) where people work or live, and therefore, would not expose people to aircraft or airport-related noise. Noise from aircraft and airports is not discussed further.

3.11.3 Impact Analysis

3.11.3.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the Proposed Action would not be implemented, and the Sacramento metropolitan area would experience no change in the present level of risk of flooding due to levee failure from seepage, slope stability, overtopping, or other erosion concerns. These events would generate noise; however, noise levels would depend on the degree of severity of these events. For instance, a catastrophic flood event could generate high volumes of noise as compared to some spillage from levee overtopping.

Under the No Action/No Project Alternative, there would be no construction-related effects on the acoustic environment, including the generation of groundborne vibration. The noise levels in the study area would remain consistent with the existing ambient noise levels present under current conditions. It is highly likely that if the project is not constructed, a large flood event could result in levee failure. The amount of noise that would be generated to repair the damaged levee and cleanup of the flooded lands could exceed noise ordinances and expose sensitive receptors near the rivers to excessive noise levels and groundborne vibration from the placement of riprap to repair levees. These effects on noise would be significant; however, the timing, duration, and magnitude of a flood event is unpredictable, and a precise significance determination is not possible.

3.11.3.2 Proposed Action

Construction Noise

The project would generate construction noise from heavy-duty equipment operating at Site 1-1 and from the use of heavy-duty trucks to haul material to and from the project site and staging areas. Although these activities are associated with proposed construction activities, they are somewhat distinct and may affect different receptors; thus, they are described separately below.

Heavy-Duty Construction Equipment

The ARCF GRR FEIS/FEIR (pages 275 through 281) characterized construction noise levels from various activities that would occur during project construction, including stripping, levee degrading, soil placement, riprap installation, and roadway construction, as shown in Table 50 of the ARCF GRR FEIS/FEIR. Based on the modeling conducted for that analysis, noise levels associated with riprap installation (i.e., 88 dBA L_{eq}) would represent the loudest anticipated noise levels, which would occur during Proposed Action activities at Site 1-1. Based on modeled noise levels for riprap installation, ground absorption, and standard attenuation rates (i.e., 6-dBA reduction per doubling of distance), **Table 3-17** below shows anticipated noise levels at various distances from heavy-duty equipment use at Site 1-1.

TABLE 3-17
NOISE LEVELS DURING CONSTRUCTION OF EROSION PROTECTION

Distance Between Source and Receiver (feet)	Calculated 1-Hour L_{eq} Sound Level (dBA)
50	88
100	80
200	73
300	68
400	65
500	62
1,000	54
1,500	50
2,000	47
3,000	42

NOTE:
dBA = A-weighted decibels; L_{eq} = hourly average noise level

SOURCE: Modeled by Ascent Environmental Inc. 2021

Sensitive receptors near Site 1-1 primarily include nearby existing residential neighborhoods and neighborhood parks. The closest sensitive receptors to construction activity include single family residences located roughly 50 to 60 feet from the outer boundary of construction areas at Site 1-1. Based on the anticipated construction activities and associated noise levels, applicable thresholds (i.e., 55 dBA L_{eq}) would be exceeded where construction activity would occur within approximately 1,000 feet of existing sensitive land uses.

Haul Trucks

In addition to noise generated from the use of heavy-duty equipment required for the Proposed Activity at Site 1-1, material (e.g., bedding, riprap, soil-filled riprap, planting bench soil, and aggregate base) would be imported and excavated daily, at varying quantities from Site 1-1 and the staging area throughout the construction period (i.e., May to November). Based on aerial imagery of the site and the anticipated haul routes, receptors are located as close as 30 feet from haul routes (i.e., from directional travel lane).

To model noise levels from hauling activities, maximum daily and hourly hauling activity was calculated based on anticipated material quantities needed, as provided in Chapter 2, *Alternatives*, and in Appendix F.

Based on the anticipated construction schedule and sequencing of activities, haul truck trips would occur from May to November to import riprap, bedding, gravel, soil, and IWM to Site 1-1. As mentioned previously, each of the materials would be brought in and used before the next material would be needed, however some overlap in hauling in of materials could occur. According to Table 2-2, the maximum daily truck trips that could

occur if the hauling phases would overlap, could occur during material hauling phases for the rip rap and soil-fill rip rap. Table 2-2 indicates soil-filled rip rap material would require approximately 1,500 truckloads over a period of 14 days, and rip-rap material would require approximately 2,700 truckloads over a period of seven days. Based on these quantities and assuming 10 cubic-yard haul trucks, there could be a maximum of 187 one-way trips, or 374 round-trip truck trips, required to haul material. Therefore, based on a conservative estimate of an eight-hour workday (i.e., Sunday), there could be approximately 24 truck trips per hour, or the peak hour volume.

This maximum truck trip estimate was used for noise modeling purposes, but hourly and daily truck volumes may be lower in some places throughout the Proposed Activity at Site 1-1 and haul routes. Based on these quantities and assuming all trucks could be traveling on the same route, hauling activities could result in noise levels of approximately 57 dBA L_{eq} at 100 feet from the centerline of the haul routes. Predicted noise levels would not attenuate to below 55 dBA L_{eq} until 127 feet from the centerline of the haul route. Because receptors are located as close as 30 feet from haul routes (i.e., from directional travel lane), receptors along proposed haul routes would be exposed to exterior noise levels that exceed applicable thresholds of 55 dBA L_{eq}.

As discussed above, heavy-duty construction equipment at the work site, as well as peak-hourly haul truck activities would exceed City and County of Sacramento daytime noise standards of 55 dBA L_{eq}. Under the Proposed Action, there would be significant short-term impacts associated with temporary construction noise and haul truck activities; however, this impact could be reduced to a less-than-significant level with mitigation.

Vibration Generated during Construction

Regarding construction-related vibration, pile driving, and blasting activities are of primary concern for both structural damage and disturbance to sensitive receptors. Consistent with the analysis in the ARCF GRR FEIS/FEIR (pages 277 through 288) pile driving and blasting activity are not proposed. Thus, the analysis in the ARCF GRR FEIS/FEIR assumed that the highest levels of vibration could come from a vibratory compactor/roller, a likely piece of equipment that could generate groundborne vibration. In accordance with FTA guidance for determining impacts from vibration to structures (i.e., vibration levels that exceed 0.2 inch per second peak particle velocity [PPV]) and based on reference vibration levels and standard attenuation rates for a vibratory compactor, vibration from heavy-duty equipment would only be a potential issue if structures were located within 25 feet of construction activity. Regarding disturbance to sensitive land uses, construction equipment would exceed FTA-recommended criteria for infrequent events (i.e., 80 VdB) within 75 feet of construction activity. Based on aerial imagery and anticipated location of the Proposed Activity at Site 1-1, receptors are generally located 50 to 60 feet away, which is within 75 feet of construction activity. Therefore, construction equipment activity would exceed the FTA threshold for sensitive land uses and would result in an impact to nearby residential receptors.

In addition to vibration from heavy-duty equipment, vibration impacts could also result from daily haul truck activity occurring near existing sensitive land uses. The ARCF GRR FEIS/FEIR did not evaluate vibration from haul trucks, so this analysis focuses on impacts from hauling activities.

Project-related construction vibration levels were calculated using FTA guidelines based on the 30-foot distance of the nearest sensitive receptor to haul routes. For purposes of this analysis, movement of loaded haul trucks was conservatively considered to produce a vibration level of approximately 86 VdB (0.076 inch per second PPV at a distance of 25 feet).[114] Assuming a maximum vibration level of 86 VdB at 25 feet, with an attenuation rate of 9 VdB per doubling of distance, the construction vibration level would exceed the FTA threshold for structural damage at a distance of 14 feet and would exceed the threshold for structural damage at 75 feet from haul truck activity. The closest receptors along the haul truck routes are located roughly 30 feet from the directional line of traffic. At a 30-foot distance, vibration levels would be approximately 84 VdB (0.058 inch per second PPV). This vibration level is below the FTA threshold of 0.2 inch per second PPV for structural damage of normal dwelling houses. However, this vibration level is above the FTA threshold of 72 VdB (frequent events) for human annoyance and would be perceptible.

As discussed above, the use of heavy-duty construction equipment could result in vibration impacts to nearby sensitive receptors located less than 75 feet away from nearby residential receptors. Further, due to the frequency (i.e., maximum 187 per day) of daily haul trucks, hauling activities could exceed FTA recommended guidelines for frequent events of 72 VdB at some receptors. Under the Proposed Action, there would be significant impacts associated with temporary construction-related vibration from heavy-duty equipment use and haul truck activities; however, this impact could be reduced to a less-than-significant level with mitigation incorporated.

ARCF GRR FEIS/FEIR Mitigation Measures

During construction, noise-reducing measures would be employed to ensure that construction noise would comply with local ordinances. Prior to the start of construction, a noise control plan would be prepared that would identify feasible measures to reduce construction noise, when necessary. The following ARCF GRR FEIS/FEIR mitigation measure (pages 281 to 282) is incorporated into the Proposed Action:

> **Mitigation Measure NOISE-1: Implement Noise Reduction Practices.** USACE and the CVFPB would implement the following noise control measures to reduce construction-related noise effects. The following noise reduction practices would reduce noise generated by construction activities and would apply

[114] Federal Transit Administration, 2018 (September). *Transit Noise and Vibration Impact Assessment*. Washington, D.C. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed December 22, 2021.

to construction activities within 500 feet of sensitive receptors, including but not limited to residences.

- Coordinate with local residents, comply with noise ordinances, and implement Best Management Practices (BMPs).
- Provide written notice to residents within 1,000 feet of the construction zone, advising them of the estimated construction schedule. This written notice would be provided within one week to one month of the start of construction at that location.
- Display notices with such information as contractor contact telephone number(s) and proposed construction dates and times in a conspicuous manner, such as on construction site fences.
- Schedule the loudest and most intrusive construction activities during daytime hours (7:00 a.m. to 7:00 p.m.), where feasible.
- Require that construction equipment be equipped with factory-installed muffling devices, and that all equipment be operated and maintained in good working order to minimize noise generation.
- Locate stationary noise-generating equipment as far as practicable from sensitive receptors.
- Limit unnecessary engine idling (i.e., longer than 5 minutes) as required by State air quality regulations.
- Employ equipment that is specifically designed for low noise emission levels, when feasible.
- Employ equipment that is powered by electric or natural gas engines, as opposed to those powered by gasoline fuel or diesel, when available and feasible.
- If the construction zone is within 500 feet of a sensitive receptor, place temporary barriers (e.g., noise curtains, sound walls, etc.) between stationary noise equipment and noise-sensitive receptors to block noise transmission, when feasible, or take advantage of existing barrier features, such as existing terrain or structures, when feasible.
- If the construction zone is within 500 feet of a sensitive receptor, prohibit the use of backup alarms and provide an alternate warning system, such as a flagman or radar-based alarm that is compliant with State and Federal worker safety regulations.
- Locate construction staging areas as far as practicable from sensitive receptors.
- If there are any occupied buildings with plaster or wallboard construction within 40 feet of construction equipment, prepare a vibration control plan prior to construction.

Summary

Previously adopted ARCG GRR FEIS/FEIR mitigation (Mitigation Measure NOISE-1) would be incorporated into the Proposed Action and would reduce construction noise and vibration, and associated exposure, by ensuring that proper equipment is used, by requiring the noticing and installation of sound barriers to break the line of sight to nearby receptors, and by requiring alternative equipment types or alternative construction methods to be used to reduce noise to the extent possible. The mitigation limits construction activity to between 7:00 a.m. and 7:00 p.m.; however, the Proposed Action would limit construction activity to City of Sacramento daytime construction hours, which are from 7:00 a.m. to 6:00 p.m. on Mondays through Saturday and 9:00 a.m. to 6:00 p.m. on Sundays (see Section 2.1.2.4).

Additional Mitigation Measure

In addition to the mitigation measure incorporated from the ARCF GRR FEIS/FEIR (Mitigation Measure NOISE-1) above, a new Mitigation Measure NOISE-2 would require that a vibration control plan and site-specific measures would be implemented to ensure that applicable vibration thresholds would not be exceeded. Therefore, this mitigation measure would reduce the impact from vibration to a less-than-significant level.

> **Mitigation Measure NOISE-2: Implement Vibration Control Measures.** USACE and the CVFPB would implement the following vibration control measures to reduce construction-related vibration effects.
>
> - To the extent feasible and practicable, the primary construction contractors would employ vibration-reducing construction practices so that vibration from construction would comply with applicable noise-level rules and regulations, including the construction vibration standards of the City or County of Sacramento. Project construction specifications would require the contractor to limit vibrations to less than 0.2 inch per second PPV and less than 72 VdB for frequent events (i.e., truck hauling) or 80 VdB for infrequent events (i.e., heavy-duty construction activities). If construction or truck hauling activity would occur within 75 feet of an occupied building, the contractor would prepare a vibration control plan prior to construction. The plan would include measures to limit vibration, including but not limited to the following:
>
> - Avoid vibratory rollers and packers near sensitive areas. Alternatives may include pad foot rollers drum rollers, or similar non-vibratory equipment.
>
> - Route heavily loaded trucks away from residential streets, if possible. If no alternatives are available, select the streets with the fewest homes. Depending on the specific truck type that would be used, the contractor could demonstrate with substantial evidence, to the City of Sacramento, that trucks would not exceed applicable thresholds mentioned above.
>
> - Prior to construction activities, notify each residence within 75 feet of construction with contact information to request pre- and post-construction surveys to assess potential architectural damage from levee construction

vibration. The survey would include visual inspection of the structures that could be affected and documentation of structures by means of photographs and video. This documentation would be reviewed with the individual owners prior to any construction activities. Post-construction monitoring of structures would be performed to identify (and repair, if necessary) damage, if any, from construction vibration. Any damage would be documented with photographs and video. This documentation would be reviewed with the individual property owners.

- Place vibration monitoring equipment at the property line adjacent to large equipment and, with owner approval, at the back of the residential structures adjacent to the large equipment. Record measurements daily.

3.12 Recreation

3.12.1 Environmental Setting

3.12.1.1 Regulatory Setting

Section 3.14 (page 282) of the ARCF GRR FEIS/FEIR summarized the environmental laws and regulations that apply to the proposed action and Chapter 5 of the ARCF GRR FEIS/FEIR described in detail the status of compliance with those laws and regulations. There has been no change to the applicable listed regulations related to recreation as listed in the ARCF GRR FEIS/FEIR.

3.12.1.2 Existing Conditions

The ARCF GRR FEIS/FEIR Section 3.14 (pages 282 through 287) describes the regional and local setting in the vicinity of the Project Area, including descriptions of the recreational facilities, uses, and access to the Project Area. These include descriptions of the following: the American River Parkway (Parkway), and the Sutter's Landing Regional Park. In addition to the recreational facilities described in the ARCF GRR FEIS/EIR, the Proposed Action includes staging areas, an ingress/egress location, and haul routes in the Sutter's Landing Regional Park, and an ingress/egress location for construction at Glenn Hall Park in the Riverpark neighborhood. The City of Sacramento's Two Rivers Recreational Trail is located on the waterside of the levee crown road in Sutter's Landing Regional Park and is paved until it meets the Union Pacific Railroad, where the recreational trail currently ends. Glen Hall Park is located on Sandburg Drive and the terminus of Carlson Drive. The parking lot of Glenn Hall Park would be used for temporary construction vehicle access to the levee crown road. The Parkway's open spaces and natural resources provide a highly valued natural setting and variety of recreational activities include biking, running, walking, birding, fishing, and boating. The location of these sites are identified within the described context of the Proposed Action in Chapter 2, *Alternatives*.

3.12.2 Methodology and Basis of Significance

3.12.2.1 Methodology

This analysis uses the same methodology as described in Section 3.14 (page 287) of the ARCF GRR FEIS/FEIR to analyze impacts of the Proposed Action on recreational opportunities within the Project Area based on temporary and permanent changes to recreational resources.

3.12.2.2 Basis of Significance

This analysis uses the same basis of significance described in Section 3.14 (page 287) of the ARCF GRR FEIS/FEIR, as restated below.

The Proposed Action would result in a significant effect related to recreation if it would:

- Eliminate or substantially restrict or reduce the availability, access, or quality of existing recreational sites or opportunities in the Project Area;
- Cause substantial long-term disruption in the use of an existing recreation facility or activity;
- Result in inconsistencies or non-compliance with regional planning documents; or
- Result in inconsistencies with the Rivers and Harbors Act or the Wild and Scenic Rivers Act.

3.12.3 Impact Analysis

3.12.3.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the proposed action would not be implemented, and the Sacramento metropolitan area would experience no change in the present level of risk of flooding due to levee failure from seepage, slope stability, overtopping, or other erosion concerns.

Under these conditions, a flood event could cause portions of the levees to fail, triggering widespread flooding and related damage. If a catastrophic flood were to occur, flooding and inundation of existing recreational facilities (e.g., Sutter's Landing Regional Park), trails, bike paths, fishing access, and other recreation areas would render the American River Parkway unusable until cleanup and restoration activities could take place. All of these effects on recreation would be considered significant; however, the timing, duration, and magnitude of a flood event is unpredictable. Therefore, a precise significance determination cannot be made.

3.12.3.2 Proposed Action

The ARCF GRR FEIS/FEIR Section 3.14 (pages 282 through 293) analyzed impacts on recreation within the Project Area. The Proposed Action would result in temporary

closures of parts of the Sutter's Landing Regional Park, the Two Rivers Recreational Trail, and Glenn Hall Park during construction activities, as described in Chapter 2, *Alternatives*. Haul trucks and other construction equipment would use portions of the recreational trail to move materials, temporarily reducing accessibility to recreationists. Access roads and staging areas would be restored and reseeded, as necessary to pre-project conditions or better. Mitigation Measure REC-1 would reduce impacts on walkers, runners, cyclists, and recreationists accessing the river, by providing marked detours for bicycle trails and street bicycle routes in consultation with Sacramento County Regional Parks and the City of Sacramento Bicycle and Pedestrian Coordinator. In addition, traffic controls (including signage and pre-construction notification) would be implemented in areas where recreational traffic would intersect with construction vehicles.

All the open available recreational trails would have some locations where construction equipment would cross from staging areas or hauling of materials from off-site to the staging areas. At these locations, flaggers would be stationed to provide traffic control of construction equipment and recreationists to prevent accidents. Construction staging areas would also restrict the use of and access to recreational areas, reducing the quality of recreational experiences in that area.

While bike trails and running paths could be rerouted or accessible a short distance away from the construction site, there would still be an overall reduction in recreational quality with the construction over a 1.5-year period, or longer, and therefore, short-term temporary effects on recreation would be significant. Construction would also occur during the summer months at the peak of recreation activities in the American River Parkway. Further, proximity to construction equipment and activities may degrade the quality of recreational experiences due to noise, visual effects, odors, and air pollutants.

Such closures and disturbances would result in temporary non-compliance with American River Parkway Plan Policy 4.13, which states that flood control berms, levees, and other facilities should be, to the extent consistent with proper operation and maintenance of these facilities, open to the public for approved uses, such as hiking, biking, and other recreational activities. However, the Proposed Action would result in localized and temporary closures and the proposed improvements to the levees would improve stability required for the proper maintenance of the levees to prevent future flood risk, reducing potential for future closures of recreational facilities. The Proposed Action also would also not preclude future access to recreational areas and would not conflict with the purposes and intents of the American River Parkway Plan.

Although the construction period would be short term, temporary and localized, effects on recreational access and activities during construction would be significant. Mitigation measures would be implemented to reduce impacts on recreation. However, even with mitigation measures, the Proposed Action's effects on recreation during construction would remain significant and unavoidable.

ARCF GRR FEIS/FEIR Mitigation Measures

The following 2016 ARCF GRR FEIS/FEIR mitigation measure found in Section 3.14 (page 292) is incorporated into the Proposed Action, with modifications to provide clarity and greater local specificity on notification of the public on closures of recreation facilities affected by the Proposed Action.

Mitigation Measure REC-1: Avoid and Minimize Effects on Recreational Use. USACE and the CVFPB would implement the following measures to reduce temporary, short-term construction effects on recreational facilities in the Project Area:

- Coordinate with recreation user groups prior to and during construction for input into mitigation measures that would reduce effects to the maximum extent practicable. Advance notice would be given to recreation users, informing them of anticipated activities and detours to reduce the effects. Closures of paved trails would be noticed 14-days in advance via signage at the detour locations.
- Post signs at major entry points for parks and recreation facilities clearly indicating closures and estimated duration of closures. Information signs would notify the public of alternate parks and recreation sites, including boat launch ramps, and provide a contact number to call for questions or concerns.
- Provide flaggers and post warning signs and signs restricting access before and during construction to ensure public safety.
- Provide marked detours for all bike trails and on-street bicycle routes that would be temporarily closed during construction. Detours would be developed in consultation with the City of Sacramento Bicycle and Pedestrian Coordinator at least 10 days before the start of construction activities, as applicable. Signs that clearly indicate closure routes would be posted at major entry points for bicycle trails, information signs would be posted to notify motorists to share the road with bicyclists where necessary, and a contact number would be provided to call for questions or concerns. Fences would be erected to prevent access to the Project Area.
- Provide traffic control in areas where recreational traffic would intersect with construction vehicles.
- If any access point needs to be closed during construction, post notices providing alternative access routes.
- Upon completion of levee improvements, coordinate with the City of Sacramento and Sacramento County to restore access and repair any construction-related damage to recreational facilities to pre-project conditions.

Summary

The ARCF GRR FEIS/FEIR concluded that the mitigation measure would reduce project impacts on recreation, but construction-related impacts would remain significant and unavoidable. Previously adopted ARCF GRR FEIS/FEIR Mitigation Measure REC-1, would reduce impacts on recreational activities to the extent feasible. Although the temporary closures of recreational facilities would remain significant and unavoidable, construction of the Proposed Action would not result in recreation impacts that would be new or more severe than those addressed in the ARCF GRR FEIS/FEIR.

3.13 Public Utilities and Service Systems

3.13.1 Environmental Setting

3.13.1.1 Regulatory Setting

Section 3.16 of the ARCF GRR FEIS/FEIR (page 313) identified no Federal or State environmental laws and regulations that apply to regulating public utilities and service systems. Chapter 5 of the ARCF GRR FEIS/FEIR summarized the environmental laws and regulations that apply and described the status of compliance with those laws and regulations. There has been no change to the applicable listed regulations related to public utilities and service systems.

3.13.1.2 Existing Conditions

Although the Proposed Action contains previously unanalyzed improvements and related actions, Section 3.16 of the ARCF GRR FEIS/FEIR (pages 313 through 315) describes the regional and local setting in the vicinity of the ARCF 2016 Project, which have not changed.

3.13.2 Methodology and Basis of Significance

3.13.2.1 Methodology

This analysis uses the same methodology described in the ARCF GRR FEIS/FEIR Section 3.16 (page 316). Effects on public utilities and service systems were identified by comparing existing service capacity and facilities to public utilities and service systems during and after construction of the Proposed Action. The evaluation assumed the Proposed Action would occur in phases over approximately two years.

3.13.2.2 Basis of Significance

This analysis uses the same basis of significance described in Section 3.16 (page 316) of the ARCF GRR FEIS/FEIR, as summarized below.

The Proposed Action would result in a significant effect related to utilities and public services if it would:

- Require the construction or expansion of any utility systems due to project implementation;
- Disrupt or significantly diminish the quality of the public utilities and services for an extended period of time;
- Create an increased need for new fire protection, police protection, or ambulance services or significantly affect existing emergency response times or facilities;
- Create damage to public utility and service facilities, pipelines, conduits, or power lines; or
- Create inconsistencies or non-compliance with regional planning documents.

Since publication of the ARCF GRR FEIS/FEIR, changes to Appendix G of the State CEQA Guidelines were adopted that take into consideration the following additional or modified significance criteria:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- Generate solid waste more than State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
- Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste.

Effects Not Evaluated Further

The Proposed Action includes construction activities, including clearing, grubbing, grading, bank protection, creation of planting benches, and installation of launchable rock trenches. These construction activities would result in an increase in dust in the Project Area. To meet air quality requirements, some amount of water would be used for dust suppression purposes during construction activities. The Proposed Action does not include residential or commercial developments that would create new potable water demand, generate new wastewater demand or contribute to existing wastewater systems, or require new sources of gas, electricity, or other utilities that would require the

expansion of public utilities. Therefore, no further evaluation of effects of the Proposed Action on these public services and utilities is necessary.

3.13.3 Impact Analysis

3.13.3.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the Proposed Action would not be implemented, and the Sacramento metropolitan area would experience no change in the present risk of flooding due to levee failure from seepage, slope stability, overtopping, or other erosion concerns. If a levee failure were to occur, major government facilities would be impacted until flood waters recede. Such an event could cause inundation from high flows and destruction or damage to utility lines, natural gas supply lines, and water or wastewater piping or facilities, all of which could lead to widespread contamination, temporary power outages, and interruptions of other utilities in the Project Area and surrounding areas. This could cause a temporary shutdown or slowdown of many State and local government functions. Many transportation corridors within the Project Area could be flooded if levees were to fail. All of these effects on public utilities and service systems would be considered significant; however, the timing, duration, and magnitude of a flood event is unpredictable. Therefore, a precise significance determination cannot be made.

3.13.3.2 Proposed Action

Section 3.16 of the ARCF GRR FEIS/FEIR (pages 317 through 323) analyzed impacts on public utilities and service systems in the Project Area. The analysis determined that construction activities could adversely affect existing electric power, natural gas, or telecommunications—specifically, overhead power lines and telecommunication facilities or stormwater and wastewater infrastructure facilities and systems. Drop inlets, outfall structures, drainage pipes, and other infrastructure elements that are buried, penetrate, or protrude from the levee would have to be identified, removed, or relocated before or during construction activities. Existing utilities that are functional and operational would be relocated accordingly. Possible relocation methods could be: (1) a surface line over the levee prism; or (2) a through-levee line equipped with positive closure devices.

Under the Proposed Action, no active utilities are to be relocated by construction activities associated with Site 1-1. Within Site 1-1, the Caltrans and City of Sacramento stormwater outfalls would not be altered or otherwise obstructed by the Proposed Action, resulting in no interruption or alteration of service. As further described in Chapter 2, *Alternatives*, temporary irrigation systems would be installed for the establishment and maintenance period for plantings at Site 1-1. The water source for the irrigation system would be provided through an irrigation mainline to pump water from the river. Irrigation would be temporary and applied by drip or spray. The onsite irrigation system would be temporary, use minimal water, and would not interrupt water service to the public. Therefore, there would be a less than significant impact to water availability or demand.

Construction Solid Waste

Construction of the Proposed Action would temporarily increase the generation of solid waste in the Project Area. Sources of solid waste related to construction activities would include cleared vegetation and debris. Waste materials (including cleared vegetation) and excess earth materials (e.g., soil, roots, grass, and excavated materials that do not meet levee embankment criteria) would be hauled off-site to a suitable disposal location. These materials, along with other potential solid waste materials, such as asphalt, concrete, pipes, etc., would also be removed from Project Area and would be disposed of at an appropriate, licensed landfill.

The location of the landfill used for disposal of construction-related waste would be determined by the construction contractor before the start of construction activity. This disposal would be determined based on capacity, type of waste, and other factors. Only those landfills determined to have the ability to accommodate the construction disposal needs of the Proposed Action would be used. The Kiefer Landfill, owned and operated by Sacramento County and located about 14 miles southeast of the Project Area, would likely be the landfill used. The Kiefer Landfill has more than 117 million cubic yards of total capacity within the 660-acre disposal area. Currently, 40 million cubic yards of waste occupy 3 of the 11 modules that are actively used for disposal of solid waste materials and these could accommodate all construction waste from the Proposed Action. Other landfills that may also be utilized include the L and D Landfill, Yolo County Central Landfill, and the Western Regional Landfill in Placer County. Project construction and operation would not cause existing regional landfill capacity to be exceeded; therefore, this impact would be less than significant.

Emergency Response Services

The extent and intensity of proposed construction activities, including road closures and traffic circulation patterns associated with the Proposed Action, could increase the time for first responders to quickly respond to emergency situations in the Project Area, that could result in a temporary significant impact on the capacity of emergency response services. Implementation of mitigation measures identified in the ARCF GRR FEIS/FEIR would reduce impacts on associated emergency response service levels to a less-than-significant level, because USACE and the CVFPB would prepare and implement a response plan to streamline access points and reduce response times, and would notify first responders of the potential for disruptions in the Project Area.

ARCF GRR FEIS/FEIR Mitigation Measures

The following ARCF GRR FEIS/FEIR mitigation measure found in Section 3.16 is incorporated into the Proposed Action to mitigate potential damage to utilities and infrastructure and reduce service disruptions during construction of the Proposed Action.

> **Mitigation Measure UTIL-1: Avoid and Minimize Service Disruptions and Damage to Utilities and Infrastructure.** USACE and the CVFPB would implement the measures listed below before construction begins to avoid and

minimize potential damage to utilities and infrastructure and reduce service disruptions during construction.

- Coordinate with applicable utility and service providers to implement the orderly relocation of utilities that need to be removed or relocated.
- Notify the appropriate agencies and affected landowners regarding any potential interruptions of service.
- Verify through field surveys and the use of Underground Service Alert services the locations of buried utilities in the Project Area, including natural gas, petroleum, and sewer pipelines. Any buried utility lines would be clearly marked in construction (e.g., in the field) and on the construction specifications in advance of any earthmoving activities.
- Before the start of construction, prepare and implement a response plan that addresses potential accidental damage to a utility line. The plan would identify chain-of-command rules for notifying authorities and appropriate actions and responsibilities regarding the safety of the public and workers. A component of the response plan would include worker education training in response to such situations.
- Stage utility relocations during project construction to minimize interruptions in service.
- Communicate construction activities with first responders to avoid response delays caused by construction detours.

Summary

The previously adopted ARCF GRR FEIS/FEIR Mitigation Measure UTIL-1 would adequately reduce impacts service disruptions to a less-than-significant level. Therefore, there would be no residual significant impact.

3.14 Hazards and Hazardous Materials

3.14.1 Environmental Setting

3.14.1.1 Regulatory Setting

Section 3.17 of the ARCF GRR FEIS/FEIR (pages 322–323) identified Federal or State environmental laws and regulations that apply to hazards and hazardous materials. Chapter 5 of the ARCF GRR FEIS/FEIR summarized the environmental laws and regulations that apply to the ARCF Project and described the status of compliance with those laws and regulations. Additional applicable laws and regulations not previously listed in the ARCF GRR FEIS/FEIR are listed below.

Federal

- Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act)
- 49 CFR 171.1—Applicability of Hazardous Materials Regulations
- 40 CFR Part 260 - Resources and Conservation Recovery Act (RCRA)
- 49 USC 5101 -Department of Transportation Hazardous Materials Transportation Act
- 29 USC 15 – Occupational Safety and Health Administration (OSHA)

State

- 19 CCR Division 2, Chapter 4, Hazardous Material Release Reporting, Inventory, and Response Plans
- 26 CCR, California Health and Safety Code [HSC], Chapter 6.95, Section 25501; Section 25503.5, Hazardous Material Management Plans and Hazardous Material Inventory Statement Programs
- 22 CCR HSC Division 4.5, Chapter 6.5, Hazardous Waste Control Law; Chapter 11, Section 66261.3; Section 66260.10, Hazardous Materials Transportation
- 22 CCR HSC Division 37, Section 57008, California Human Health Screening Levels, California Land Environmental Restoration and Reuse Act of 2001 (Chapter 764, Statutes of 2001, Office of Environmental Health Hazard Assessment, 2010)
- 19 CCR HSC Division 2, Section 25531, California Accidental Release Response Plan Programs
- 29 CFR, Occupational Safety and Health Administration (OSHA); 8 CCR, Cal/OSHA regulations for use of hazardous materials in the workplace

3.14.1.2 Existing Conditions

Section 3.17 of the ARCF GRR FEIS/FEIR (pages 323 through 325) describes the regional and local setting in the vicinity of the Project Area related to hazards and hazardous materials. A Phase 1 Environmental Site Assessment (Phase 1) was conducted as part of the ARCF GRR FEIS/FEIR. The Phase 1 identified five hazardous waste or materials sites within the ARCF GRR FEIS/FEIR study area; however, none of the identified sites are not located within the Project Area. An updated review of the California Department of Toxic Substances Control's EnviroStor database and State Water Resources Control Board's Geotracker[115] was conducted in December 2021, and no new hazardous waste sites were listed or shown within the Project Area.

[115] California Department of Toxic Substances Control, 2021. Available: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Sacramento+Ca. Accessed December 10, 2021.

The California Department of Forestry and Fire Protection's mapping information determined that the Project Area is not located within a very high fire hazard severity zone.[116]

3.14.2 Methodology and Basis of Significance

3.14.2.1 Methodology

This analysis generally uses the same methodology described in Section 3.17 (page 322) of the ARCF GRR FEIS/FEIR. The methodology addressed potential sources of hazards and risks from hazardous materials that may be associated with the proposed alternatives.

3.14.2.2 Basis of Significance

This analysis uses the same basis of significance described in Section 3.17 (page 325) of the ARCF GRR FEIS/FEIR, as summarized below.

The Proposed Action would result in a significant impact related to hazardous wastes and materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or involve the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment; or
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency excavation plan.

Since publication of the ARCF GRR FEIS/FEIR, changes to Appendix G of the State CEQA Guidelines were adopted that that address excessive noise effects on people living or working within two miles of a public airport, and risks associated with wildfire. As a result, this analysis also takes into consideration the following additional or modified significance criteria:

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport, would the project result in a safety hazard or excessive noise for people residing or working in the Project Area.

[116] California Department of Forestry and Fire Protection, 2007. Fire Hazard Severity Zone Maps and Adopted State Responsibility Area Fire Hazard Severity Zone Maps. https://egis.fire.ca.gov/FHSZ/. Accessed December 10, 2021.

- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Effects Not Evaluated Further

The Project Area is not located within an airport land use plan or within two miles of a public airport. The closest public airports to the Project Area are Sacramento Executive Airport (5.5 miles) and Sacramento Mather (6 miles). Therefore, the Proposed Action would result in no impacts to safety from either airport. Noise impacts are analyzed in Section 3.11, *Noise and Vibration* of this document.

The Project Area is not located in a very high fire hazard severity zone as mapped by the California Department of Forestry and Fire Protection.[117] In addition, the Proposed Action does not involve the development of occupied structures that could be at risk as a result of wildfires. Therefore, no fire hazard impact would occur. The ARCF GRR FEIS/FEIR identified five hazardous waste sites in the study area. As described previously, because none of these hazardous waste sites are within the Project Area and no active sites were found based on an updated search, no further evaluation is necessary.

3.14.3 Impact Analysis

3.14.3.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, the proposed action would not be implemented, and the Sacramento metropolitan area would experience no change in the present level of risk of flooding due to levee failure from seepage, slope stability, overtopping, or other erosion concerns.

Under these conditions, a flood event could cause portions of the levees to fail, possibly triggering widespread flooding and related damage. If a catastrophic flood were to occur, emergency flood fighting and clean-up efforts would commence, in part to contain releases of hazardous materials. Hazardous materials could be released in floodwaters, exposing the public and environment to possibly dangerous pollutant concentrations. The application of best management practices to control all hazards and hazardous materials might not be feasible. All of these effects on hazards and hazardous materials would be considered significant; however, the timing, duration, and magnitude of a flood event is unpredictable, and therefore precise significance determination cannot be made.

3.14.3.2 Proposed Action

Section 3.17 of the ARCF GRR FEIS/FEIR (pages 325 through 329) analyzed the impacts associated with Hazardous Wastes and Materials during construction of levee improvements throughout the Sacramento area, including construction of levee improvements in the Project Area. Over the construction period for the Proposed Action, construction contractors would be required to use, store, and transport hazardous

[117] California Department of Forestry and Fire Protection, 2007. Fire Hazard Severity Zone Maps and Adopted State Responsibility Area Fire Hazard Severity Zone Maps. https://egis.fire.ca.gov/FHSZ/. Accessed December 10, 2021.

materials (e.g., fuel, oils, lubricants, etc.) in compliance with Federal, State, and local regulations. The ARCF GRR FEIS/FEIR stated that any hazardous substance encountered during construction would be removed and properly disposed of by a licensed contractor in accordance with Federal, State, and local regulations.

Compliance with applicable regulations would reduce the potential for accidental release of hazardous materials during transport and construction activities. While the risk of exposure is considered low and potentially significant, implementation of the mitigation measures discussed below would reduce the impacts of the Proposed Action to a less-than-significant level.

While small quantities of construction related fuels, oils, and lubricants would be used and/or stored within the staging areas, there are no schools within a 0.25 mile radius from the storage areas. In addition, the materials to be stored would not be classified as acutely hazardous and implementation of the Proposed Action would not emit any substantive quantities of hazardous materials or require handling of acutely hazardous materials, substances or waste during construction. Carlson Drive, adjacent to Caleb Greenwood Elementary School and J Street north of CSUS, would be used as a potential haul route for the Proposed Action. However, construction activities would not require the use or handling of acutely hazardous materials, substances or waste, and transportation of all other hazardous materials would be undertaken in accordance with U.S. Department of Transportation (DOT) and California Department of Transportation (CalTrans) requirements. Therefore, this impact would be less than significant.

Emergency Access

For Site 1-1, haul routes for riprap, bedding, gravel, and IWM would travel to the sites from either Interstate 80 (I-80) to the north or from U.S. 50 to the southeast. As discussed in Section 3.8, *Transportation and Circulation*, in this Supplemental EIR, haul trucks would travel to the staging areas using either of these haul routes shown on Figure 2-12 in Chapter 2, *Alternatives*. Haul trucks would travel along the top levee road between designated ingress and egress locations. In addition, soil removed during the cut bank excavation and grading at Site 1-1 would be hauled off site to either a landfill, soil stockpile locations used by the local maintaining agency (LMA) for such purposes, or both, within a 15-mile distance.

Construction traffic associated with the Proposed Action could temporarily slow traffic flow and impair implementation of or physically interfere with an adopted emergency response plan or emergency excavation plan in or near the haul routes within the Project Area during the construction period, which is expected to occur from May to October. Construction activities are anticipated during weekdays and Saturdays between 7:00 a.m. and 6:00 p.m. It is possible that during these periods, emergency response or evacuation could be briefly delayed along haul routes and response times could be reduced. Therefore, the Proposed Action effects on an emergency response plan or emergency evacuation plan would be short-term and significant until construction is completed. Implementation of the mitigation measures from the ARCF GRR FEIS/FEIR as clarified

in Section 3.8, *Transportation and Circulation*, and Section 3.13, *Public Utilities and Service Systems*, in this Supplemental EIR would reduce potential impacts on emergency access to a less-than-significant level.

ARCF GRR FEIS/FEIR Mitigation Measures

The following ARCF GRR FEIS/FEIR mitigation measure is incorporated into the Proposed Action with some modifications as detailed below.

> **Mitigation Measure HAZ-1: Implement Stormwater Pollution Prevention Plan Best Management Practices and Test Site for Contaminants Prior to Construction.** USACE and the CVFPB would implement the following measures to avoid and minimize the impact of hazards and hazardous materials.
>
> - Comply with applicable regulations to reduce the potential for an accidental release of hazardous materials during construction. The contractor would also be required to prepare a SWPPP, which details the methods to prevent run-on and discharges from the construction sites into drainage systems, lakes, or rivers. The SWPPP would also include BMPs that detail hazardous materials handling and storage requirements as well as spill prevention and response measures that would be implemented accordingly.
>
> - Test each erosion protection site for contaminants before construction and dispose of any materials found in accordance with all Federal, State, and local regulations at an approved disposal site.

Implementation of these mitigation measures would reduce impacts from hazardous materials in the Project Area to a less-than-significant level. If significant time has elapsed (i.e., five years) between approval of this document and construction, additional investigations should be performed to reduce the risk of encountering hazardous wastes during construction.

Summary

Previously adopted ARCF GRR FEIS/FEIR Mitigation Measure HAZ-1, would reduce impacts addressed to a less-than-significant level. There would be no residual significant impact.

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CHAPTER 4
Cumulative and Growth-Inducing Effects

CEQA requires the consideration of cumulative effects of the proposed action, combined with the effects of other projects. The State CEQA Guidelines define cumulative effects as "two or more individual effects which, when considered together, compound or increase other environmental impacts" (14 CCR Section 15355). The cumulative effects of the overall ARCF project were analyzed in the 2016 ARCF GRR FEIS/FEIR (pages 335 through 357). The thorough cumulative analysis in the 2016 ARCF GRR FEIS/FEIR is incorporated by reference. But the temporal scope of the analysis was necessarily programmatic and, therefore, for the purposes of the Proposed Action, the temporal scope of the cumulative effects analysis in this Supplemental EIR considers past projects that continue to affect the Project Area in 2021, projects that are under construction in 2022, and any reasonably foreseeable future projects.

4.1 Cumulative Projects

4.1.1 Projects Contributing to Potential Cumulative Effects

This section briefly describes other similar or related projects, focusing on flood-risk reduction and habitat restoration projects that have similar effect mechanisms and affect similar resources as would the Proposed Action. Although the 2016 ARCF GRR FEIS/FEIR identified several of these projects in the cumulative scenario, the descriptions in this section include additional projects and updated timing and schedule information that provide the cumulative context based on current documentation. The following projects are a representative sample of the reasonably foreseeable and probable programs, projects, and policies that could have impacts that could cumulatively combine with the impacts of the Proposed Action, and the other programs, projects, and policies included in the cumulative impact assessment.

Past and present projects and activities have contributed on a cumulative basis to the existing environment within the Project Area via various mechanisms, such as the following:

- population growth and associated development of socioeconomic resources and infrastructure;
- conversion of natural vegetation to agricultural and developed land uses, and subsequent conversion or restoration of some agricultural lands to developed or natural lands;

- alteration of riverine hydrologic and geomorphic processes by flood management, water supply management, and other activities; and
- introduction of nonnative plant and animal species.

Past, present, and probable future projects causing related impacts are considered in this cumulative effects analysis, including regional projects for which USACE has provided approval or is in the process of considering Section 408 permission. For elements of these projects proposed for future implementation, the construction timing and sequencing is highly variable and may depend on uncertain funding sources. However, each of these past, present, and probable future projects must be considered in the context of environmental effects from the Proposed Action to properly evaluate the cumulative effects of this action and these other similar projects on the environment.

4.1.1.1 Lower American River Common Features Project

Congressional authorizations in WRDA 1996 and WRDA 1999 enabled USACE, the CVFPB, and SAFCA to undertake various improvements to the levees along the north and south banks of the American River, as well as the east bank of the Sacramento River. Under WRDA 1996, this involved the construction of 26 miles of slurry walls along the left and right banks of the American River. The WRDA 1999 authorization included a variety of additional levee improvements, such as levee raises and levee widening improvements, to ensure that the levees could pass an emergency release of 160,000 cfs. The WRDA 1996 and 1999 projects were completed in 2016, with mitigation site monitoring ongoing.

4.1.1.2 American River Watershed Common Features 2016 Project

The greater ARCF project is scheduled for construction from 2019 through 2025. The project involves construction of levee improvements along the American and Sacramento River levees as well as proposed improvements to the Natomas East Main Drainage Canal east levee and Magpie Creek (SAFCA previously completed improvements as an early implementation action in 2018). The levee improvements scheduled for implementation include construction of cutoff walls, erosion protection, seepage and stability berms, relief wells, levee raises, and a small stretch of new levee. In addition, USACE would widen the Sacramento Weir and Bypass. The project would also involve construction of several mitigation sites in the area. In addition to the improvements that are part of the Proposed Action, the ARCF GRR includes:

- construction of a seepage and stability berm along Front Street (constructed);
- construction of the Beach Stone Lakes Mitigation Site (constructed);
- construction of the large-scale fish habitat mitigation site in the Sacramento-San Joaquin Delta (planned for 2023-2024);
- Sacramento River East Levee Seepage and Stability Contract 1 (constructed);

- additional improvements to the Sacramento River East Levee between downtown Sacramento and Freeport (planned for 2021–2024);
- erosion protection on the American River (planned for 2021–2024);
- erosion protection on the Sacramento River (planned between 2021 and 2024);
- improvements to the "East Side Tributaries, including the Magpie Creek Diversion Channel, the east bank of the Natomas East Main Drainage Canal/Steelhead Creek. Pleasant Grove Creek Canal, and Dry, Robla, and Arcade Creeks (planned for 2023); and
- widening the Sacramento Weir and Bypass, located along the north edge of the City of West Sacramento in Yolo County (planned for 2023–2025).

4.1.1.3 American River Common Features Natomas Basin Project

In 2007, the Natomas Levee Improvement Project was authorized as an early-implementation project initiated by SAFCA to provide flood protection to the Natomas Basin as quickly as possible. These projects consist of improvements to the perimeter levee system of the Natomas Basin in Sutter and Sacramento Counties, as well as associated landscape and irrigation/drainage infrastructure modifications. SAFCA, DWR, the CVFPB, and USACE have initiated this effort with the aim of incorporating the Landside Improvements Project and the Natomas Levee Improvement Project into the Federally authorized American River Watershed Common Features Project. Construction of this early implementation project was completed in 2013. In 2014, the Natomas Basin Project was authorized by Section 7002 of the Water Resources Reform and Development Act of 2014 (Public Law 113-121). Construction of Reach H and I started in 2019 and are now completed. Reach B began construction in late 2021, and Reaches A, E, F, G, and are still in design. Construction on Reach A, starting with tree clearing, is expected to begin in late 2021. Construction and construction traffic effects of this project have the potential to contribute to cumulative impacts with the Proposed Action.

4.1.1.4 Local Funding Mechanisms for Comprehensive Flood Control Improvements for the Sacramento Area

SAFCA created a new assessment district ("CCAD2") to replace the existing Consolidated Capital Assessment District and updated the existing development impact fee to provide the local share of the cost of constructing and maintaining flood-risk reduction improvements and related environmental mitigation and floodplain habitat restoration along the American and Sacramento Rivers and their tributaries in the Sacramento metropolitan area. The program includes the projects necessary to provide at least a 100-year level of flood protection for developed areas in Sacramento's major flood plains as quickly as possible; achieve the State's 200-year flood protection standard for these areas within the time frame mandated by the Legislature; and improve the resiliency, robustness and structural integrity of the flood control system over time so that the system can safely contain flood events larger than a 200-year flood. The program

includes Yolo and Sacramento Bypass system improvements, levee modernization, and Lower Sacramento River erosion control. The Updated Local Funding Mechanisms Final Subsequent Program EIR was certified and the project was adopted in April 2016.

4.1.1.5 Sacramento River Bank Protection Project

The Sacramento River Bank Protection Project (SRBPP) was authorized to protect existing levees and flood control facilities of the Sacramento River Flood Control Project. The SRBPP was instituted in 1960 to be constructed in phases. Bank protection has generally been constructed on an annual basis. Phase I was constructed from 1963 to 1975 and consisted of 436,397 linear feet of bank protection. Phase II was authorized in 1974 and provided 405,000 linear feet of bank protection. The SRBPP directs USACE to provide bank protection along the Sacramento River and its tributaries, including that portion of the lower American River bordered by Federal flood control project levees. Beginning in 1965, erosion control projects at twelve sites covering 16,141 linear feet of the south and north banks of the lower American River have been implemented. This is an ongoing project, and additional sites requiring maintenance would continue to be identified indefinitely until authorized linear footage under the project is exhausted. WRDA 2007 authorized an additional 80,000 linear feet of bank protection to Phase II, which will be implemented under the SRBPP Post Authorization Change Report, which received approval in June 2020. This project is ongoing as of the date of this Draft Supplemental EIR.

4.1.1.6 West Sacramento General Reevaluation Report

The West Sacramento GRR study determined the Federal interest in reducing the flood risk within the West Sacramento project area. The purpose of the West Sacramento GRR is to bring the 50 miles of perimeter levees surrounding West Sacramento into compliance with applicable Federal and State standards for levees protecting urban areas. Proposed levee improvements would address seepage, stability, levee height, and erosion concerns along the West Sacramento levee system. Measures to address these concerns would include: (1) seepage cutoff walls; (2) stability berms; (3) seepage berms; (4) levee raises; (5) flood walls; (6) relief wells; (7) sheet pile walls; (8) jet grouting; and (9) bank protection.

The GRR was authorized in WRDA 2016 and, in the Fiscal Year 2019 work plan, received initial funding to begin preconstruction design. However, under the West Sacramento Area Flood Control Agency Early Implementation Program, three levee segments have already been completed: a small segment along the Sacramento River adjacent to the I Street Bridge, a stretch along the Sacramento River in the northern portion of the city near the neighborhood of Bryte, and the south levee of the Sacramento Bypass. The Southport setback levee was completed in 2020, with continued work to establish habitat vegetation in the floodplain in 2021. Construction and construction traffic effects of this project have the potential to contribute to cumulative impacts with the Proposed Action.

4.1.1.7 Central Valley Flood Protection Plan of 2017

The Central Valley Flood Management Planning Program is one of several programs managed by DWR under FloodSAFE California, a multifaceted initiative launched in 2006 to improve integrated flood management in the Central Valley, including the North Sacramento Streams and Sacramento River East Levee Improvements areas. The Central Valley Flood Management Planning Program addresses State flood management planning activities in the Central Valley.

The Central Valley Flood Protection Plan (CVFPP) is one of several documents adopted by the CVFPB to meet the requirements of flood legislation enacted in 2007 and, specifically, the Central Valley Flood Protection Act of 2008. DWR adopted the updated CVFPB in 2017, with a focus on the Sacramento and San Joaquin Watershed Basin-Wide Feasibility Studies (BWFSs), Regional Flood Management Planning, and the Central Valley Flood System Conservation Strategy. DWR is in the process of preparing the 2022 CVFPP Update that will focus on climate resilience, project implementation, accomplishments, and performance tracking, and alignment with other State efforts. The results of these efforts support implementation of future CVFPP actions.

The CVFPP contains a broad plan for flood management system improvements, and ongoing planning studies, engineering, feasibility studies, designs, funding, and partnering are required to better define, and incrementally fund and implement, these elements over the next 20 to 25 years. Although most CVFPP projects are not well-defined and would be implemented substantially later than the Proposed Action, it is important to consider the long-term aspects of the CVFPP in conjunction with the Proposed Action.

As part of the CVFPP, the Sacramento BWFS indicates that the following improvements to the Yolo Bypass flood control system could be made and therefore are considered as future projects: constructing a setback levee in the Lower Elkhorn Basin on the east side of the Upper Yolo Bypass and on the north side of the Sacramento Bypass (discussed separately in further detail below); widening the Fremont Weir and the Sacramento Weir; widening the Upper Yolo Bypass by constructing setback levees along the east side of the Bypass in the Upper Elkhorn Basin; constructing fix-in-place improvements to the existing levees in various locations along the west and east sides of the Upper Yolo Bypass; widening the Upper Yolo Bypass by constructing setback levees north of Willow Slough and north of Putah Creek on the west side of the Bypass; adding a tie-in to the Stockton Deep Water Ship Channel and channel closure gates; and constructing a floodwall on the west side of the Sacramento River at Rio Vista.

Additional actions contemplated under the Sacramento BWFS include the following: extending the life of the Cache Creek Settling Basin by expanding it to the north; degrading the step levees at the north end of Liberty Island; widening the Lower Yolo Bypass by constructing a setback levee on the west side of the Bypass near the north end of Little Egbert Tract; degrading the existing levees along the Stockton Deep Water Ship Channel along the west side of Prospect Island; degrading the existing levees on the

northern and southern ends of Little Egbert Tract; removing the Yolo Shortline Railroad tracks and crossing over the Yolo Bypass near the I-80 overcrossing; and raising and strengthening the levees along the entire west side of the Lower Yolo Bypass.

4.1.1.8 Lower Elkhorn Basin Levee Setback Project

The project encompasses a portion of the Phase I implementation of Yolo Bypass System Improvements pursuant to DWR's Sacramento BWFS and therefore is focused on levees in the Lower Elkhorn Basin and the Sacramento Bypass. Consistent with the Sacramento BWFS, the project is intended to reduce flooding in the Lower Sacramento River Basin by increasing the capacity of the Yolo Bypass. This increased capacity will be accomplished by constructing a setback levee on the north side of the Sacramento Bypass as an early implementation action for the ARCF project and constructing a setback levee in the Lower Elkhorn Basin on the east side of the Yolo Bypass.

The Lower Elkhorn Basin Levee Setback project will also include implementing a project mitigation strategy designed to avoid, minimize, reduce, and mitigate impacts on sensitive habitats and special status species caused by the project, in a manner that optimally protects the natural environment, especially riparian habitat and stream channels suitable for native plants, wildlife habitat, agricultural lands, and public recreation. Construction of the Lower Elkhorn Basin Levee Setback project began construction in 2020 and is projected to be completed in 2025. Construction effects of this project have the potential to contribute to cumulative impacts with the Proposed Action.

4.1.1.9 Folsom Dam Safety and Flood Damage Reduction Project

The Folsom Dam Safety and Flood Damage Reduction Project, referred to as the Joint Federal Project, addressed the dam safety hydrologic risk at Folsom Dam and improved flood protection to the Sacramento area. Several activities associated with the project included: the Folsom Dam Auxiliary Spillway, static upgrades to Dike 4, Mormon Island Auxiliary Dam modifications, and seismic upgrades (piers and tendons) to the Main Concrete Dam. The project was completed in fall 2017.

4.1.1.10 Folsom Dam Water Control Manual Update

The Folsom Dam Water Control Manual (WCM) was updated on June 12, 2019 to reflect authorized changes to the flood management and dam safety operations at Folsom Dam to reduce flood risk in the Sacramento area. The WCM Update utilizes existing and authorized physical features of the dam and reservoir, specifically the recently completed auxiliary spillway. Along with evaluating operational changes to utilize the additional capabilities created by the auxiliary spillway, the WCM Update assessed the use of available technologies to enhance the flood risk management performance of Folsom Dam to includes a refinement of the basin wetness parameters and the use of real time forecasting.

Further, the WCM Update evaluated options for the inclusion of creditable flood control transfer space in Folsom Reservoir in conjunction with Union Valley, Hell Hole, and

French Meadows Reservoirs (also referred to as Variable Space Storage). The evaluation resulted in an Engineering Report as well as a Water Control Manual implementing the recommendations of the analysis.

4.1.1.11 Folsom Dam Raise

Construction of the Folsom Dam Raise project will follow completion of the Joint Federal Project and the WCM projects. The Dam Raise project includes raising the right- and left-wing dams, Mormon Island Auxiliary Dam, and Dikes 1–7 around Folsom Reservoir by 3.5 feet. The raising of Dike 8 was completed in 2020. The Dam Raise project also includes the three emergency spillway gates and three ecosystem restoration projects (automation of the temperature control shutters at Folsom Dam and restoration of the Bushy and Woodlake sites downstream). Similar to the ARCF Project, the Folsom Dam Raise Project was fully funded by the Bipartisan Budget Act of 2018. Construction activities began in 2019 included Dike 8 construction, to be followed by Dikes 1-7, the Mormon Island Auxiliary Dam, and the Left and Right wing of Folsom Dam in 2022. The ecosystem restoration projects are not scheduled at this time. Construction and construction traffic effects of this project have the potential to contribute to cumulative impacts with the Proposed Action.

4.1.1.12 SAC 5 Corridor Enhancement Project

Caltrans is constructing the SAC 5 Corridor Enhancement Project on Interstate 5 (I-5) from 1.1 miles south of Elk Grove Boulevard to the American River Viaduct. The project will rehabilitate pavement and other related assets, construct 23 miles of new High Occupancy Vehicle lanes, install new fiber optic lines, and extend the I-5 northbound #1 lane to improve merging. The project includes rehabilitating 67 lane miles of mainline and all ramps/connectors. The project also includes adding auxiliary lanes and extending acceleration and deceleration lanes. Project construction requires lane closures on I-5 and is expected to continue through December 2022. Construction and construction traffic effects of this project have the potential to contribute to cumulative impacts with the Proposed Action.

4.1.1.13 Bridge District Specific Plan

The Bridge District Specific Plan, formerly the Triangle Plan, was adopted in 1993 and significantly updated in 2009 (City of West Sacramento 2009). The intent of the Bridge District Specific Plan was to provide a framework for development of a well-planned, waterfront-oriented urban district for the City of West Sacramento, along the west bank of the Sacramento River. Several housing complexes have been built, as well as other riverfront recreational improvements, and the Barn, a local event space and beer garden along the Sacramento River just south of Sutter Health Park (formerly known as Raley Field). Ongoing development includes additional housing units currently under construction. Construction, road construction, and construction traffic associated with the Bridge District have the potential to contribute to cumulative impacts with the Proposed Action.

4.1.1.14 Sacramento Railyards Project

The Railyards district is located just north of Downtown Sacramento and south of the River District and once served as the western terminus of the 1860s Transcontinental Railroad, with the largest locomotive repair and maintenance facility west of the Mississippi River. Today, the Railyards continue to house a major transportation hub and the City of Sacramento has proposed to redevelop the area into a mixed-use, transit-oriented development. The historic 244-acre Southern Pacific site would be transformed into a dynamic, urban environment featuring a state-of-the-art mass transit hub that would serve residents, workers, and visitors. In October 2016, the City Council approved a planning entitlement for the Sacramento Railyards. The project includes housing units, retail space, office space, a medical campus, hotels, parks, and a soccer stadium. Construction has been scheduled on Phase 1 starting in 2018 with development of the remaining phases to be determined at some future time. Construction, road construction, and construction traffic associated with the Railyards project have the potential to contribute to cumulative impacts with the Proposed Action.

4.1.1.15 Delta Shores Development Project

The Delta Shores is an approximately 800-acre master planned development that includes an estimated 1.3 million square feet of constructed and operating retail space, an estimated 250,000 square feet of hotel and commercial uses, and an estimated 4,900 residential units. Most of the project site is located east of I-5 at Cosumnes River Boulevard, east of Freeport and north of the Sacramento Regional County Sanitation District Wastewater Treatment Plant Bufferlands. The Beach Lake Levee (operated and maintained by SAFCA) is adjacent to the Delta Shores southern boundary (east of I-5). Approximately 100 acres of the Delta Shores project site lies along the west side of I-5 and abuts the Sacramento River East Levee in the northwest corner and near the southwest corner. In this western portion of Delta Shores, medium- and high-density residential housing will be developed on the north side of Stonecrest Avenue. Adjacent to and north of the housing, and adjacent to Freeport Boulevard on the west side, a park will be developed. Medium- and low-density residential housing will be developed on the south side of Stonecrest Avenue.

Cosumnes River Boulevard was recently extended by approximately 3.5 miles (from the east side of State Route 99 to I-5), and a new I-5 interchange was constructed to provide regional connectivity for local residents and access to the future Delta Shores development (particularly the shopping center); the road and interchange improvements were completed in 2015. Construction on the shopping center began in 2016, and the complex opened in 2017. Construction and construction traffic associated with Delta Shores have the potential to contribute to cumulative impacts with the Proposed Action.

4.1.1.16 Caltrans SAC-51 American River Bridge Deck Replacement Project

Caltrans proposes to rehabilitate the American River Bridge along State Route (SR) 51/ Business Intestate 80 in Sacramento County. The project would remove and replace the existing concrete deck, remove and replace the steel girder post-tensioning systems, modify the existing soundwall, install sheet piling around piers for scour mitigation, construct concrete catcher blocks, widen the bridge to accommodate traffic during construction, add a Class I bike/pedestrian path, and plan for future transportation needs on SR 51. The purpose of the project is to replace the deck on the American River Bridge on SR 51 in Sacramento County, prevent scour, and provide a multimodal connection between downtown and eastern Sacramento and plan for future transportation needs. The proposed work would repair, protect, and extend the service life of the deck starting in 2022. Construction and construction traffic associated with Caltrans SAC-51 project have the potential to contribute to cumulative impacts with the Proposed Action.

4.1.1.17 City of Sacramento Two Rivers Trail Phase II Project

The Two Rivers Trail Phase II project will provide a 2.4 mile long multi-use trail between Sutter's Landing Regional Park and H Street near California State University - Sacramento. The trail will provide residents of River Park and East Sacramento a safe, convenient, and protected path into downtown Sacramento. The overall goal of the project is to eventually have the trail connect to the Sacramento River Parkway and create a continuous trail system along both sides of the Sacramento and American Rivers. In addition, the project will clear the next phase of the trail between Sutter's Landing Park and the Sacramento Northern Bike Trail. The proposed work to construct the trail will begin in 2023. Construction and construction traffic associated with the Two Rivers Trail Phase II project have the potential to contribute to cumulative impacts with the Proposed Action.

4.2 Cumulative Effects

4.2.1 Visual Resources

Cumulative impacts on visual resources are primarily related to other construction projects that could occur within the same visual viewscape as the Proposed Action Area at the same time and result in loss of visual quality both during construction and after construction. Construction of Alternative 2 approved of in the Record of Decision for the ARCF GRR FEIS/FEIR would result in a significant number of large trees and other vegetation removed along the Sacramento River and the American River. Other projects in the cumulative setting (see Section 4.1 in this chapter) have and could result in the removal of large trees and other vegetation. Implementation of the Proposed Action, when combined with other past, current, and future projects in the vicinity, would result in a significant cumulative impact on visual resources, primarily from removal of vegetation. Additionally, the long time period for replanted vegetation to reach a size similar to the vegetation removed as a result of construction would be considered a cumulatively significant effect on visual resources along the Sacramento and American Rivers.

As part of the Proposed Action, construction crews, equipment, and haul trucks would be visible to residents adjacent to local streets, and staging areas, and to residences adjacent to the work sites. In addition, construction would be visible to recreationists within the American River Parkway. However, construction would be temporary, and because construction would proceed along the levees in a linear fashion, the views of construction crews, equipment, and haul trucks would be of short duration, and other current projects in the cumulative setting would not be visible within the same viewshed as the Proposed Action. Additional nighttime lighting for the Proposed Action staging areas would be short term and would add few sources of light to the current cumulative nighttime light in the urbanized areas adjacent to the staging areas. Further, nighttime light from the Proposed Action would be mitigated to reduce effects to minimal levels, as described in Chapter 3, Section 3.2, *Visual Resources*, and the Proposed Action would not result in a cumulatively considerable incremental contribution to significant cumulative effects related to visual resources.

4.2.2 Hydrology and Water Quality

Most of the levee projects in the cumulative setting, including the Proposed Action, involve subsurface geotechnical work to repair levees in place and, consequently, there would be no effects on flooding. Some projects, such as the West Sacramento GRR and the SRBPP, include levee raises, flood walls, and bank protection. In addition, the West Sacramento GRR and Lower Elkhorn Basin Levee Setback Project include construction of new setback levees. The Proposed Action, in addition to other levee projects in the region, are designed to current Federal flood design criteria and include vegetation to help stabilize the banks and, thus, reduce the rate and amounts of surface run-off from the levee slope into waterways. The Proposed Action would not result in a cumulatively considerable incremental contribution to significant cumulative effects related to flood system capacity.

Related projects, including the Sacramento River Bank Protection Project and the West Sacramento GRR, could be under construction during the same time frame as the Proposed Action. If construction occurs during the same time frame, water quality could be diminished, primarily due to increased turbidity from soil released during construction activities. Water quality could be affected in or adjacent to the Proposed Project area and upstream and downstream of the work area. Construction activities such as clearing and grubbing, grading, and rock placement, have the potential to temporarily degrade water quality through the direct release of soil and construction materials into water bodies or the indirect release of contaminants into water bodies through runoff. All projects would be required to comply with the NPDES Construction General Permit requirements of the RWQCB and overall water quality would be required to meet the Basin Plan objectives. The Proposed Action would not result in a cumulatively considerable incremental contribution to significant cumulative effects related to water quality.

4.2.3 Vegetation and Wildlife

The Proposed Action has the potential to contribute to the loss or degradation of sensitive habitats, including riparian woodland and scrub, waters of the United States, and waters of the State and forestland. Similar potential for adverse effects on habitats would be associated with the flood-risk reduction projects, including future ARCF contracts proposed along the Sacramento River and the American River, and removal of high-hazard vegetation by levee maintaining agencies in the Sacramento area and surrounding region. Such projects would generally continue to contribute to the loss or degradation of sensitive habitats and forestland. Most potential adverse effects of the Proposed Action and the related levee projects would be associated with construction disturbances of habitats, but permanent loss of habitat would also result from some of the individual levee improvement projects and the development projects. Implementation of Mitigation Measures described in Section 3.4, *Vegetation and Wildlife*, would reduce or avoid the effects of the Proposed Action in accordance with the requirements of the Federal Endangered Species Act and California Fish and Game Code (including the California Endangered Species Act) and other regulatory programs that protect habitats, such as Clean Water Act (CWA) Sections 401 and 404. Although the Proposed Action's temporary impacts would be significant, the Proposed Action would not result in a cumulatively considerable incremental contribution to significant cumulative effects related to the permanent loss or degradation of sensitive habitats or loss of forestland.

4.2.4 Fisheries

Project implementation has the potential to contribute to the loss or degradation of fish habitat, including near-shore aquatic SRA habitat. Similar potential for adverse effects on habitats would be associated with the flood-risk reduction projects, including future ARCF contracts proposed along the American River and Sacramento River, and construction of bank protection projects and removal of high-hazard vegetation by levee maintaining agencies in the Sacramento area and surrounding region. Such projects would generally continue to contribute to the loss or degradation of fish habitat, including SRA habitat, resulting in significant cumulative impacts. Potential adverse effects of the Proposed Action and the related levee projects would be associated with construction disturbances of aquatic habitats, but permanent loss of SRA habitat would also result from some of the individual levee improvement projects and the development projects. Implementation of Mitigation Measures described in Section 3.5, *Fisheries*, including water quality protection measures, and establishment of on-site and off-site SRA habitat creation, and would reduce or avoid the effects of the Proposed Action in accordance with the requirements of the Federal Endangered Species Act and California Fish and Game Code (including the California Endangered Species Act) and other regulatory programs that protect habitats, such as CWA Sections 401 and 404. Although the Proposed Action's temporary impacts would be less than significant with mitigation, the Proposed Action would not result in a cumulatively considerable contribution to significant cumulative effects on the permanent loss or degradation of fish habitat.

4.2.5 Special Status Species

Project implementation has the potential to adversely affect special status species: Crotch bumble bee, valley elderberry longhorn beetle, western pond turtle, western yellow-billed cuckoo, bank swallow, Swainson's hawk, Cooper's hawk, burrowing owl, white-tailed kite, purple martin, heron- and egret rookeries, other nesting birds, and bats, American badger, Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, Central Valley steelhead, Central Valley fall-/late fall-run Chinook salmon, hardhead, western river lamprey, and Sanford's arrowhead. Similar potential for adverse effects on special status species and their habitats would be associated with the flood-risk reduction projects, including future ARCF contracts proposed along the American River and Sacramento River, and removal of high-hazard vegetation by levee maintaining agencies in the Sacramento area and surrounding region. Such projects would generally continue to adversely affect special status species. Most potential adverse effects of the Proposed Action and nearby levee projects relate to plants, fish, and wildlife would be associated with construction disturbances of special status species and their habitats, but permanent loss of habitat would also result from some of the individual levee improvement projects and the development projects. These adverse effects could contribute to species declines and losses of habitat that have led to the need to protect these species under the Federal Endangered Species Act and the California Fish and Game Code (including the California Endangered Species Act). Implementation of Mitigation Measures described in Section 3.6, *Special Status Species*, would reduce or avoid the effects of the Proposed Action in accordance with the requirements of the Federal and California Endangered Species Acts, and other sections of the California Fish and Game Code. Therefore, the Proposed Action would not result in a cumulatively considerable incremental contribution to significant cumulative adverse effects on special status species.

4.2.6 Cultural Resources

Implementation of the Proposed Action, other flood-risk reduction projects, including the ARCF GRR projects proposed along the American River and Sacramento River, and other projects considered in this cumulative analysis, have the potential to contribute to the loss or degradation of known and unrecorded archaeological resources, known prehistoric-period cultural landscapes, known and unknown human remains, and known and unknown historic-period archaeological resources.

Most potential effects of the Proposed Action and other related projects to cultural resources would be associated with construction disturbances of archaeological sites, prehistoric cultural landscapes, and human remains. These effects could contribute to the loss of intact cultural resources and human remains in the Sacramento region.

Implementation of the mitigation measures presented in Chapter 3, Section 3.7, *Cultural Resources*, would reduce or avoid the effects of the Proposed Action on known cultural and tribal cultural resources and on unknown archaeological resources, tribal cultural, and human remains that could potentially be discovered during project construction. As

such, the Proposed Action would not result in a cumulatively considerable incremental contribution to significant cumulative effects on cultural resources.

4.2.7 Transportation

Most traffic effects related to the Proposed Action would occur along I-80, U.S. 50, and local roadways within the City and County of Sacramento, in the vicinity of the Proposed Action area. Other levee projects would occur at locations that are more distant from the Proposed Action. There are no known projects that would affect the local haul routes shown in Chapter 2, *Project Description*. Because potentially significant traffic effects are only expected to occur for approximately six months during the project construction period, it is difficult to predict if other projects would have traffic volumes that would cumulatively affect traffic during these same time periods. If other projects substantially affect traffic during these peak construction periods, the potential cumulative effects would be significant on segments of I-80 and U.S. 50, and the Proposed Action would make a considerable contribution. Mitigation described in Section 3.8, *Transportation and Circulation*, includes a traffic control and road maintenance plan to reduce the Proposed Action's impact. This mitigation requires emergency service providers be notified in advance of road closures and detours and requires emergency access to be maintained. Because other major construction projects would also implement traffic control plans specifically designed to provide appropriate emergency access, the Proposed Action would not result in an incremental contribution to a significant cumulative effect related to emergency vehicle access or response times.

Bicycle and pedestrian paths affected by the Proposed Action would be in the vicinity of the construction activities and along potential haul routes within the American River Parkway and nearby neighborhoods. As part of mitigation measures, the Proposed Action would always provide signage and detours to maintain safe pedestrian and bicyclist access around the construction areas. In general, major construction projects concurrent with the Proposed Action would also implement traffic control plans specifically designed to provide continued safe routes for alternative modes of transportation during construction. Therefore, the Proposed Action would not result in an incremental contribution to a significant cumulative effect related to performance or safety of alternative modes of transportation.

4.2.8 Air Quality

Air quality is inherently a cumulative effect because existing air quality is a result of past and present projects. No single project would be sufficient in size, by itself, to result in nonattainment of the regional air quality standards.[118] Several other construction projects (see list in Section 4.1.1, *Projects Contributing to Potential Cumulative Effects*) are expected to occur simultaneously in the Sacramento Valley Air Basin during the planned construction period for the Proposed Action. The related projects have the potential to

[118] SMAQMD. 2014 (as amended). *Guide to Air Quality Assessment in Sacramento County* (CEQA Guide). Available: http://www.airquality.org/businesses/ceqa-land-use-planning/ceqa-guidance-tools. Accessed March 26, 2020.

generate construction-related emissions that individually exceed SMAQMD's threshold of significance. However, all construction projects in the SMAQMD, including the Proposed Action are required to mitigate and offset emissions that have the potential to negatively affect air quality in the Sacramento Valley Air Basin through implementation of SMAQMD emissions reductions practices. In addition, many offset projects create long-term, permanent emissions reductions (which result in a benefit).

Furthermore, the Proposed Action is part of the larger ARCF project, which has been determined to meet the requirements of general conformity with the provisions of the Clean Air Act (CAA) through payment of fees to offset NOx emissions. As discussed in Section 3.9, *Air Quality*, the Proposed Action would result in a cumulatively considerable incremental contribution to a significant cumulative effect related to regional air quality, and this contribution would be mitigated through implementation of Mitigation Measures described in Section 3.9, *Air Quality*.

With respect to localized air pollutants such as CO, TACs, and odors, the Proposed Action and the related projects would generate these pollutants only during construction, and the construction activities for these projects would be temporary and short term. Some of the related projects may generate concentrations of these pollutants at levels that exceed applicable thresholds. However, the CEQA and NEPA documents for the related cumulative projects contain mitigation measures that must be implemented to reduce individual project emissions. As discussed in Section 3.9, the Proposed Action would not generate CO, TACs, or odors at levels that would represent a health hazard. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative effect related to generation of CO, TACs, or odors during construction.

4.2.9 Greenhouse Gas Emissions and Energy Consumption

Climate change as related to GHG emissions is inherently cumulative. Though significance thresholds can be developed by air districts and State and Federal regulatory agencies, these thresholds and their related goals are ultimately designed to affect change at a global level. Therefore, the analysis presented in Section 3.10, *Greenhouse Gas Emissions and Energy Consumption*, includes the analysis of both the project and cumulative effects. The Proposed Action and the related cumulative projects would result in the generation of GHGs, in proportion to the size of each individual project, amount and time of operation of construction equipment, and distances traveled. However, the Proposed Action and the related projects that would generate GHG emissions more than threshold levels would implement the mitigation measures identified in their respective CEQA and/or NEPA documents and adopted to reduce emissions and/or purchase carbon offsets. Furthermore, the Proposed Action would not exceed the Council on Environmental Quality's GHG threshold guidance levels and the Proposed Action would be consistent with Statewide climate change adaptation strategies. Therefore, the Proposed Action would not result in a considerable incremental contribution to a significant cumulative effect related to climate change or energy consumption.

4.2.10 Noise

None of the cumulative projects would be located in the immediate vicinity of the Proposed Action. A cumulative effect might occur if construction activities associated with any of the related project(s) were to occur within 500 feet of the Proposed Action's construction activities, and also, if the construction activities of other projects were to occur at the same time or overlap at some point during the construction activities of the Proposed Action. Furthermore, although any of the related cumulative projects could require construction that exceeds the respective local City or County noise ordinances, the Proposed Action would limit noise-generating activities to the hours when the City of Sacramento exempts construction noise. Therefore, the Proposed Action would not result in a considerable incremental contribution to a significant cumulative effect related to construction equipment or traffic noise levels in excess of standards established in the local general plan or noise ordinance, in other applicable local, State, or Federal standards, or exceeding the ambient background.

4.2.11 Recreation

The Proposed Action, along with the related cumulative projects, may result in temporary closure of recreational facilities, potential damage to recreational facilities, and temporary diminishment of recreational experiences during construction. Implementation of Mitigation Measures described in Section 3.12, *Recreation*, would reduce the Proposed Action's effects, but temporary impacts would remain significant and unavoidable. Because of the temporary nature of the construction effects and the likelihood that any access restrictions or degradation of the quality of recreational experiences would last for approximately 3–7 months in any location, the Proposed Action's effects on local recreation are not anticipated to overlap with effects of other related cumulative projects. Consequently, cumulative effects related to recreation resources would be less than significant, and the Proposed Action would not result in a considerable incremental contribution to a significant cumulative effect related to short-term temporary changes in recreational opportunities during project construction activities.

4.2.12 Public Utilities and Service Systems

The Proposed Action, and future ARCF projects along the American River and Sacramento River, and all the other related cumulative projects, could temporarily disrupt utility service as a result of inadvertent damage to existing utility equipment, facilities, and infrastructure. However, any utility and service system effects would be geographically isolated, short in duration, and occur on a project-by-project basis. Thus, these disruptions would not combine to form cumulative effects. Therefore, the Proposed Action would not result in a considerable incremental contribution to a significant cumulative effect related to potential disruption of utility services.

Temporary construction activities associated with the Proposed Action and related projects in the Sacramento Region would generate organic and non-organic solid waste. Waste material that is not suitable for disposal on-site would likely be disposed of in

Kiefer or the L and D Landfills. Both landfills currently provide solid waste disposal services to municipal and commercial customers and provide construction demolition and debris disposal in Sacramento County. Both landfills have sufficient permitted capacity to accommodate solid waste disposal needs for Sacramento County, including the disposal needs of the Proposed Action and the related cumulative projects. Therefore, the Proposed Action would not result in a considerable incremental contribution to a significant cumulative effect related to increases in solid waste generation.

4.2.13 Hazards and Hazardous Materials

Implementation of the Proposed Action and the related projects would include handling small quantities of hazardous materials used in construction equipment (e.g., fuels, oils, lubricants) and during construction activities. The storage, use, disposal, and transport of hazardous materials are extensively regulated by various Federal, State, and local agencies. Permits are required for the use, handling, and storage of these materials, and compliance with appropriate regulatory agency standards agencies is also required to avoid releases of hazardous waste. Construction companies that handle hazardous substances for the Proposed Action and all the related projects are required by law to implement and comply with these existing regulations. Furthermore, any effect that might occur would be localized to the area where the materials are being used and would not be additive to other hazardous materials-related effects associated with the Project Area. None of the materials would be acutely hazardous, and they would not be used in within 0.25 mile of schools. Thus, the Proposed Action would not result in a cumulatively considerable incremental contribution to a significant cumulative effect related to the potential for accidental spills of materials used during construction activities or handling of hazardous materials within 0.25 mile of a school.

Project implementation could result in exposure to unknown hazardous materials sites during construction activities. It is unknown whether any of the related project sites contain existing hazards materials. However, Mitigation Measures identified in Section 3.14, *Hazards and Hazardous Materials*, would minimize potential exposure to unknown hazards and hazardous materials during implementation of the Proposed Action. Further, only future related ARCF GRR projects along the LAR are located in close proximity to the Project Area. Therefore, the Proposed Action would not result in a considerable incremental contribution to a significant cumulative effect related to existing hazardous materials.

Wildland fire represents a hazard particularly during the hot, dry summer and fall in the Central Valley. Most of the related projects, including future levee and development projects, would be implemented in urbanized areas, similar to the Proposed Action, with a relatively low risk of wildland fire, and the Proposed Action and related projects are not located in a high fire hazard severity zone. Therefore, there would be no significant cumulative impact related to wildland fire risk, and the Proposed Action would not result in a considerable incremental contribution to a significant cumulative effect related to wildland fire hazards.

4.3 Growth-Inducing Effects

Because the Proposed Action would not involve construction of housing, the action would not directly induce growth. Proposed Action-related construction activities would generate temporary and short-term employment, but the construction jobs would be filled from the existing local employment pool and would not indirectly result in a population increase or induce growth by creating permanent new jobs. Furthermore, the project would not involve constructing businesses or extending roadways or other infrastructure that could indirectly induce population growth. Consequently, the Proposed Action would not induce growth leading to changes in land use patterns, population densities, or related impacts on environmental resources.

Levee improvements would benefit areas identified for future growth anticipated in the vicinity of the American River in the City of Sacramento and Sacramento County. Local land use decisions are within the jurisdiction of the City of Sacramento and Sacramento County, both of which have adopted general plans consistent with State law. The City of Sacramento 2035 General Plan[119] and currently planned 2040 General Plan provide an overall framework for growth and development in the City. The City General Plan identified a few areas as "New Growth Areas" throughout the City boundaries and in "Special Study Areas." The Sacramento County 2030 General Plan[120] and current proposed amendments to the general plan provide a framework for development in the County, including areas identified for future growth that benefit from the levee system along the American River.

The levee improvements would increase the levee's resistance to erosion, provide better overall levee stability and reliability, and provide additional flood protection for growth anticipated in the City's and County's General Plans. Growth throughout the Project Area has already been planned as part of the City's and County's General Plans. The Proposed Action would not allow additional growth to occur other than the growth that has already been planned and approved, nor would it change the locations where this growth is planned to occur. Consequently, implementation of the Proposed Action would not affect current and/or projected population growth patterns within the City of Sacramento and County of Sacramento as already evaluated and planned for in the both the City's and County's General Plans and, therefore, would not have an indirect effect on growth. The Proposed Action would mitigate flood risks by improving levees to meet engineering standards associated with the National Flood Insurance Program; it would not alter protection for the 100-year event nor does it transfer any such risk to other areas. The Proposed Action would not directly or indirectly support development in the base floodplain.

[119] City of Sacramento. 2015. *2035 General Plan*. Adopted March 3, 2015.
[120] Sacramento County. 2011. *2030 General Plan*. Adopted November 9, 2011, as amended.

4.4 Irreversible and Irretrievable Commitment of Resources

The discussion of irreversible and irretrievable commitments of resources in the 2016 ARCF GRR FEIS/FEIR adequately describes the effects of the Proposed Action.

CHAPTER 5
Compliance with Federal and State Laws and Regulations

5.1 Federal Laws and Regulations

5.1.1 Clean Air Act of 1970

The Federal Clean Air Act (CAA) of 1970, as amended (42 USC 7401 et seq.) requires the U.S. Environmental Protection Agency (EPA) to establish national ambient air quality standards (NAAQS). EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, PM_{10}, $PM_{2.5}$, CO, NO_2, SO_2, and lead. The primary standards protect the public health and the secondary standards protect public welfare. The CAA also requires each state to prepare an air quality control plan, referred to as a State Implementation Plan.

An analysis of air quality effects of the Proposed Action is presented in Section 3.9, *Air Quality*. The Proposed Action is not expected to violate any Federal air quality standards. Although the NOx emissions of the ARCF 16 project as a whole are expected to exceed the EPA's General Conformity *de minimis* thresholds during several of the ARCF 16 project's construction years, including 2022, and 2023, USACE expects to purchase offsets for NOx emissions from SMAQMD. The CAA requires that EPA set emissions standards for a range of pollution sources. Specifically, EPA and the National Highway Traffic Safety Administration (NHTSA) regulate emissions from on-road vehicles include automobiles and light-duty trucks. In 2012, EPA and NHSTA established the Corporate Average Fuel Economy (CAFE) standards for automobiles and light-duty trucks for model years 2014 and beyond (77 *Federal Register* [FR] 62624). Under the original iteration of the CAFE standards, fuel economy would be raised to the equivalent of 54.6 miles per gallon by 2025 (77 FR 62630).

On April 2, 2018, EPA administrator announced a final determination that the current standards should be revised. On August 2, 2018, the U.S. Department of Transportation (DOT) and EPA proposed the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE Rule), which would amend existing CAFE standards for passenger cars and light-duty trucks through retaining the current model year 2020 standards through model year 2026 and establish new standards covering model years 2021 through 2026 (NHTSA 2018).

The CAA grants California the ability to enact and enforce stricter fuel economy standards through the acquisition of an EPA-issued waiver. Each time California adopts a new vehicle emission standard, the State applies to EPA for a preemption waiver for

those standards. However, Part One of the SAFE Rule, which became effective on November 26, 2019, revokes California's existing waiver to establish a nation-wide standard (84 FR 51310). At the time of preparing this environmental document, the implications of the SAFE Rule on California's future emissions are contingent upon a variety of unknown factors.

5.1.2 Community Right-to-Know Act of 1986

The Community Right-to-Know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act, imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released. The Proposed Action would comply with this law.

5.1.3 Energy Policy and Conservation Act and Corporate Average Fuel Economy Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve oil. Pursuant to this Act, the National Highway Traffic Safety Administration (NHTSA), part of the U.S. Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with the CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the country. EPA calculates a CAFE value for each manufacturer based on the city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, DOT is authorized to assess penalties for noncompliance. Under the Energy Independence and Security Act of 2007 (described below), the CAFE standards were revised for the first time in 30 years then later updated in 2012 and 2019. The Proposed Action would comply with this law.

5.1.4 Energy Policy Act of 1992 and 2005

The Energy Policy Act of 1992 (EPAct) was enacted to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain Federal, State, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions are allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs. The Energy Policy Act of 2005 provides

renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a Federal purchase requirement for renewable energy. The Proposed Action would comply with this law.

5.1.5 Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 is designed to improve vehicle fuel economy and help reduce U.S. dependence on oil. It represents a major step forward in expanding the production of renewable fuels, reducing dependence on oil, and confronting global climate change. The Energy Independence and Security Act of 2007 increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels; and reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020—an increase in fuel economy standards of 40 percent.

By addressing renewable fuels and the CAFE standards, the Energy Independence and Security Act of 2007 builds upon progress made by the Energy Policy Act of 2005 in setting out a comprehensive national energy strategy for the 21st century; however, on April 2, 2018, EPA administrator announced a final determination that the current standards should be revised. On August 2, 2018, DOT and EPA proposed the Safer Affordable Fuel-Efficient Vehicles Rule (SAFE Rule), which would amend existing CAFE standards for passenger cars and light-duty trucks through retaining the current model year 2020 standards through model year 2026 and establish new standards covering model years 2021 through 2026 (NHTSA 2018).

The CAA grants California the ability to enact and enforce stricter fuel economy standards through the acquisition of an EPA-issued waiver. Each time California adopts a new vehicle emission standard, the State applies to EPA for a preemption waiver for those standards. However, Part One of the SAFE Rule, which became effective on November 26, 2019, revokes California's existing waiver to establish a nation-wide standard (84 FR 51310). At the time of preparing this environmental document, the implications of the SAFE Rule on California's future emissions are contingent upon a variety of unknown factors. The Proposed Action would comply with this law.

5.1.6 Hazardous Materials Transportation Act

The Secretary of the U.S. Department of Transportation (DOT) receives the authority to regulate the transportation of hazardous materials from the Hazardous Materials Transportation Act, as amended and codified in 49 USC 5101 et seq. DOT, in conjunction with the USEPA, is responsible for enforcement and implementation of federal laws and regulations pertaining to safe storage and transportation of hazardous materials. 49 CFR Sections 171 through 180, regulate the transportation of hazardous materials, types of material defined as hazardous, and the marking of vehicles

transporting hazardous materials. Contractors would be required to comply with the Act for all storage and transportation of hazardous materials and wastes to reduce the possibility of inadvertent releases and spills. The Proposed Action would comply with this law.

5.1.7 Resources Conservation and Recovery Act (RCRA) of 1976

The Resource Conservation and Recovery Act (42 USC § 6901 et seq.) was adopted in 1976 and codified in 40 CFR Part 260. RCRA Subtitle C regulates the generation, transportation, treatment, storage and disposal of hazardous waste by "large-quantity generators" (1,000 kilograms per month or more) as well as "small quantity generators" (under 1,000 kilograms) through comprehensive life cycle or "cradle to grave" tracking requirements. The requirements include maintaining inspection logs of hazardous waste storage locations, records of quantities being generated and stored, and manifests of pick-ups and deliveries to licensed treatment/storage/disposal facilities. RCRA also identifies standards for treatment, storage, and disposal. Contractors would be required to comply with RCRA hazardous waste requirements to reduce the possibility of inadvertent releases and spills. The Proposed Action would comply with this law.

5.1.8 Occupational Safety and Health Administration (OSHA) of 1970

OSHA is the Federal agency responsible for ensuring worker safety. The Occupational Safety and Health Act of 1970 (29 USC 15) and its implementing regulations provide standards for safe workplaces and work practices, including those relating to hazardous materials handling. All workers during construction would comply with OSHA's hazardous materials management and handling requirements including such measures as having all appropriate personal protective equipment (PPE) to reduce the possibility of acute or chronic exposure hazards and protect worker safety. The Proposed Action would comply with this law.

5.1.9 Endangered Species Act of 1973

Pursuant to the Endangered Species Act (ESA), as amended (16 USC 1531 et seq.), USFWS and NMFS have regulatory authority over Federally listed species. Under the ESA, a permit to take a listed species is required for any Federal action that may harm an individual of that species. "Take" is defined under ESA Section 9 as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Under Federal regulation, take is further defined to include habitat modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. ESA Section 7 outlines procedures for Federal interagency cooperation to conserve Federally listed species and designated critical habitat. Section 7(a)(2) requires Federal agencies to consult with USFWS and NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to

jeopardize the continued existence of listed species. A list of threatened and endangered species that may be affected by the Proposed Action was obtained from USFWS in 2019 (Appendix B). USACE formally consulted with USFWS on the ARCF Project and received a Biological Opinion (BO) on September 11, 2015 (08ESMF00-2014-F-0518). USACE conducted reinitiations for this BO with USFWS in June 2017, May 2019, and September 2020. The Proposed Action is an element of the ARCF Project. USACE formally consulted with NMFS on the ARCF Project and received a Biological Opinion on September 9, 2015. USACE is required to reinitiate formal consultation with USFWS and/or NMFS if effects on listed species would vary from what was provided at the time of formal consultation. USACE continues to update USFWS and NMFS on impacts and mitigation for covered species associated with implementing ARCF Project actions, and USACE would reinitiate consultation with USFWS and/or NMFS if completed design documents and specifications for associated ARCF projects provide more detailed data concerning anticipated adverse effects on listed species. Consultation with USFWS and NMFS was ongoing at the time of publication of this document. The Proposed Action would comply with this law.

5.1.10 Executive Order 11988, Floodplain Management

Executive Order (EO) 11988 directs all Federal agencies approving or implementing a project to avoid, to the extent possible, the long- and short-term adverse effects associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. Guidelines for implementing the EO include an eight-step process that agencies should carry out as part of their decision-making on projects that have potential effects on or within the floodplain. The decision-making process required in Section 2(a) of EO 11988 is reflected in the eight steps that are listed below, along with information showing how each step is being addressed for the Proposed Action. The Proposed Action would comply with this law.

1. Determine if a proposed action is in the base floodplain (that area which has a 1 percent or greater chance of flooding in any given year (i.e., the 100-year floodplain). The project includes levee improvements, some of which form the boundary of the base (FEMA's 100-year) floodplain.

2. Conduct early public review, including public notice. Public review is being accomplished through the NEPA Supplemental EA and the CEQA Supplemental EIR process; SAFCA previously conducted extensive public outreach for an earlier iteration of the project prior to authorization by Congress.

3. Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside of the floodplain. Alternatives to the Proposed Action are discussed in Chapter 2, *Alternatives*.

4. Identify effects of the proposed action. This Supplemental EIR analyzes the environmental effects potentially resulting from the project, per CEQA requirements. Effects of the Proposed Action are described in Chapter 3, *Affected Environment and*

Environmental Consequences. Effects are also being evaluated in compliance with the CWA, and other Federal and State environmental regulations.

5. Minimize threats to life and property and restore and preserve natural and beneficial floodplain values. The Proposed Action would reduce flood risk to life and property by ensuring the American River Levees at Sites 2-2 and 2-3 meet the engineering standards associated with the National Flood Insurance Program (NFIP). The project includes mitigation to maintain or improve habitat values along the American River Levees at Sites 2-2 and 2-3.

6. Reevaluate alternatives. USACE is conducting an extensive engineering review of SAFCA's initial designs for improvements to address through-and under-seepage hazards on the American River Levees at Sites 2-2 and 2-3. The Proposed Action includes those portions of SAFCA's initial design which were initially reviewed and approved, in addition to several modifications that were developed because of USACE's reevaluation of the alternatives. The alternatives are also evaluated and may be refined through consultation with the resource agencies for compliance with CWA, and other project authorizations.

7. Present the findings and a public explanation. As part of the CEQA process, the public would be able to review and comment on this Supplemental EIR.

8. Implement the action. USACE intends to implement the Proposed Action in 2020, assuming receipt of all necessary approvals, clearances, permits, and permissions.

9. The project would mitigate flood risks by improving levees to meet engineering standards associated with the NFIP; it would not alter protection for the 100-year event, nor does it transfer any such risk to other areas. Because the project would not directly or indirectly support development in the base floodplain, it would comply with EO 11988.

5.1.11 Executive Order 11990, Protection of Wetlands

The purpose of EO 11990 is to "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands." To meet these objectives, EO 11990 requires Federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. EO 11990 applies to:

- acquisition, management, and disposition of Federal lands and facilities construction;
- improvement projects which are undertaken, financed, or assisted by Federal agencies; and
- Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulation, and licensing activities.
- As discussed in Section 3.4, *Vegetation and Wildlife*, forested wetlands are located within the footprint of the Proposed Action and will be impacted during construction

activities. However, impacts to forested wetlands will be minimized to the greatest extent feasible. Where feasible, forested wetlands will be restored onsite and additional forested wetlands will be created within the American River and other offsite locations to ensure no net loss of wetlands as a result of implementation of the Proposed Action.

The Proposed Action would comply with this law.

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

The purpose of EO 12898 is to identify and address the disproportionate placement of adverse environmental, economic, social, or health effects from Federal actions and policies on minority and/or low-income communities. EO 12898 requires that adverse effects on minority or low- income populations be taken into account during preparation of environmental and socioeconomic analyses of projects or programs that are proposed, funded, or licensed by Federal agencies. Section 2-2 of EO 12898 requires all Federal agencies to conduct programs, policies, and activities that substantially affect human health or the environment in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons the benefits of, or subjecting persons to discrimination because of their race, color or national origin. Section 1-101 of EO 12898 requires Federal agencies to identify and address, as appropriate, disproportionately high, and adverse human health or environmental effects of programs on minority and low-income populations.

The Proposed Action would reduce the risk of flooding to existing residential, commercial, and industrial development protected by the American River Levees at Sites 2-2 and 2-3. This benefit would accrue to all segments of the population in the Project Area and would have no disproportionately high adverse environmental effect on any minority or low-income population. The Proposed Action would comply with this law.

5.1.13 Executive Order 13112, Invasive Species

EO 13112 directs Federal agencies to take actions to prevent the introduction of invasive species, provide for control of invasive species, and minimize the economic, ecological, and human health impacts that invasive species cause. EO 13112 also calls for the restoration of native plants and tree species.

Project construction activities have potential to introduce new invasive plants or spread existing invasive plants on the project site, but temporarily disturbed areas would be hydroseeded with a native seed mix for erosion protection and to prevent colonization of exotic vegetation and mitigation measures would include planting of native riparian species. Additional information is provided in Section 3.4, *Vegetation and Wildlife*. The Proposed Action would comply with this law.

5.1.14 Farmland Protection Policy Act

The Farmland Protection Policy Act (7 USC 4201 et seq.) is intended to minimize the effect of Federal programs with respect to the conversion of farmland to nonagricultural uses. It ensures that, to the extent possible, Federal programs are administered to be compatible with State, local, and private programs and policies to protect farmland. The Natural Resources Conservation Service is the agency primarily responsible for implementing the Farmland Protection Policy Act.

There are no prime farmlands in the levee improvement area.

5.1.15 Clean Water Act

EPA is the lead Federal agency responsible for water quality management. The CWA of 1972, as amended (33 USC 1251 et seq.), is the primary Federal law that governs and authorizes water quality control activities by EPA, as well as the State.

The Proposed Action would involve the placement of fill materials or construction within surface waters, local waterways, or any other Waters of the United States and, therefore, would comply with permit requirements of Sections 401 and 404 of the Clean Water Act. USACE prepared a Section 404(b)(1) Evaluation. At the time of publication of this document, USACE was preparing a Notice of Intent for Contract 3A to be appended to the ARCF GRR Project Programmatic Water Quality Certification issued by the Central Valley Regional Water Quality Control Board on July 13, 2021. Prior to construction, the contractor will be required to obtain a NPDES permit for potential effects on stormwater discharge, including preparation of a SWPPP. With the implementation of these permits, the Proposed Action would be in compliance with the Clean Water Act.

5.1.16 Fish and Wildlife Coordination Act of 1958

The Fish and Wildlife Coordination Act of 1958, as amended (16 USC 661 et seq.), ensures that fish and wildlife receive consideration equal to that of other project features for projects that are constructed, licensed, or permitted by Federal agencies. It requires that the views of USFWS, NMFS, and the applicable State fish and wildlife agency (CDFW) be considered when effects are evaluated and mitigation needs are determined.

In 2015, during preparation of the ARCF GRR FEIS/FEIR, USACE coordinated with USFWS to consider potential effects on vegetation and wildlife from implementation of the overall ARCF 2016 project. On October 5, 2015, USFWS issued a final Coordination Act Report that provided mitigation recommendations (USFWS File # 08ESMF00-20 13-CPA-0020). USACE considered all recommendations and responded to them in the final ARCF GRR FEIS/FEIR. Reinitiation of the BA was conducted in 2020. The Proposed Action would therefore comply with this act.

5.1.17 Magnuson-Stevens Fishery Conservation and Management Act

The Proposed Action would involve in-water work, and implementing standard water quality protection measures, stormwater pollution prevention BMPs, and mitigation measures for monitoring and control of turbidity would avoid indirect effects on essential fish habitat. The Proposed Action would therefore be in compliance with this act.

5.1.18 Migratory Bird Treaty Act of 1936

The Migratory Bird Treaty Act (MBTA) of 1936, as amended (16 USC 703 et seq.), implements domestically a series of international treaties that provide for migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds; the act provides that it is unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird …" (16 USC 703). This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA includes several hundred species and essentially includes all native birds. Permits for take of nongame migratory birds can be issued only for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and personal property.

The Proposed Action incorporates mitigation measures that minimize the potential for the take of migratory birds as a consequence of project construction, as discussed in Section 3.4, *Vegetation and Wildlife*. The Proposed Action would comply with this law.

5.1.19 National Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 were intended to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains. The Federal Emergency Management Agency (FEMA) manages the National Flood Insurance Program (NFIP) to subsidize flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues Flood Insurance Rate Maps for communities participating in the NFIP. These maps delineate flood hazard zones in the community. The maps are designed for flood insurance purposes only and do not necessarily show all areas subject to flooding. The maps designate lands likely to be inundated during a 1 percent (100-year) storm event and elevations of the base flood. They also depict areas between the limits affected by 1 percent (100-year) and 0.2 percent (500-year) events and areas of minimal flooding. Flood Insurance Rate Maps are often used to establish building pad elevations to protect new development from flooding effects.

The Proposed Action would bring the American River South Basin and American River North Basin to Annual Exceedance Probabilities of 1 in 147 and 1 in 256, respectively. The Proposed Action would comply with this law.

5.1.20 National Historic Preservation Act of 1966

The NHPA (54 U.S.C. 300101 *et seq.*) is the primary Federal legislation specific to cultural resources. Section 106 of the NHPA and its implementing regulations (36 CFR Part 800) require Federal agencies to consider the potential effects of their proposed undertakings on historic properties. Historic properties are cultural resources that are included in, or are eligible for inclusion in, the NRHP (36 CFR § 800.16[l]). Undertakings include activities directly carried out, funded, or permitted by Federal agencies. Federal agencies must also allow the Advisory Council on Historic Preservation the opportunity to comment on proposed undertakings and their potential effects on historic properties.

Because the ARCF 2016 Project is being implemented in phases, and because implementation of phases of the ARCF 2016 Project may have an effect on historic properties, USACE consulted with the SHPO and other parties and executed a PA to govern Section 106 compliance. The PA establishes the process USACE would follow for compliance with Section 106, taking into consideration the views of the signatory and concurring parties and interested Native American Tribes.

The Proposed Action incorporates treatment measures in consideration of cultural resources listed on or eligible for listing on the NRHP, as discussed in Section 3.7, *Cultural Resources*. Determinations of the specific mitigation measures to be implemented to resolve or avoid effects on known Historic Properties would be made by USACE, in consultation with SHPO and other PA Parties, as required by the PA and as described in detail in the HPMP for the ARCF Project. Specific mitigation measures that are consistent with the PA and the HPMP are also identified in Section 3.7 to address potential impacts on unknown cultural resources that could be discovered during construction.

In accordance with the PA and HPMP procedures, USACE has consulted with Native Americans who attach religious or cultural significance to historic properties that may be affected by the proposed undertaking, i.e., Proposed Action. A detailed description of consultation with Native Americans is provided under *Native American Consultation* in Section 3.7. In accordance with the PA, USACE will consult with the SHPO, requesting concurrence on the delineation of the APE, on the adequacy of inventory methods, and on the findings of cultural resources investigations. Through implementation of the actions specified in the PA, the Proposed Action complies with Section 106 of the NHPA.

5.1.21 Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970

Federal, State, regional, and local government agencies, and others receiving Federal financial assistance for public programs and projects that require the acquisition of real property, must comply with the policies and provisions set forth in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended in 1987 (42 USC 4601 et seq.), and its implementing regulation, 49 CFR Part 24.

Relocation advisory services, moving costs reimbursement, replacement housing, and reimbursement for related expenses and rights of appeal are provided in the Uniform Act.

All or portions of some uninhabited parcels within the project footprint would need to be acquired for easement for project construction. All property acquisition would be made in compliance with the Uniform Act. The Proposed Action would comply with this law.

5.1.22 Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (16 USC 1217 et seq.) was enacted to preserve selected rivers or sections of rivers in their free-flowing condition to protect the quality of river waters and to fulfill other national conservation purposes. The Lower American River, below Nimbus Dam, has been included in the Federal Wild and Scenic Rivers system since 1981. The ARCF project is consistent with the land use management, flood risk reduction, and levee protection policies of the American River Parkway Plan, the management plan for the Wild and Scenic Rivers Act. These policies require that flood management agencies maintain and improve the existing flood control system, and manage vegetation in the Parkway to maintain the structural integrity and conveyance capacity of the flood control system, consistent with the need to provide a high level of flood risk reduction.

USACE will ensure that the Proposed Action complies with the Wild and Scenic Rivers Act by coordinating with the National Park Service to determine whether the Proposed Action would result in a direct and adverse effect on the Lower American River's free-flowing nature, water quality, anadromous fish Outstandingly Remarkable Value, or recreational Outstandingly Remarkable Value.

5.2 State Laws, Regulations, and Policies

5.2.1 Assembly Bill 1007: State Alternative Fuels Plan

Assembly Bill (AB) 1007 (Chapter 371, Statutes of 2005) required the California Energy Commission (CEC) to prepare a State plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other State, Federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation to public health and environmental quality. The Proposed Action would comply with this law.

5.2.2 Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to AB 2076 (Chapter 936, Statutes of 2000), CEC and the California Air Resources Board (CARB) prepared and adopted a joint agency report in 2003, *Reducing California's Petroleum Dependence.* Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT (CEC and CARB 2003). Further, in response to CEC's 2003 and 2005 *Integrated Energy Policy Reports*, Governor Davis directed CEC to take the lead in developing a long-term plan to increase alternative fuel use.

A performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand by 2030. The Proposed Action would comply with this law.

5.2.3 California Clean Air Act of 1988

Section 3.9 of this document discusses the effects of the Proposed Action on local and regional air quality. CARB is responsible for the development, implementation, and enforcement of California's motor vehicle pollution control program, GHG statewide emissions and goals, and development and enforcement of GHG emission reduction rules. Section 202(a) of the California Clean Air Act requires projects to determine whether emission sources and emission levels significantly affect air quality, based on Federal standards established by EPA and State standards set by CARB.

SMAQMD has local jurisdiction over the Project Area. The analysis in Section 3.9 shows that expected short-term project-related emissions would exceed local thresholds administered by SMAQMD, but would not exceed annual general conformity thresholds. Additionally, SMAQMD recommends that a lead CEQA agency consider a GHG emissions threshold of 1,100 metric tons/year; the Proposed Action would exceed this GHG emissions threshold. Additional BMPs would be incorporated to reduce GHG emissions during construction, to the maximum extent feasible.

In December 2018, the California Supreme Court issued its decision in *Sierra Club v. County of Fresno* (226 Cal.App.4th 704), also known as the "Friant Ranch decision," which requires a project's environmental documents to include a clear analysis of potential long term air quality health impacts from the project's anticipated emissions of air pollutants.

The Proposed Action was analyzed using a health risk analysis (HRA) to identify whether there would be adverse health impacts from emissions during construction. The results of the HRA show that the Proposed Action would be in compliance with the California Clean Air Act and the court's Friant Ranch holding.

5.2.4 California Environmental Quality Act of 1970

The CVFPB, as the non-Federal sponsor and CEQA lead agency, would undertake activities to ensure compliance with CEQA. CEQA requires full disclosure of the environmental effects, potential mitigation, and environmental compliance of the project. Certification of the Final Supplemental EIR by the CVFPB, adoption and incorporation of all feasible mitigation measures into the Proposed Action, and monitoring and reporting on implementation of the adopted mitigation measures would provide full compliance with the requirements of CEQA.

5.2.5 California Environmental Protection Agency

The Secretary of the California Environmental Protection Agency (Cal EPA) is directly responsible for coordinating the administration of the Unified Program. The Secretary certifies Unified Program Agencies. The Secretary has certified 83 Certified Unified Program Agencies (CUPAs) to date. These 83 CUPAs carry out the responsibilities previously handled by approximately 1,300 State and local agencies. In January 1996, Cal EPA adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements: hazardous waste generators and hazardous waste on-site treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level. The CUPA is the local agency that is responsible for the implementation of the Unified Program. The Proposed Action would comply with this law.

5.2.6 California Endangered Species Act

The California Endangered Species Act (CESA) requires non-Federal agencies to consider the potential adverse effects on State-listed species. As discussed in Section 3.6 of this document, with implementation of mitigation measures, activities associated with the Proposed Action are not anticipated to adversely affect any State-listed species, so no further action is required to achieve compliance with CESA.

5.2.7 California Fish and Game Code Sections 3503 and 3513

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nests of eggs of any bird. Section 3503.3 states that it is unlawful to take, possess, or destroy any raptors, including nests or eggs. With implementation of mitigation measures described in Section 3.6, activities associated with the proposed project are not anticipated to adversely affect nesting birds, raptors, or their eggs.

Section 3513 of the California Fish and Game Code states that it is unlawful to take or possess any migratory nongame bird, as designated in the Federal MBTA (16 USC 703

et seq.) before January 1, 2017; any additional migratory nongame bird designated in the MBTA after that date; or any part of a migratory nongame bird described in Fish and Game Code Section 3513, except as provided by rules and regulations adopted by the U.S. Secretary of the Interior under the MBTA, unless those rules or regulations are inconsistent with the Fish and Game Code. The Proposed Action would comply with this law.

5.2.8 California Health and Safety Code

Hazardous Waste Control Law; Hazardous Materials Transportation—CCR Title 22 and Hazardous Waste Control Law, Chapter 6.5

The California Department of Toxic Substances Control regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under the Resource Conservation and Recovery Act and the California Hazardous Waste Control Law. Both laws impose "cradle-to-grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment.

Cal EPA has delegated some of its authority under the Hazardous Waste Control Law to county health departments and other CUPAs. The Office of the State Fire Marshal is responsible for ensuring implementation of the Hazardous Material Management Plans and the Hazardous Material Inventory Statement Programs. These programs tie in closely with the Hazardous Material Release Response Plan (Business Plan) Program. The Governor's Office of Emergency Services is responsible for providing technical assistance and evaluation of the Business Plan Program and the California Accidental Release Response Plan Program. The Proposed Action would comply with this law.

California Human Health Screening Levels and California Land Environmental Restoration and Reuse Act of 2001

The California Human Health Screening Levels (CHHSLs) were developed as a tool to assist in the evaluation of contaminated sites for potential adverse threats to human health. Preparation of the CHHSLs was required by the California Land Environmental Restoration and Reuse Act of 2001 (SB 32) (Chapter 764, Statutes of 2001; OEHHA, 2010). The CHHSLs are concentrations of 54 hazardous chemicals in soil or soil gas that Cal EPA considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment and are contained in its report entitled *Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil* (OEHHA and Cal EPA 2005). The thresholds of concern used to develop the CHHSLs are an excess lifetime cancer risk of 1 in 1 million and a hazard quotient of 1.0 for noncancer health effects. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by EPA and Cal EPA. The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSLs can be assumed to not pose a significant

health risk to people who may live (residential CHHSLs) or work (commercial/industrial CHHSLs) at the site. The Proposed Action would comply with this law.

Code of Federal Regulations Title 29 (OSHA) and California Code of Regulations Title 8 (Cal/OSHA)

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a Federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in CFR Title 29. Cal/OSHA standards are generally more stringent than Federal regulations. Cal/OSHA regulations (8 CCR) for the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, and communicating hazard information relating to hazardous substances and their handling. State laws, like Federal laws, include special provisions for hazard communication to employees in research laboratories, including training in chemical work practices. The Proposed Action would comply with this law.

5.2.9 Executive Order S-06-06

EO S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs State agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. EO S-06-06 also calls for the State to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 plan and provides a more detailed action plan to achieve the following goals:

- Increase environmentally and economically sustainable energy production from organic waste.
- Encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications.
- Create jobs and stimulate economic development, especially in rural regions of the state.
- Reduce fire danger, improve air and water quality, and reduce waste.

As of 2018, 2.35 percent of the total electricity system power in California was derived from biomass (CEC 2019). The Proposed Action would comply with this law.

5.2.10 Porter-Cologne Water Quality Control Act of 1970

The Porter-Cologne Water Quality Control Act requires each of the state's nine regional water quality control boards (RWQCBs) to prepare and periodically update basin plans for water quality control. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The jurisdiction of each RWQCB includes Federally protected waters as well as areas that meet the definition of "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the State's boundaries.

With implementation of mitigation measures described in Section 3.4, the Proposed Action would have no effect on waters of the United States or waters of the State.

5.2.11 California Energy Action Plan

CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 2003 California Energy Action Plan (2008 update). The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban design that reduces vehicle miles traveled (VMT) and accommodates pedestrian and bicycle access. The Proposed Action would comply with this law.

5.2.12 Integrated Energy Policy Report

SB 1389 (Chapter 568, Statutes of 2002) required CEC to: "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety" (Public Resources Code Section 25301[a]). This work culminated in the Integrated Energy Policy Report (IEPR).

CEC adopts an IEPR every two years and an update every other year. The 2017 IEPR, the most recent IEPR, was adopted March 16, 2018. The 2017 IEPR summarizes priority energy issues currently facing California, outlining strategies and recommendations to

further the State's goal of ensuring reliable, affordable, and environmentally responsible energy sources. The report covers the following energy topics:

- Progress toward statewide renewable energy targets and issues facing future renewable development.
- Efforts to increase energy efficiency in existing and new buildings.
- Progress by utilities in achieving energy efficiency targets and potential.
- Improving coordination among the State's energy agencies.
- Streamlining power plant licensing processes.
- Results of preliminary forecasts of electricity, natural gas, and transportation fuel supply and demand.
- Future energy infrastructure needs.
- The need for research and development efforts to statewide energy policies.
- Issues facing California's nuclear power plants.

The Proposed Action would comply with this law.

5.2.13 Statewide Greenhouse Gas Emissions Targets and the Climate Change Scoping Plan

Reducing GHG emissions in California has been the focus of the State government for approximately two decades (State of California 2018). GHG emission targets established by the State Legislature include reducing statewide GHG emissions to 1990 levels by 2020 (AB 32, 2006) and reducing them to 40 percent below 1990 levels by 2030 (Senate Bill [SB] 32, 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050. Executive Order B-55-18 calls for California to achieve carbon neutrality by 2045 and achieve and maintain net negative GHG emissions thereafter. These targets are in line with the scientifically established levels needed in the United States to limit the rise in global temperature to no more than 2 degrees Celsius, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected; these targets also pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius (United Nations 2015:3).

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by the California Air Resources Board (CARB), outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and "substantially advance toward our 2050 climate goals" (CARB 2017:1, 3, 5, 20, 25–26). It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste). CARB and other State agencies are currently

developing a Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal of EO B-55-18.

The State has also enacted more detailed legislation addressing GHG emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized below. The Proposed Action would comply with this law.

5.2.14 Warren-Alquist Act

The 1974 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). This law was enacted in response to the State Legislature's review of studies projecting an increase in statewide energy demand, which would potentially encourage the development of power plants in environmentally sensitive areas. The act introduced State policy for siting power plants to reduce potential environmental impacts, and additionally sought to reduce demand for these facilities by directing CEC to develop statewide energy conservation measures to reduce wasteful, inefficient, and unnecessary uses of energy. Conservation measures recommended establishing design standards for energy conservation in buildings that ultimately resulted in the creation of the Title 24 Building Energy Efficiency Standards (California Energy Code), which have been updated regularly and remain in effect today. The act additionally directed CEC to cooperate with the Governor's Office of Planning and Research, the California Natural Resources Agency, and other interested parties in ensuring that a discussion of wasteful, inefficient, and unnecessary consumption of energy is included in all environmental impact reports required on local projects. The Proposed Action would comply with this law.

CHAPTER 6
Coordination and Review of the Draft EIR

This Draft Supplemental EIR has been circulated for 45 days (April 13, 2022 to May 27, 2022) to agencies, organizations, and the public, including, but not limited, to: NMFS, USFWS, NPS, SHPO, CVRWQCB, State Lands Commission, Sacramento County, and the City of Sacramento. The Draft Supplemental EIR is posted on the CVFPB website and made available for viewing at local public libraries (if open), or provided by mail upon request. In addition, notice of a public meeting for the Draft Supplemental EIR will be posted on the CVFPB website. This project was coordinated with all the appropriate Federal, State, and local governmental agencies including USFWS, SHPO, and DWR prior to the publication of this document.

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CHAPTER 7
Report Preparers and Reviewers

This Supplemental EIR was prepared by Environmental Science Associates at the direction of the USACE Sacramento District and CVFPB, with assistance from SAFCA.

The following is a list of the individuals who prepared this Supplemental EIR, provided important background materials, or provided engineering clarifications for the project description.

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