American River Watershed Common Features Water Resources Development Act 2016 Project, Sacramento River Erosion Contract 2

Draft Supplemental Environmental Impact Report and Draft Supplemental Environmental Assessment

April 2022

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Preface

The American River Watershed Common Features 2016 Project, Sacramento River Erosion Contract 2 includes critical levee improvements to meet erosion requirements along the Sacramento River east levee between Front Street and the Pocket-Greenhaven neighborhood of Sacramento, California. Levee improvements in these reaches of the Sacramento River were analyzed in the 2016 American River Watershed Common Features General Reevaluation Report (ARCF GRR) Environmental Impact Statement/Environmental Impact Report (EIS/EIR). This document is arranged as a Supplemental EIR (Part 1) and a Supplemental Environmental Assessment (SEA) (Part 2) to supplement the ARCF GRR Final EIS/EIR by addressing the environmental impacts from project refinements and design details developed by USACE for the Sacramento River Erosion Contract 2 after the ARCF GRR Final EIS/EIR 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 SEA is being prepared by the U.S. Army Corps of Engineers (USACE) as the lead agency under the National Environmental Policy Act (NEPA).

This document is a Supplemental EIR (Part 1) and a (SEA) (Part 2). The California Environmental Quality Act (CEQA) and National Environmental Policy Act (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 SEA (Part 2) are analyses that reference and rely on each other, and are combined in this document for efficiency, completeness, and ease of public review and agency decision-making.

In accordance with CEQA requirements, Part 1 of this document (the Supplemental EIR) analyzes the Sacramento River Erosion Contract 2 project elements at a greater level of design detail than was available in the ARCF GRR Final EIS/EIR, as well as several project refinements to support both CEQA lead and responsible agency decision-making. The impacts from these changes are compared to existing conditions (as of November 2021) to determine impact significance in the Supplemental EIR.

In accordance with NEPA, Part 2 of this document (the SEA) analyzes only the Sacramento River Erosion Contract 2 project refinements not previously analyzed in the ARCF GRR Final EIS/EIR: the location of haul/access routes and staging areas, two revised methods for placement of rock revetment, a final design for removing and replacing municipal drainage systems at Sump 63, and a refined estimate of project-related barge traffic. The installation of bank protection, barging in material, vegetation removal and replanting, planting benches, and instream woody material, are already authorized for construction as their environmental impacts were fully evaluated under NEPA in the ARCF GRR EIS/EIR; they are considered to be part of the updated NEPA No Action Alternative. The impacts of the project refinements are compared to the No Action Alternative to determine impact significance in the SEA.

The CVFPB and USACE have released the Draft Supplemental EIR and Draft Supplemental EA for public and agency review in accordance with CEQA and NEPA requirements, respectively. After the review period closes, CVFPB and USACE will consider the comments received on their separate documents, prepare responses, and incorporate any

modifications into a Final Supplemental EIR to meet CEQA requirements and a Final Supplemental EA with a Finding of No Significant Impact to meet NEPA requirements for the Sacramento River Erosion Contract 2. Environmental commitments and mitigation measures summarized in the Executive Summary (Table ES-1) apply to the Sacramento River Erosion Contract 2 Project as a whole.

Part 1

Draft Supplemental Environmental Impact Report

American River Watershed Common Features
Water Resources Development Act of 2016 Project
Sacramento River Erosion Contract 2

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
APE	Area of Potential Effects
ARCF	American River Watershed Common Features
ARCF GRR	American River Watershed Common Features General Reevaluation Report
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
Basin Plan	Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin
BMPs	Best Management Practices
BWFS	Basin-Wide Feasibility Studies
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CAS	Climate Adaptation Strategy
CAL FIRE	California Department of Forestry and Fire
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
City	City of Sacramento
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CVFMP	Central Valley Flood Management Planning
CVFPB	Central Valley Flood Protection Board
CVFPP	Central Valley Flood Protection Plan
CWA	Clean Water Act
dBA	A-weighted decibels
Delta	Sacramento-San Joaquin Delta
DWR	California Department of Water Resources

EA	Environmental Assessment
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
GEI	GEI Consultants, Inc.
GHG	Greenhouse gas
HOV	High Occupancy Vehicle
HMMAMP	Habitat Mitigation, Monitoring, and Adaptive Management Plan
HPMP	Historic Properties Management Plan
HPTP	Historic Properties Treatment Plan
I-5	Interstate 5
ITS	Intelligent Transportation Systems
ICM	Integrated Corridor Management
IWM	instream woody material
LEBLS	Lower Elkhorn Basin Levee Setback
MIAD	Mormon Island Auxiliary Dam
MSL	mean sea level
MLD	Most Likely Descendant
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NEMDC	Natomas East Main Drainage Canal
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
O&M	operations and maintenance
OHWM	ordinary high water mark
PA	Programmatic Agreement
PCC	Portland Cement Concrete
Pb	lead
PG&E	Pacific Gas and Electric Company
Phase I ESA	Phase I Environmental Site Assessment

PM	particulate matter
PM10	particulate matter equal to or less than 10 micrometers in diameter
PM2.5	particulate matter equal to or less than 2.5 micrometers in diameter
PPV	peak particle velocity
PRC	California Public Resources Code
proposed project	American River Watershed Common Features 2016 Project
RECs	Recognized Environmental Conditions
RM	River Mile
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SAFCA	Sacramento Area Flood Control Agency
SACOG	Sacramento Area Council of Governments
SE	State Endangered
SFBAAB	San Francisco Bay Area Air Basin
SFP	State Fully Protected
SHPO	State Historic Preservation Officer
SIPs	State Implementation Plans
SLC	California State Lands Commission
SMAQMD	Sacramento Metropolitan Air Quality Management District
SSC	Species of special concern
SO_2	sulfur dioxide
SPCCP	Spill Prevention Control and Countermeasures Plan
SRA	shaded riverine aquatic
SRBPP	Sacramento River Bank Protection Project
SRCSD	Sacramento Regional County Sanitation District
SREL	Sacramento River East Levee
Supplemental EIR	Supplemental Environmental Impact Report
SVAB	Sacramento Valley Air Basin
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TCRs	Tribal Cultural Resources
TCL	Tribal Cultural Landscape
TMS	Transportation Management System

UAIC	United Auburn Indian Community of the Auburn Rancheria
USACE	U.S. Army Corps of Engineers
WCM	Water Control Manual
WSPGRR	West Sacramento Project General Reevaluation Report
WRDA	Water Resources Development Act
VELB	valley elderberry longhorn beetle

EXECUTIVE SUMMARY

The Central Valley Flood Protection Board (CVFPB), as lead agency under the California Environmental Quality Act (CEQA), has prepared this Supplemental Environmental Impact Report (Supplemental EIR) to evaluate project refinements to the ARCF 2016 Project, Sacramento River Erosion Contract 2 since the American River Watershed Common Features General Reevaluation Report (ARCF GRR) Environmental Impact Statement/Environmental Impact Report (EIS/EIR) was prepared and the EIR certified in 2016. These elements of Sacramento River Erosion Contract 2 (details on specific levee erosion protection improvements and locations) require supplemental analysis under CEQA because "minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation" (State CEQA Guidelines Section 15163(a)(2) (Cal. Code Regs., tit. 14, § 15163, subd. (a)(2)).

This Supplemental EIR has been prepared to supplement, not replace, the ARCF GRR Final EIS/EIR, and provides only the information necessary to make the previous ARCF GRR Final EIS/EIR adequate for the Sacramento River Erosion Contract 2 component of the ARCF GRR. Consequently, public scoping and alternatives analyses are not contained herein as they have already been sufficiently conducted in compliance with State CEQA Guidelines during development of ARCF GRR scoping, the Draft EIS/EIR, and the Final EIS/EIR. This Supplemental EIR compares the effects of the proposed project refinements of the Sacramento River Erosion Contract 2 to existing conditions as of November 2021.

Areas of Controversy and Issues to be Resolved

The ARCF GRR Final EIS/EIR identified several areas of controversy based on the comments received during the public scoping period in 2008 and the history of the NEPA and CEQA processes undertaken by U.S. Army Corps of Engineers, Sacramento District (USACE), CVFPB, and the Sacramento Area Flood Control Agency since initial scoping for the ARCF GRR EIS/EIR. Several of these areas of controversy are applicable to the proposed project refinements, including:

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

These areas of controversy were addressed in the ARCF GRR Final EIS/EIR and those areas of controversy that may be applicable to the proposed project refinements are addressed in this Supplemental EIR. Consequently, there are no further issues to be resolved. The ARCF GRR

Final EIS/EIR selected the alternative to be implemented and identified feasible mitigation for each significant impact, and now this Supplemental EIR evaluates impacts and proposes feasible mitigation as necessary for the proposed project refinements.

Public Review of the Supplemental EIR

The Draft Supplemental EIR is being made available to responsible and other potentially interested agencies, stakeholder organizations, and individuals, including all entities that have previously requested such notice in writing, for a 45-day review period from April 15 to May 29, 2022. CVFPB and USACE will conduct a virtual public meeting on April 26, 2022, to receive comments on the Draft Supplemental EIR and Draft Supplemental Environmental Assessment (EA).

A Notice of Completion for the Draft Supplemental EIR was filed with the State Clearinghouse, in accordance with the State CEQA Guidelines (Section 15085), and a Notice of Availability of the Draft Supplemental EIR was posted in accordance with State CEQA Guidelines (Section 15087). A public notice was posted in the Sacramento Bee on April 15, 2022, and sent to individuals and parties requesting information regarding the proposed project refinements. All references used in the preparation of this Supplemental EIR, including the 2016 ARCF GRR Final EIS/EIR, have also been made available to the public. This distribution and public noticing ensured that all interested parties had an opportunity to provide written comments on the Draft Supplemental EIR consistent with State CEQA Guidelines (14 Cal. Code Regs., tit. 14, § 15000 et seq.).

Copies of the Draft Supplemental EIR are available for review online at www.sacleveeupgrades.com and www.cvfpb.ca.gov/public-notices. A hard copy may be reviewed at the Sacramento Central Library at 828 I Street, Sacramento, CA 95814.

Summary of Environmental Impacts

Table ES-1 summarizes the environmental effects analysis, provided in detail in Sections 3.2 through 3.14 of this Supplemental EIR, and includes a listing of impacts, impact significance conclusions before and after mitigation implementation, and mitigation measures. All significant environmental effects ("significant impacts") presented in Table ES-1 were previously presented as such in the ARCF GRR Final EIS/EIR. Consequently, there are no new significant impacts from the proposed project refinements that were not disclosed in the ARCF GRR Final EIS/EIR or prior Supplemental EIRs, and there is no substantial increase in the severity of any significant environmental effect previously presented in the ARCF GRR Final EIS/EIR from the proposed project refinements. Environmental commitments and mitigation measures summarized in the Executive Summary (Table ES-1) apply to the Sacramento River Erosion Contract 2 Project as a whole and not just for project refinements as it was important to consolidate all mitigation measures for the Sacramento River Erosion Contract 2 for ease of implementation and mitigation monitoring and reporting.

Table ES-1. Summary of Effects and Mitigation Measures for the Proposed Project

Effect	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
Geological Resources			
Potential Temporary, Short-Term Construction-related Erosion	PS	Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices	LTS
Potential to Directly or Indirectly Destroy a Unique Paleontological Resource or Site	LTS	None required	LTS
Water Quality			
Construction Impacts to Water Quality	S	Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters. Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices	LTS
Vegetation and Wildlife			
Adverse Effects on Riparian Habitat and Waters of the United States	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. Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters. Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices	LTS long term, SU short term

Notes: NI = No Impact, LTS = Less than Significant, S = Significant, PS = Potentially Significant, SU = Significant and Unavoidable

Effect	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
Fisheries			
Adverse Effects on Fisheries	S	Mitigation Measure FISH-1: 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.	LTS
Special-Status Species			
Construction Effects on Special-status Species	PS	Mitigation Measure BIRD-1: Implement Measures to Protect Nesting Special-status and Migratory Birds. 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. Mitigation Measure TURTLE-1: Implement Measures to Protect Western Pond Turtle Mitigation Measure BAT-1: Implement Measures to Protect Maternity Roosts of Special-status Bats. Mitigation Measure PLANT-1: Implement Measures to Protect Special-status Plants	LTS

Notes: NI = No Impact, LTS = Less than Significant, S = Significant, PS = Potentially Significant, SU = Significant and Unavoidable

Effect	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
Cultural Resources			
Damage to or Destruction of Built-Environment Historic Properties	NI	None required	NI
Damage to or Destruction of Known Prehistoric-Period Archaeological Sites and Tribal Cultural Resources	S	Mitigation Measure CR-1: Resolve Adverse Effects through Programmatic Agreement and Historic Properties Treatment Plan	LTS
Potential Damage to or Destruction of Previously Undiscovered Archaeological Sites or Tribal Cultural Resources	PS	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 Inadvertent Discovery of Cultural Material; Mitigation Measure CR-5: In the Event that Tribal Cultural Resources are Discovered Prior to or During Construction, Implement Procedures to Evaluate Tribal Cultural Resources and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects	LTS
Damage to or Destruction of Human Remains during Construction	PS	Mitigation Measure CR-6: Implement Procedures	LTS

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Effect	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
Air Quality			
Construction Emissions	S	Mitigation Measure AIR-1: Implement the Sacramento Metropolitan Air Quality Management District's Basic Construction Emission Control Practices; Mitigation Measure AIR-2: Implement the Sacramento Metropolitan Air Quality Management District's Enhanced Fugitive PM Dust Control Practices; Mitigation Measure AIR-3: Require Lower Exhaust Emissions for Construction Equipment; Mitigation Measure AIR-4: Use the Air District's Off-Site Mitigation Fee to Reduce NOx Emissions Mitigation Measure AIR-5: Implement Marine Engine Standards	LTS
Climate Change			
Temporary, Short-Term Generation of Greenhouse Gas Emissions	S	Mitigation Measure GHG-1: Implement GHG Reduction Measures	LTS
Conflict with an Applicable GHG Emissions Reduction Plan and Effects of Climate Change	S	Mitigation Measure GHG-1: Implement GHG Reduction Measures	LTS
Noise			
Potential Increase in Ambient Noise Levels or Exposure of Sensitive Receptors to Excessive Noise or Vibration	S	Mitigation Measure NOI-1: Implement Measures to Reduce Construction Noise and Vibration Effects	LTS

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Effect	Significance Before Mitigation Measures	Mitigation Measures	Significance After Mitigation Measures
Recreation			
Temporary Changes to Recreational Opportunities during Project Construction Activities	S	Mitigation Measure REC-1: Implement Bicycle and Pedestrian Detours, Provide Construction Period Information on Facility Closures, and Coordinate with the City of Sacramento to Repair of Damage to Bicycle Facilities Mitigation Measure REC-2: Implement Measures to Notify Boaters	SU (short term)
Visual Resources			
Changes in Scenic Vistas and Existing Visual Character	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. Mitigation Measure VIS-1: Reduce Light Pollution.	LTS
Hazardous Wastes and Materials			
Handling of Hazardous Materials within 0.25 Mile of a School	LTS	None required	LTS
Possible Exposure of People and the Environment to Existing Hazardous Materials, Including Cortese-listed Sites	PS	Mitigation Measure HAZ-1: Conduct Phase II Investigations as Needed	LTS
Interfere with Emergency Response or Evacuation	LTS	None required	LTS
Possible Creation of Wildland Fire Hazards	LTS	None required	LTS

Source: GEI Consultants, Inc. 2021

Notes: NI = No Impact, LTS = Less than Significant, S = Significant, PS = Potentially Significant, SU = Significant and Unavoidable

CHAPTER 1 INTRODUCTION

1.1 Proposed Project and Environmental Documents

The USACE, CVFPB, and Sacramento Area Flood Control Agency (SAFCA) collectively, the "Project Partners," propose to construct, as a part of the American River Watershed Common Features (ARCF) 2016 Project, Sacramento River Erosion Contract 2 levee improvements (project) consisting of an approximately 18,090 linear feet (3.4 miles) of bank protection and planting benches along the Sacramento River east levee in Sacramento, California. The Sacramento River Erosion Contract 2 is the second of four contracts on the Sacramento River anticipated to be constructed from 2021 to 2024 to address erosion concerns along the Sacramento River east levee. Vegetation removal for the Sacramento River Erosion Contract 2 is anticipated to start as early as October 2023, and construction is planned to start in June 2023 and conclude in November 2024, with planting and greening occurring in Spring 2025 and monitoring of the plantings continuing through an establishment period of 3 to 5 years. USACE is the Federal lead agency under the National Environmental Policy Act (NEPA), CVFPB is the State lead agency under the CEQA, and SAFCA is a responsible agency under CEQA for the ARCF GRR EIS/EIR.

CVFPB has prepared this Supplemental EIR to evaluate elements of the Sacramento River Erosion Contract 2 Project that require additional environmental analysis since the ARCF GRR Final EIS/EIR was certified in 2016. These elements of Sacramento River Erosion Contract 2 (staging areas, municipal drainage infrastructure modifications, and specific levee erosion protection improvements and locations) require supplemental analysis under CEQA because further project design details and refinements by USACE since the ARCF GRR Final EIS/EIR was certified have resulted in the need for additional environmental analysis of the project refinements.

These elements of Sacramento River Erosion Contract 2 require supplemental analysis under CEQA because "minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation" (State CEQA Guidelines Section 15163(a)(2) (Cal. Code Regs., tit. 14, § 15163, subd. (a)(2)). This Supplemental EIR has been prepared to supplement, not replace, the ARCF GRR Final EIS/EIR, and provides only the information necessary to make the previous ARCF GRR Final EIS/EIR adequate for the proposed project. Consequently, public scoping and alternatives analyses are not contained herein as they have already been sufficiently conducted in compliance with State CEQA Guidelines during development of the ARCF GRR scoping, the Draft EIS/EIR, and the Final EIS/EIR. This Supplemental EIR compares the effects of the refined Sacramento River Erosion Contract 2 Project to existing conditions as of November 2021.

1.2 Project Location

The project is located in the City of Sacramento (City), California, along the left bank (when facing downstream) of the Sacramento River (Figure 2-1 in Chapter 2, "Proposed Project Refinements"). The proposed project includes Sacramento River erosion protection work near Miller Park and in the Little Pocket and Pocket-Greenhaven neighborhoods. The project site

includes the levee prism and the Sacramento River and riverbank, where the bank protection activities will occur, and several parking areas, parks, and vacant lots used for landside access and staging.

1.3 Background and Need for Action

The ARCF GRR Final EIS/EIR includes a comprehensive discussion of the background and need for action in Section 1.4 which is not repeated here. Additional relevant information since ARCF GRR Final EIS/EIR certification in 2016 is summarized below.

In July 2018, Congress granted USACE construction funding to complete urgent flood control projects under the Bipartisan Budget Act of 2018. ARCF 2016 was identified for urgent implementation, and Congress supplied full funding to allow USACE to implement the much-needed levee improvements as quickly as possible. Although many elements of Sacramento River Erosion Contract 2 were addressed in the ARCF GRR EIS/EIR, impacts associated with some of the work, such as specific erosion protection designs, staging areas, haul routes, borrow sites, and spoils disposal, were not assessed in the ARCF GRR Final EIS/EIR because the specific project design had not yet been developed. Supplemental CEQA analysis is necessary for any actions or effects that were not previously addressed in the ARCF GRR Final EIS/EIR as discussed next.

The Sacramento River Erosion Contract 2 is the second contract planned to address bank erosion concerns along the Sacramento River east levee and will take place over subsequent years. Sacramento River Erosion Contract 1 included bank protection at a single site at River Mile 55.2L (USACE and CVFPB 2021a). Sacramento River Erosion Contract 2, the subject of this Supplemental EIR, includes approximately 15,185 linear feet of improvements between Miller Park and the Pocket-Greenhaven neighborhood. The anticipated Sacramento River Erosion Contracts 3 and 4 improvements will be assessed in future supplemental CEQA documents as needed.

1.4 Project Purpose, Need, and Objectives

The ARCF GRR Final EIS/EIR includes a comprehensive discussion of the project purpose, need, and objectives in Section 1.4. The project objectives are unchanged from the ARCF GRR Final EIS/EIR.

1.5 Purpose of the Supplemental Environmental Impact Report

This Supplemental EIR describes the existing environmental conditions in the proposed Sacramento River Erosion Contract 2 Project area, evaluates the anticipated environmental effects of any refinements to the proposed project in the ARCF GRR Final EIS/EIR pertaining to Sacramento River Erosion Contract 2, and identifies mitigation measures to avoid or reduce any significant adverse environmental effects to a less-than-significant level where practicable. This Supplemental EIR has been prepared in accordance with the State CEQA Guidelines and, in combination with the ARCF GRR EIS/EIR (USACE 2016), which it supplements, fully discloses the potential environmental effects of the proposed project to the public and provides an opportunity for the public to review and comment on the proposed project.

Section 15162 of the State CEQA Guidelines 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 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, but "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 Section 15163). CVFPB has determined that a Supplemental EIR for the proposed project meets State CEQA Guidelines Sections 15162 and 15163 and, therefore, has prepared this Supplemental EIR. This Supplemental EIR supplements (not replaces) the previously certified ARCF GRR Final EIS/EIR 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 Section 15163. Pursuant to the State CEQA Guidelines, 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.

1.6 Public Review of the Supplemental Environmental Impact Report

The Draft Supplemental EIR is being made available to responsible and other potentially interested agencies, stakeholder organizations, and individuals, including all entities that have previously requested such notice in writing, for a 45-day review period from April 15 to May 29, 2022. CVFPB will conduct a virtual public meeting on April 26, 2022, to receive comments on the Draft Supplemental EIR.

A Notice of Completion for the Draft Supplemental EIR was filed with the State Clearinghouse, in accordance with the State CEQA Guidelines (Section 15085), and a Notice of Availability of the Draft Supplemental EIR was posted in accordance with State CEQA Guidelines (Section 15087). A public notice was posted in the Sacramento Bee on April 15, 2022, and sent to individuals requesting information regarding the proposed project. All references used in the preparation of this Supplemental EIR, including the 2016 ARCF GRR Final EIS/EIR, have also been made available to the public. This distribution and public noticing ensured that all interested parties have an opportunity to provide written comments on the Draft Supplemental EIR consistent with State CEQA Guidelines.

Copies of the Draft Supplemental EIR were made available for review online at: http://cvfpb.ca.gov/public-notices. Hard copies may be reviewed at the Sacramento Central Library at 828 I Street, Sacramento, CA 95814.

1.7 Related Documents

The Sacramento River Erosion Contract 2 is a component of a larger flood risk reduction effort in the Sacramento region. USACE and CVFPB jointly published the ARCF GRR Draft EIS/EIR in March 2015, in accordance with NEPA and CEQA requirements (SCH No. 2005072046). The ARCF GRR 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 Final EIS/EIR was issued in January 2016, and comments were received between January 22 and February 22, 2016. A revised Final EIS/EIR was issued in May 2016. The ARCF GRR EIR was certified on April 22, 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. This Supplemental EIR supplements the ARCF GRR Final EIS/EIR.

1.8 Decisions Needed

As the CEQA lead agency, CVFPB will consider the information presented in this Supplemental EIR, comments received on this Supplemental EIR, and responses to the significant environmental issues raised in the review and consultation process, along with the entire administrative record (including the administrative record for the 2016 ARCF GRR Final EIS/EIR), when determining whether to certify this Supplemental EIR and approve the revised project.

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 ARCF 2016 Project and will provide project funds and oversight. A Water Quality Certification under Section 401 of the Clean Water Act (CWA) will be required, and RWQCB will consider this Supplemental EIR prior to issuing the certification. An SLC 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 PROPOSED PROJECT REFINEMENTS

This section describes refined designs for the bank protection features initially described in the ARCF GRR EIS/EIR relevant to Sacramento River Erosion Contract 2, along with new elements, such as specific construction details, staging, borrow and disposal sites, and a construction schedule necessary to construct Sacramento River Erosion Contract 2 features, along with the long-term operations and maintenance (O&M) requirements.

The primary design objective is to restore the structural stability of the levee and maintain public safety. The proposed bank protection design was formulated to ensure the future integrity of the levee system at several locations along the Sacramento River east levee between river miles 49 and 58, identified as Sites 1 through 6. These locations are described in more detail below and illustrated in Figures 2-1 through 2-7. Table 2-1 shows the site number, river mile, and approximate length of improvement .

Table 2-1. Levee Improvement Summary

Site	River Mile	Length (ft)	Length (miles)
1	58.0-58.6	3,376	0.6
2	55.4-56.1	4,031	0.8
3	53.0-53.7	4,891	0.9
4	51.1-51.3	720	0.1
5	50.9-51.2	3,107	0.6
6	49.2-49.8	1,965	0.4

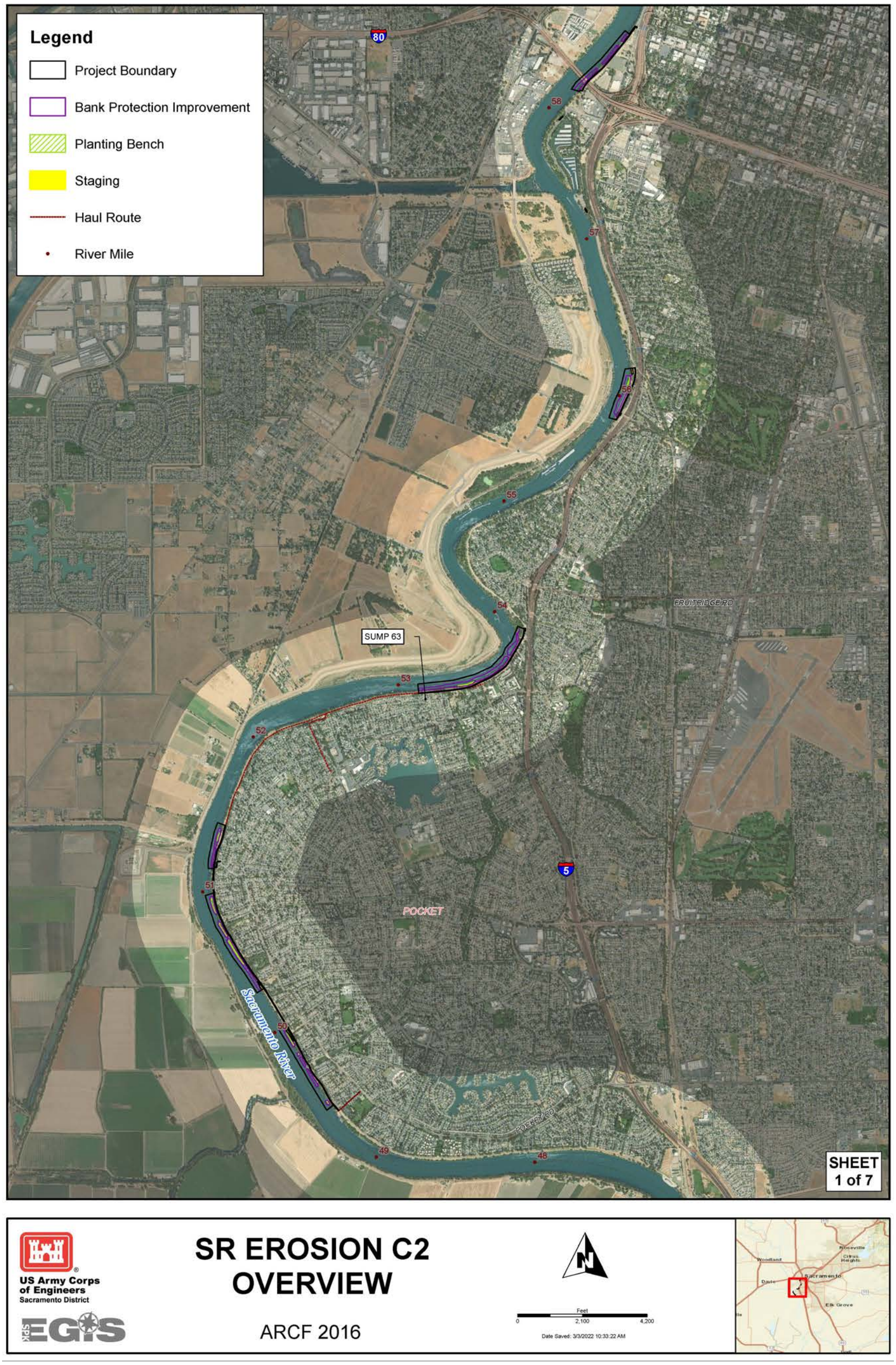

Figure 2-1: Overview of Project Features (1 of 7)

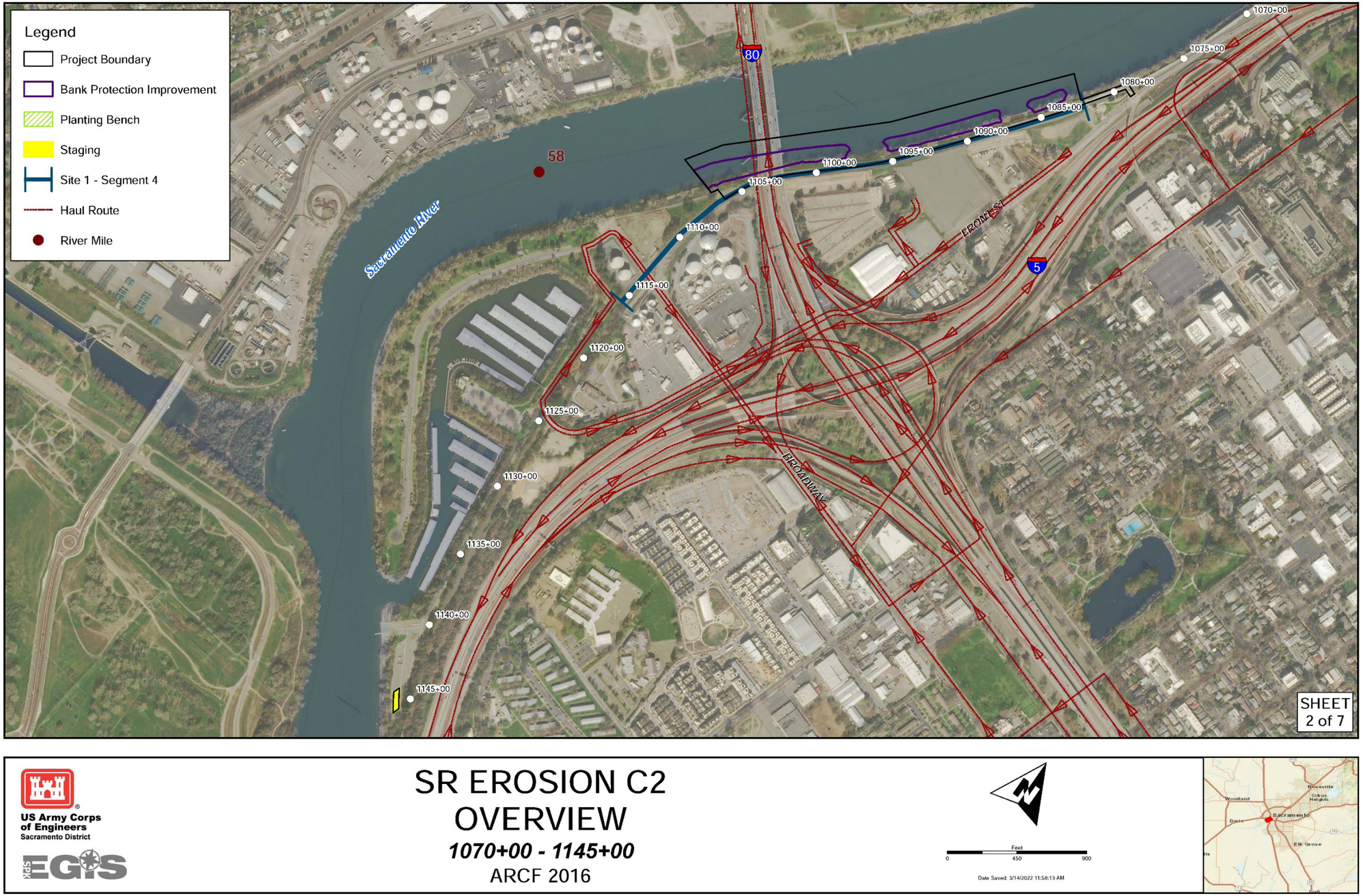

Figure 2-2: Project Features at Site 1 (2 of 7)

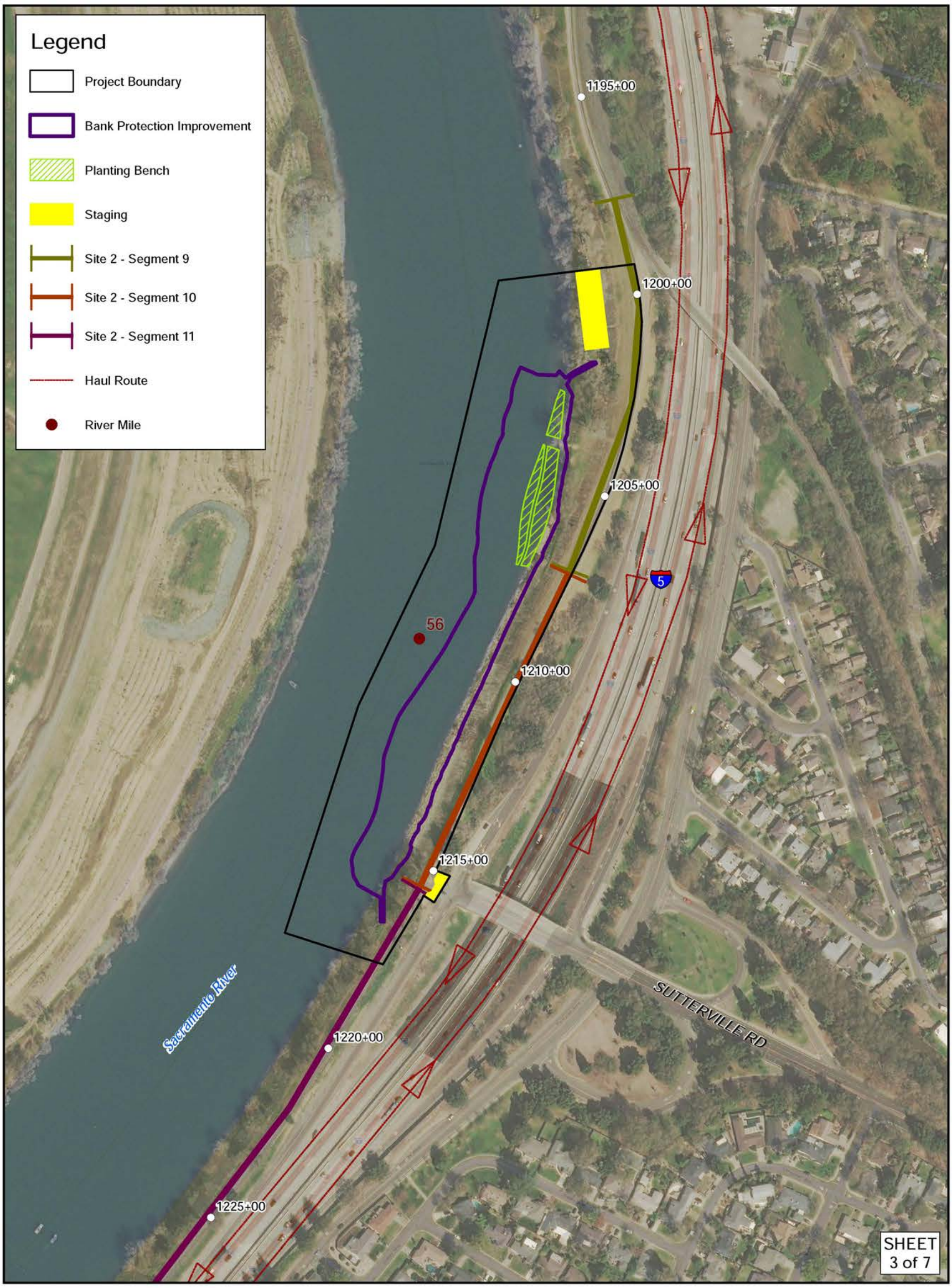

Figure 2-3: Project Features at Site 2 (3 of 7)

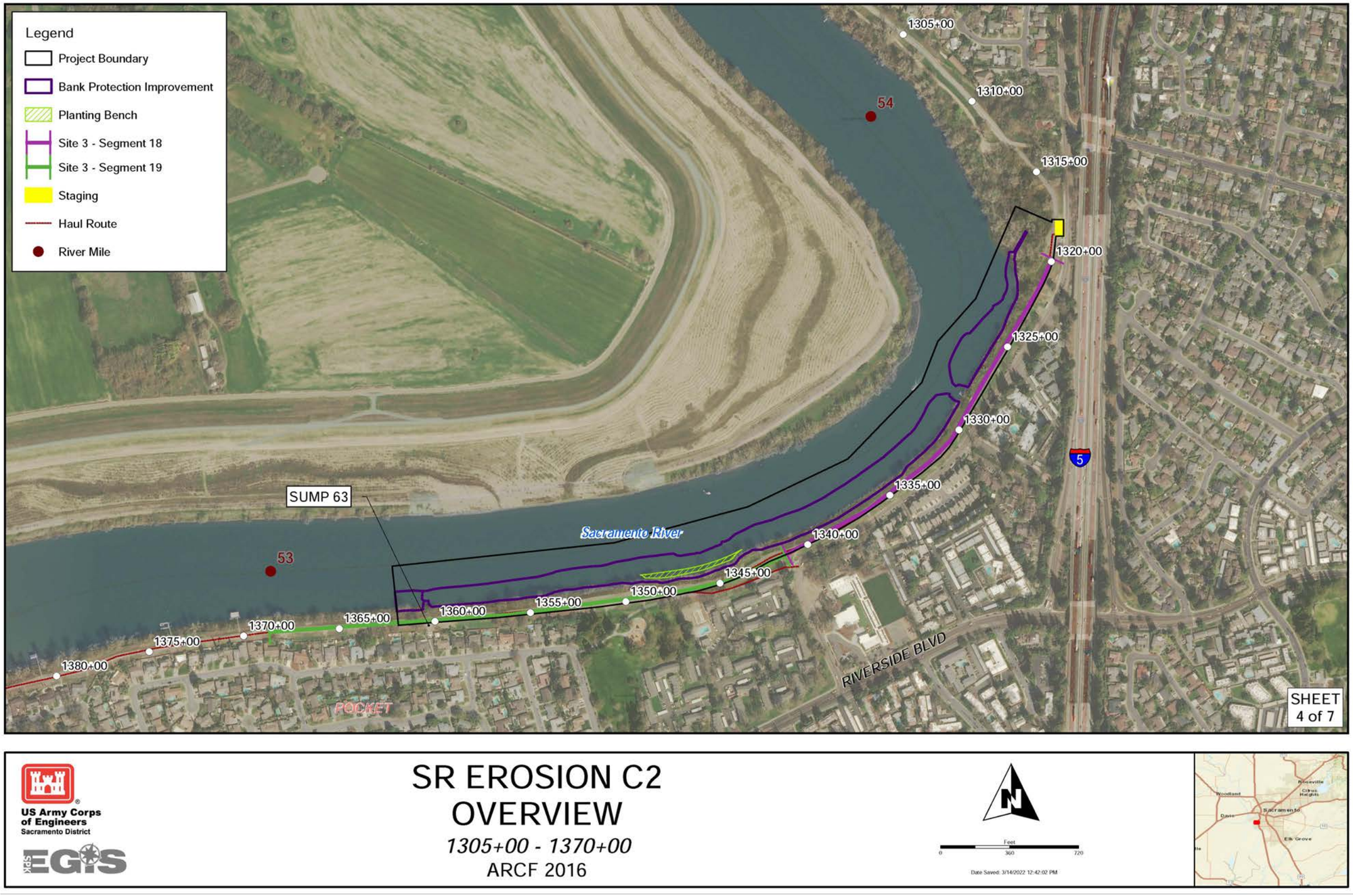

Figure 2-4: Project Features at Site 3 (4 of 7)

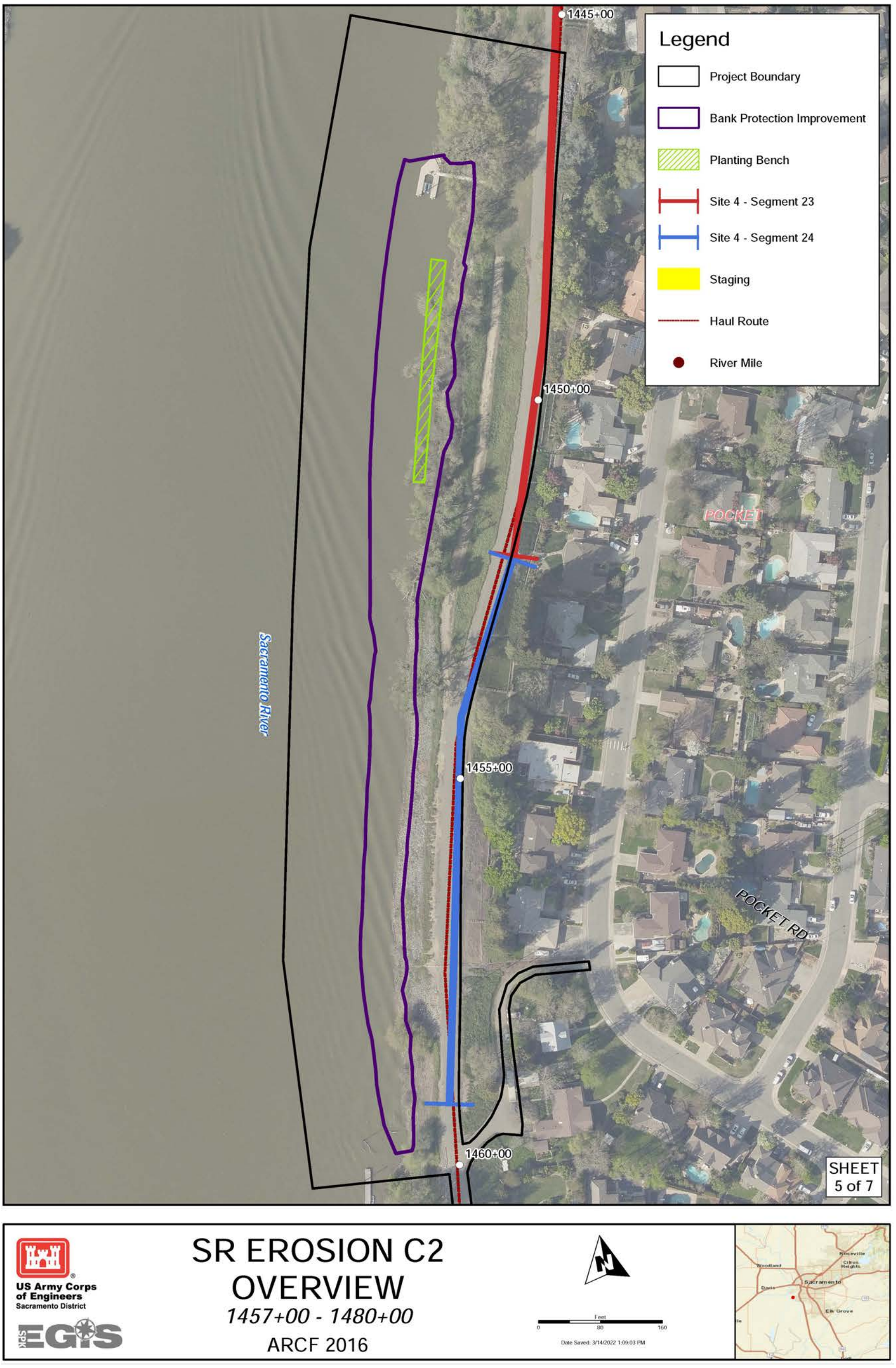

Figure 2-5: Project Features at Site 4 (5 of 7)

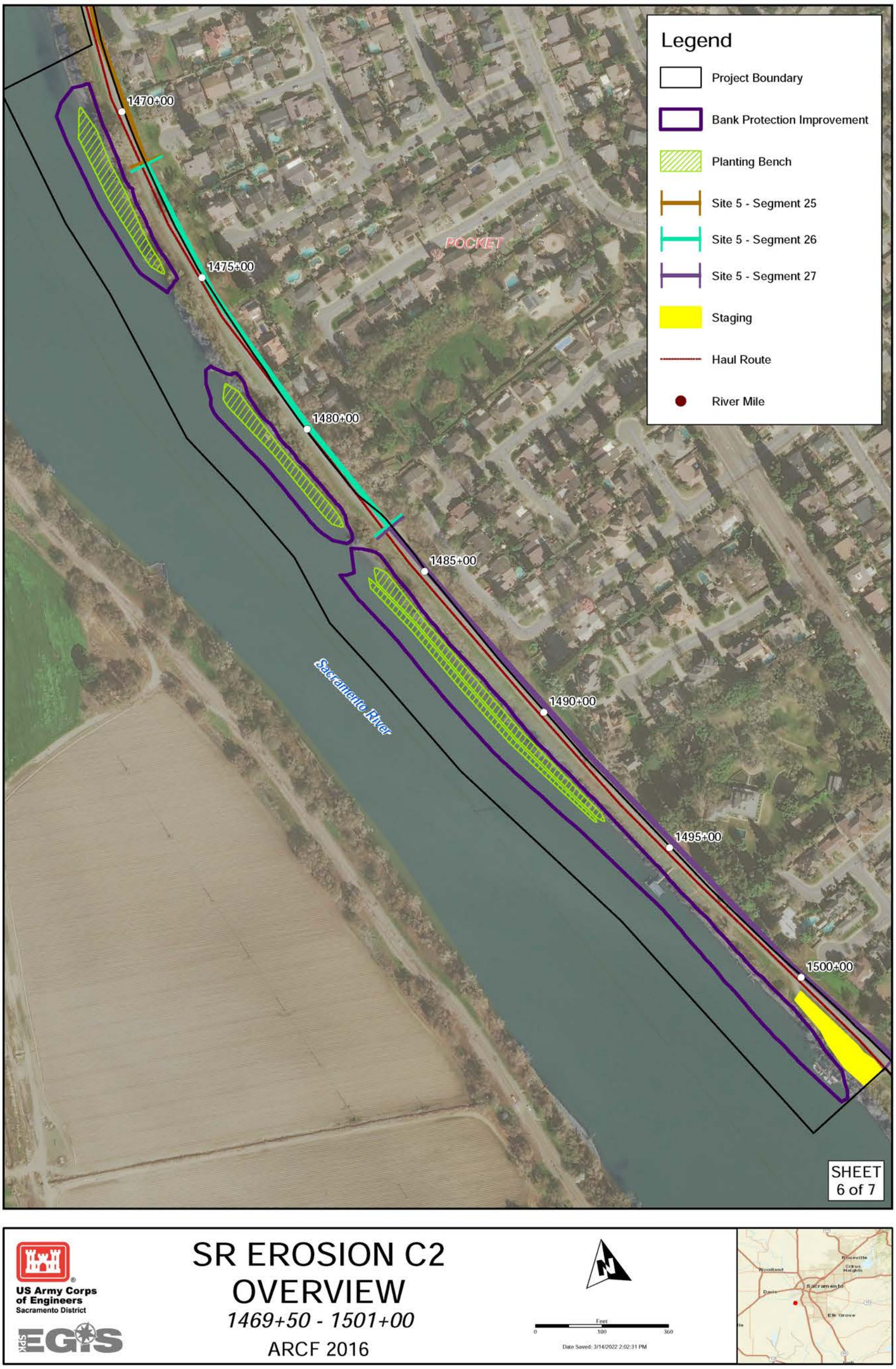

Figure 2-6: Project Features at Site 5 (6 of 7)

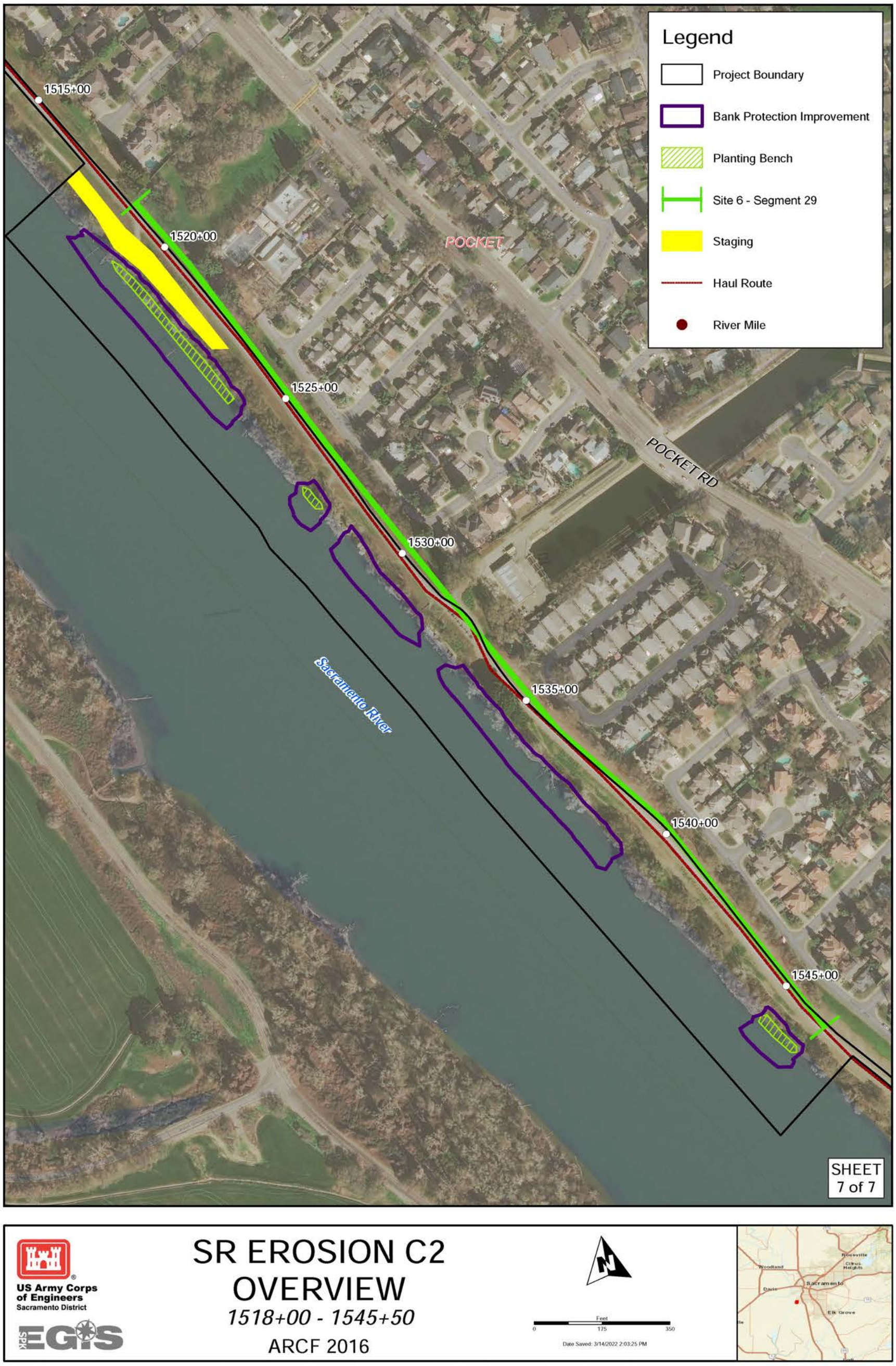

Figure 2-7: Project Features at Site 6 (7 of 7)

2.1 Features of Sacramento River Erosion Contract 2

2.1.1 Bank Protection

The proposed rock bank protection is designed to prevent bank erosion and provide resistance against wavewash. Designs also include a launchable rock toe to provide resilience against river-bed scour. A secondary objective of the design is to shape the improvement footprints to reduce impacts to habitat, as well as provide habitat mitigation with bench plantings wherever possible

In preparation for construction, trees, shrubs, and other vegetation will be removed from work areas. A river barge equipped with a clamshell will be used to place rock and shape the bank protection measures at each of the locations, and an excavator will be used to trench keys. The refined bank protection design will include placing quarry stone at a stable slope no steeper than 2H:1V. The top of the lower quarry stone slope will begin at various elevations depending on the location, and extend to the bottom of the channel, with a minimum thickness of 5 feet. The bank protection includes self-launching rock of an adequate volume to provide toe protection up to a maximum scour depth of 26 feet. Additional rocks at the upstream, and downstream ends of the site are needed to tie in the bank protection to stable ground. Keys are perpendicular to high-flow and are used to connect a tieback or upstream and downstream ends of the revetment into the bank. Tiebacks are spaced intermediately on long stone revetments and are used to tie the revetment section into the key. These are used in areas where bank materials are highly erodible, they can be used to ensure reach integrity and prevent erosion from forming behind the revetment. These features provide additional protection on the upper bank without placing revetment higher up the bank, prevent flanking up and downstream of the project, and can be planted with willows. Tiebacks are placed between 325 and 1,300 feet apart, and riprap volume is similar to the surrounding rock revetment. Above the lower slope, soil-filled quarry stone will be placed, and brush layering of live willow cuttings and placement of and instream woody material (IWM) (orchard trees) may also be used to provide slope stability and habitat benefit. Figure 2-8 presents a typical cross section of a bank protection improvement.

2.1.2 Riparian Bench

The bank protection design incorporates a low elevation planting bench into the channel at several locations. The bench will be composed of a planting soil mix, which will provide a surface that can support vegetation. The purpose of the vegetation within the bench will be to provide overhead cover and near-shore aquatic habitat during the low-flow season for listed fish species and other local wildlife. The width of the bench will vary between approximately 16 feet and 36 feet wide. Benches can either be submerged or placed above the water surface depending on the target riparian species, and desired habitat. Table 2-2 presents a summary of benches proposed as part of the Erosion Contract 2 project, and Figures 2-1 through 2-7 show the locations of the proposed riparian bench plantings. Figure 2-9 presents a typical cross section including a riparian bench.

Table 2-2. Riparian Bench Summary

Site	Type of Riparian Bench	Length (ft)	Area (acres)
2	Upper	1,200	0.6
2	Lower	310	0.1
3	Upper	591	0.3
4	Upper	511	0.1
5	Lower	495	0.5
5	Lower	488	0.4
5	Upper	918	0.5
6	Lower	504	0.2
6	Lower	73	0.0
6	Upper	126	0.1
TOTAL		***4,705***	***3.0***

Note: Individual bench surface areas reflect rounding. Total surface area of bench is correct.

The toe of the planting bench will slope upward at a 20H:1V slope towards upper quarry stone or soil filled stone revetment. The benches will be located at various elevations to provide suitable habitat for the targeted native riparian plant species. The plantings will include species found in Great Valley Mixed Riparian Forest, which is a tall, dense, broadleaf winter-deciduous riparian forest. Riparian species include, but are not limited to, box elder (*Acer negundo* var. *californica*), Fremont cottonwood (*Populus fremontii*), and button willow (*Cephalanthus occidentalis*). Additional topsoil may be placed on the riparian bench if soil is washed away by high flows. Coir fabric may be used to stabilize the soil on the planting bench, which has been successful on the American River.

Plantings will be installed to the extent possible to mitigate for lost riparian and shaded riverine aquatic (SRA) habitat due to construction. Plantings will consist of nursery-propagated species as well as live pole cuttings.

Temporary irrigation systems will be installed for the establishment and maintenance period of the planting bench. An irrigation mainline no thinner than schedule 40 will be installed for the establishment and maintenance period. Water pumped from the river edge will be applied by drip or spray irrigation. All water pump intakes will be screened to maintain an approach velocity of 0.2 feet per second or less when working in areas that may support Federally listed fish species.

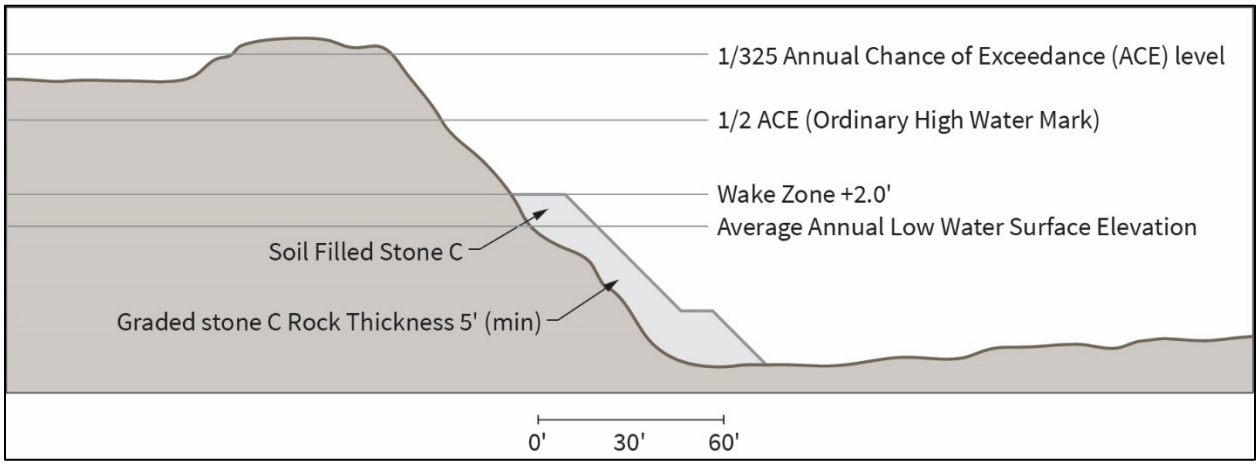

Figure 2-8: Typical Bank Protection Improvement

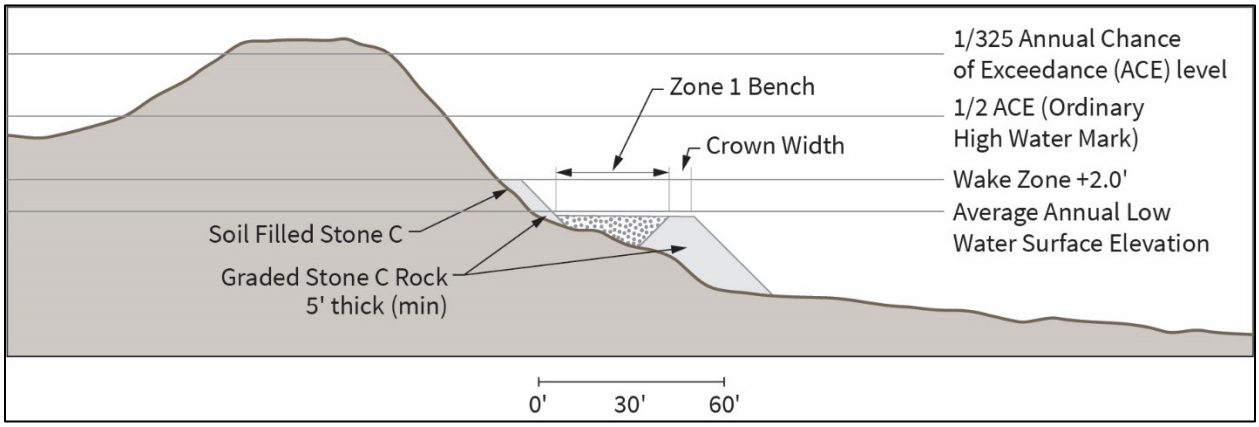

Figure 2-9: Typical Improvement Incorporating a Riparian Planting Bench

2.1.3 In-stream Woody Material

The incorporation of IWM into bank protection designs is a requirement of the 2021 ARCF GRR EIS/EIR National Marine Fisheries Service (NMFS) Biological Opinion (BO) (NMFS 2021). IWM allows for the replacement of in-stream cover for listed fish species that are impacted due to construction. IWM consist of full trees with root balls and canopies. Both large- and medium-sized trees will be used, depending on site conditions. Hardwood species are typically preferred for IWM as they tend to have slower degradation rates than coniferous species when subject to continual inundation. Potential sources for trees include orchard trees or any trees of adequate size and hardness that will be removed onsite for construction.

The trees will be placed into the quarry stone below the planting bench by the root ball and one half of the tree length, keyed into the quarry stone below the riparian bench, with canopies extended into the water column just below the waterside edge of the riparian bench, and oriented in a downstream direction. The counterweight by the planting bench and quarry stone will provide adequate protection for the logs to withstand buoyancy and drag forces from incoming flows and debris. The downstream orientation of the IWM is to mimic the natural orientation of downed trees along river systems. The IWM will be placed at 5- to 10-foot spacing in alternating groups of three to five trees. Tree branches will be oriented to protrude out from

the riparian bench at the summer mean water surface elevation to provide a visual indication to river users of the presence of the bench.

2.1.4 Municipal Drainage System Improvements

A City of Sacramento drainage pump station, Sump 63, is located adjacent to the levee at Site 3. The pump station discharges through four 24-inch diameter steel buried pipelines, which run up and over the levee and have their outlets at the riverbank approximately 30 vertical feet below the levee crown. A 25-foot-square sloping concrete slab revetment provides erosion protection for the riverbank at the pipe outlets. On the waterside edge of the levee crown there is a buried concrete vault that houses a siphon breaker valve for each of the pipelines. A separate ARCF project (Sacramento River East Levee Seepage and Stability Contract 2) will address changes above the ordinary high-water mark, including degrading the levee, removing the four discharge pipes from the land side to just above the waterside toe of the levee at about Elevation 22 feet, removing the valve vault (located within the levee degrade prism), and reconstructing the pipelines and vault once the cutoff wall has been installed. The Sacramento River Erosion Contract 2 Project will address improvements below the ordinary high-water mark, including replacing the remainder of the four pipes, replacing the headwall, and tying the improvements into the existing rock revetment both upstream and downstream of the Sump 63 improvements. Temporary access below the ordinary high-water mark of the river will be required to remove and replace these structures. Temporary access would consist of dewatering the area with the use of a sandbag cofferdam approximately five feet high (1.75 feet above the typical water level) and approximately 120 feet in length. The cofferdams would be installed and work completed between July 1 and October 31, which is outside of sensitive fish species migration windows. A portion of the existing revetment will be sawcut and removed. No concrete will be placed for this project. Work is estimated to take up to approximately 15 days.

2.2 Design Refinements

2.2.1 Site 1

Site 1 extends along the left bank of the Sacramento River from river mile (RM) 58.00 to 58.65. This site begins approximately 3,500 feet from the downstream end of the Old Sacramento floodwall and ends upstream of Miller Park. U.S. Highway 50 crosses the river on the Pioneer Bridge at approximately RM 58.3 with the bridge abutments adjacent to the bank line. Just downstream at approximately RM 58.2, the levee veers southeastward creating a bench between the river and the levee. The river is relatively straight throughout the entire site.

Overall, the bank along Site 1 is in a degraded condition. There is ongoing erosion upstream of the Pioneer Bridge; there is no berm at this location and the steep bank, which coincides with the levee slope, is 50 feet high and encroaches into the levee prism. Other areas of significant bank erosion have been repaired in the past with cobble, old riprap, and concrete or asphalt rubble.

Bank protection will be constructed in Site 1. Table 2-1 presents the lengths of improvements. Figure 2-2 illustrates the locations of these improvements in Site 1.

2.2.2 Site 2

Site 2 extends along the left bank of the Sacramento River from RM 55.50 to 56.20. This site sits at the apex of a meander bend, with a deep scour hole at the toe of the streambank. The northern portion of Site 2 has a relatively wide berm with gently sloping and sparsely vegetated banks. The waterside slope has many patches of riprap with 200-foot-long reach of concrete-covered bank and levee slope that extends into a 900-foot-long reach of concrete-covered bank and levee slope. The river begins a tight bend near RM 56.20, with Site 2 situated along a narrow channel section at the outside of the bend. The concrete structure was placed in the 1920s and is supported by vertical timber walls at the toe. The structure has held up well for nearly 100 years; however, it has been rapidly decaying over the past 10 years. Downstream, the levee prism is already encroached, the bank is very steep, and it appears that toe erosion is progressing.

Bank protection and planting benches will be constructed at Site 2. Existing embankment and concrete material will be removed up to the levee crown and replaced with compacted clay. Figure 2-3 illustrates the locations of these improvements in Site 2.

2.2.3 Site 3

Site 3 extends along the left descending bank of the Sacramento River from RM 53.5 to 53.80 and RM 53.0 to 53.50, respectively. Site 3 is on the apex of a sharp outside bend with a steep bank, essentially no berm width, and a deep channel at the toe of the bank. There is a continuous line of large riprap revetment with willow and other vegetation growth along the waterside slope, and the downstream end of the sharp outside bend begins the area known as the Pocket. The bank and levee slope in this area are steep, there is narrow or no berm width, and the deepest portion of the channel borders the bank toe. There is a very short 200-foot-long reach of modern revetment at RM 53.47 which appears to have adequate rock volume and will remain.

Figure 2-4 illustrates the locations of bank protection improvements and planting bench in Site 3.

2.2.4 Site 4

Site 4 extends along the left descending bank of the Sacramento River from RM 51.15 to 51.30. Upstream, the deepest part of the river channel begins to transition from left to right bank with Site 4 on the left bank. Site 4 represents a gap in protection between two modern revetment repairs.

Figure 2-5 illustrates the locations of bank protection improvements and planting bench in Site 4.

2.2.5 Site 5

Site 5 extends along the left descending bank of the Sacramento River from RM 50.66 to 51.15. Site 5 includes modern revetment covering most of the site, with older repairs scattered

throughout. Figures 2-5 and 2-6 illustrate the locations of bank protection improvements and planting benches at Site 5.

2.2.6 Site 6

Site 6 extends along the left descending bank of the Sacramento River from RM 49.45 to 50.60. This site is located along a relatively narrow and straight reach of the river. The upstream portion of the site has continuous modern revetment along the lower levee slope, toe, and upper bank. The slope is very steep and encroached into the existing levee. The downstream portion of the site includes two modern revetment sites between RM 49.5 and 49.6, and about 200 feet between RM 49.8 and 49.9. There is also a large concrete stormwater drainage outfall at RM 49.7 with a pump station on the landside of the levee. There is little to no berm with steep slopes that have also already encroached into the levee prism. Figures 2-6 and 2-7 illustrate the locations of bank protection improvements and planting benches in Site 6.

2.3 Construction Details

Construction of the proposed project refinements includes the following actions:

- Set up designated temporary construction access and staging areas and mobilize equipment to the staging areas.
- Protect trees and structure that are not removed with fencing or signage.
- Clear and grub work area, including, but not limited to, removing trees and vegetation along the levee embankment.
- Construct bank protection, planting benches, and IWM.
- Demobilize construction equipment. Leave the site free of garbage in a condition similar to the pre-project condition. Seed and place erosion protection measures on the levee landside slope and other disturbed areas.
- Install riparian/SRA plantings in the planting berm.
- Replace pipes at Sump 63. Work will be conducted from the landside.

2.3.1 Site Preparation Access and Staging

Prior to initiating construction, the project area will be enclosed by a temporary fence and lighting will be installed to limit entry into the site and ensure site safety and security. To the greatest extent possible, existing trees will be protected in place, some of which may need to be trimmed, but some trees will be removed from the construction footprint. Site preparation may also include removing submerged instream woody debris and fallen trees within the construction footprint. Tree removal and site preparation will occur from the top of the levee. A turbidity curtain or other minimization measures approved by NMFS and USFWS will be installed prior to any in-water work conducted on the waterside of the levee.

Construction access (entrance and exit) will be at various locations illustrated on Figures 2-1 through 2-7, including along Front Street, Broadway, at the western terminus of Sutterville Road, along Riverside Boulevard south of 35th Avenue, and through Zacharias Park, Sump 132, and Garcia Bend Park. The barges will access the site along existing waterways between the Delta and the construction sites. Constructing the bank protection site will occur from the waterside of the levee via barges. Boaters and other water-borne users of the river will be warned of the construction activities by warning buoys placed at both the up- and downstream ends of work areas. For the portion of the bank protection improvement at Site 1 that is located beneath the Pioneer Bridge, construction will occur from the landside due to access constraints in the river. Workers, material, and equipment will access this location from Broadway or Front Street.

Staging will occur on the barges which will be brought to the site pre-loaded with construction materials and construction equipment. Use of the levee crown and levee road will be limited to the construction crews' personally owned vehicles, occasional deliveries, and construction facilities including the aforementioned fencing and lighting as well as portable toilets and hand washing stations. Tree-removal vehicles and equipment will also access the site from the landside. Several sites within the construction footprint have been identified for staging, as illustrated on Figures 2-1 through 2-7.

The barges will be loaded with material and equipment up to 96 miles downstream, and may be rafted together and brought to the project site by a combination of push and/or tugboat. Barges loaded with materials will be brought alongside the crane/excavator barge, and then the material barges will rotate as they are emptied and reloaded. Placement of material will either be by crane with a 100-foot boom or by excavator with long stick and/or boom.

2.3.2 Borrow and Disposal

Construction material will be acquired from an outside source by the construction contractor and will meet the requirements established in the plans and specifications by USACE. The material sources also must have current permits for operation, meet the required environmental standards, and be approved in writing by USACE.

The construction contractor will be responsible for selecting a disposal site located outside the construction limits. This disposal site must have current permits for operation, meet the required environmental standards, and be approved in writing by USACE.

Table 2-2 presents the material requirements for construction of the proposed refinements.

Table 2-3. Materials Required for Construction of the Proposed Refinements

Material Type	Total
Grade Stone C (cy)	354,600
Soils – filled riprap (cy)	21,500
Concrete Removal (cy)	16,200
Remove Embankment (cy)	16,500
Levee Embankment (cy)	16,500
Topsoil (cy)	17,400
Seeding (acre)	6.1
Willow Stakes (ft)	11,900
Beaver Fencing (ft)	31,800
Instream Woody Vegetation (ft)	12,700

2.3.3 Construction Workers and Schedule

Construction workers will access the work areas along existing freeways, highways, county and city roads, and levee patrol roads. Workers will park on the levee road. Construction hours will comply with the City of Sacramento noise ordinance, which allows construction from 7:00 a.m. to 6:00 p.m. Monday through Saturday, and between the hours of 9:00 a.m. to 6:00 p.m. on Sundays. No work or hauling will take place outside of the construction exemption times without permission applied for and given by the City.

Tree removal is expected to begin in October of the year preceding construction (2022 or 2023) and conclude by February 14 of the construction year, to the extent feasible. Construction is likely to occur in two phases during each year in 2023 and 2024. The first phase will include mobilization, Best Management Practices (BMP) installation, and out-of-water earthwork and improvements. This phase will start in late June or early July as the winter high flow recedes and the likelihood of rainfall reduces. The construction contractor will submit a mobilization/demobilization work plan prior to starting the work. The second phase of construction will occur from July 1 to October 31. This will include constructing planting benches and launchable rock toe. It will also include installing the temporary erosion control seeding of disturbed areas. Any alterations to the levee prism should be repaired prior to November 1, and all in-water work should be complete by October 31. Demobilization and cleanup will occur in October and November 2024.

2.3.4 Demobilization and Cleanup

After construction is complete, the staging areas, landside levee slope, and any other bare earth areas will be reseeded with native grasses and forbs to promote revegetation and minimize soil erosion. Any roads or other access areas damaged by construction activities will be fully repaired and restored to its preconstruction condition. All trash, excess construction materials,

and construction equipment will be removed, and the site will be left in a safe and clean condition.

2.4 Operations and Maintenance

A management plan will be developed in coordination with the resource agencies to ensure that native riparian plantings installed within the planting benches are protected, managed, monitored, and maintained for a period following installation and that they are on an ecologically sustainable trajectory. This management plan will be consistent with the Habitat Mitigation, Monitoring, and Adaptive Management Plan developed for the 2016 ARCF GRR Final EIS/EIR. The management plan will outline activities and establish objectives, priorities, and tasks for monitoring, managing, maintaining, and reporting on the established habitats.

Maintenance activities will start immediately following completion of the initial planting. General clean-up maintenance will be performed throughout the year though some activities would vary according to weather and season. Examples of general clean-up and site maintenance include picking up trash, making repairs from vandalism, and removing used planting accessories (bamboo stakes, ties, browse guards, etc.). For watering maintenance, crews will connect the water pump to the irrigation system for each irrigation cycle per the schedule described in the management plan. The irrigation system may be partially or entirely removed for seasonal high-water flows. A water truck at the levee crown may be used as needed.

Invasive plant species incursions will be controlled as early as possible to prevent wide-scale establishment and minimize control efforts such as pesticide usage. The techniques available for controlling terrestrial and aquatic species may involve hand or mechanical removal and chemical treatment. Only chemicals approved for use in California in or around aquatic habitats may be used. Crews will weed within the watering basins of the plantings and within an 18-inch radius of each woody and grass associated plant. Invasive species mitigation will prevent nonnative herbaceous growth and soil moisture competition. Maintenance crews will mow weeds to below 6 inches in height during the growing season.

Plant material installation is designed to mitigate for lost riparian and SRA habitat after construction. The proposed planting design includes an appropriate mix of local native riparian trees and shrubs. Tree and shrub species were selected based on their ability to establish and be self-sustainable on the riparian bench which may be seasonally inundated and has limited soil volume.

Plantings will consist of nursery-propagated species and live pole cuttings. The overhead SRA surface indicator consists of two components: 1) shaded stream surface, and 2) linear extent of shoreline cover. The area of shaded stream surface and linear extent of shoreline cover will be monitored as required in the management plan.

Adaptive management will commence upon completing the habitat mitigation project and continue as necessary to ensure the success of the on-site habitat mitigation. The adaptive management process provides a mechanism by which remedial actions can be implemented if success criteria are not met or fail to persist once the criteria have been met (e.g., because of competition from invasive weeds).

CHAPTER 3 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

3.1 Introduction

3.1.1 Approach to Analysis

Each resource topic section includes a brief summary of the analysis of this topic in the ARCF GRR Final EIS/EIR. Supplemental information on environmental and regulatory setting is provided for particular resource topics, where necessary to support the supplemental impact analysis. Thresholds used to evaluate the significance of impacts are carried forward from the ARCF GRR Final EIS/EIR and are herein incorporated by reference, with updated thresholds identified as applicable. Only those thresholds requiring an updated analysis due to new information are discussed. Under each resource, any significance criteria lacking an evaluation section remain unchanged from the ARCF GRR Final EIS/EIR, and previous analyses remain sufficient.

O&M activities will be generally unchanged from those that currently occur under pre-project conditions. Levee encroachments and access will continue to be managed as necessary to maintain the integrity and safety of the newly modified levees. Therefore, because no changes are proposed, O&M activities will have no new or substantially more severe significant adverse effects that were not analyzed for Sacramento River Erosion Contract 2. Therefore, O&M effects are not discussed further in this Supplemental EIR.

Three new topic areas were added to the State CEQA Guidelines in 2018: energy, Tribal Cultural Resources (TCRs), and wildfire. These topic areas were not specifically addressed in the 2016 ARCF GRR Final EIS/EIR. These topic areas are addressed in this Supplemental EIR as follows; energy and wildfire are described in Section 3.1.2, “Resource Topics Not Discussed in Detail,” and TCRs are addressed in Section 3.7, “Cultural and Tribal Cultural Resources.”

Mitigation measures that are proposed to reduce significant impacts have been previously included in the ARCF GRR Final EIS/EIR and prior Supplemental EIRs (USACE and CVFPB 2021a and 2021b). Mitigation Measure FISH-1 includes updates to reflect the NMFS 2021 BO, and this measure shows those changes in underline and strikethrough. Other mitigation measures are unchanged from those previously adopted. All mitigation measures to reduce impacts of the Sacramento River Erosion Contract 2 are included in this Supplemental EIR document.

3.1.2 Resources Not Considered in Detail

Some resources were eliminated from further analysis in this Supplemental EIR because the effects from project refinements were negligible, or because the Sacramento River Erosion Contract 2 will not create additional impacts to the resources beyond the scope of those addressed regionally within the ARCF GRR EIS/EIR. Other resources below were eliminated from detailed analysis but were not described in the ARCF GRR EIS/EIR and so are discussed below.

Energy

The project refinements will be constructed using typical construction methods and will not include any activities identified as wasteful or having unusually high energy consumption. Operational activities and energy use will be similar to existing activities. This topic is not discussed further in this Supplemental EIR.

Public Utilities

As a part of the design process, engineers assessed the project site to determine the presence of underground utility lines that have the potential to be affected by the proposed refinements. Utilities are present at the project site and include overhead power lines, storm sewer, and gas pipes at Site 1, underground communication lines at Site 3, an unknown utility and underground electrical lines at Site 5, and an unknown utility at Site 6. The proposed refinements include limited excavation and utilities can generally be avoided or protected in place. Since the project refinements only incorporate a limited amount of excavation, it is not anticipated that any unexpected utilities will be found during project construction. However, if any utilities are later identified, disruption to public utilities and service systems will be mitigated with Mitigation Measure UTL-1 below, which was adopted in the ARCF GRR Final EIS/EIR and consolidated in an earlier Supplemental EIR (USACE and CVFPB 2021b).

Mitigation Measure UTL-1: Verify Utility Locations, Coordinate with Affected Utility Owners/Providers, Prepare and Implement a Response Plan, and Conduct Worker Training with Respect to Accidental Utility Damage

The Project Partners would implement the measures listed below before construction begins to avoid and minimize potential damage to utilities, infrastructure, and service disruptions during construction.

- Coordinate with applicable utility and service providers to implement orderly relocation of utilities that need to be removed or relocated.
- Provide notification of any potential interruptions in service to the appropriate agencies and affected landowners.
- Verify through field surveys and the use of the 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 the area of 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 notification of 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 due to construction detours.

The construction contractor will follow standard procedures for further identifying underground utilities in the project area to confirm the site conditions. If underground utilities are identified by the utility providers or the City, the contractor will coordinate any necessary BMPs that will need to be implemented. Based on current site data and available information, no effects to public utilities are anticipated during construction.

Socioeconomics and Environmental Justice

The closest residences to the project area are single family homes located immediately adjacent to the project levee in the Little Pocket and Pocket/Greenhaven neighborhoods, approximately 150 feet from the riverbank. The levee is located between the construction area along the riverbank and the residences. The residents in these neighborhoods do not meet the demographic characteristics to be considered a low income or minority population. The project will reduce flood risk to all populations protected by the levee and will not create disproportionate benefits or disproportionate adverse effects to residents of nearby single-family and multi-unit housing.

Small numbers of homeless individuals sometimes camp in the vicinity of the project area. These camps are temporary and often relocate along the Sacramento River and American River Parkway. Since these groups are transient by nature, the likelihood that a homeless encampment will be active near the project area during construction is difficult to forecast. Such a group could be temporarily disturbed during construction by noise and air pollutant emissions. If homeless encampments are present in areas where construction will occur as part of the project, USACE, CVFPB, and the construction contractor will work with the City and County of Sacramento and the City's Police Department to notify and remove these encampments while construction occurs. Therefore, there will be no Socioeconomic or Environmental Justice impacts from Sacramento River Erosion Contract 2 refinements.

Land Use

The entire Sacramento River east bank and levee are currently zoned for parks and recreation and are encompassed within the overall ARCF 2016 project area. The ARCF GRR Final EIS/EIR analysis found that many homes in the Little Pocket and Pocket areas back up to the levee with little or no land between the levee toe and the fence or backyard, and it was assumed that some acquisition of private property will be required for flood protection levee easements. All property acquisitions will be conducted in compliance with Federal and State relocation law requiring appropriate compensation. Therefore, this effect was determined to be less than significant in the ARCF GRR Final EIS/EIR.

The proposed land use within the project site will be consistent with adopted County and City General Plan policies related to flood risk reduction, land use designations, and zoning codes that apply to each of these sites. There will be no change in these land use designations as a result of project refinement implementation. The project refinements do not occur in an area covered by an approved Habitat Conservation Plan or Natural Community Conservation Plan. The levee improvements and staging areas will be located near residential areas along the

Sacramento River east levee, including areas in the Pocket and Little Pocket areas, where residential land uses are generally located along the landside toe of the levee. Construction of levee improvements will occur within the existing levee corridor, and there are no proposed activities that will physically divide an established community. Therefore, land use impacts will not differ from those identified in the ARCF GRR Final EIS/EIR.

Transportation and Circulation

Sacramento River Erosion Contract 2 construction will be undertaken primarily from river barges. Materials and equipment will be carried to the site on river vessels and therefore will not impact vehicle traffic on nearby roadways. The only vehicles with access to the site from area roadways will be the personal vehicles of construction crew members, occasional deliveries, and vehicles and equipment associated with tree removal. Staging and activity associated with Sump 63 improvements will also occur on the landside using equipment and personnel who will access the site via area roadways, but the traffic associated with these activities will include a small number of vehicles and will occur over a short duration.

The ARCF GRR Final EIS/EIR includes several measures to reduce the effects of construction activities on traffic and circulation. These measures have been consolidated into Mitigation Measure TR-1 (CVFPB and USACE 2021b), which is presented below.

Mitigation Measure TR-1: Prepare and Implement a Traffic Control and Road Maintenance Plan

Before the start of project-related construction activities, Project Partners would require the contractor to prepare a Traffic Control and Road Maintenance Plan. This plan would describe the methods of traffic control to be used during construction. All on-street construction traffic would be required to comply with the local jurisdiction's standard construction specifications. The items listed below would be included in the plan and as terms of the construction contracts:

- Follow the standard construction specifications of affected jurisdictions and obtain the appropriate encroachment permits, if required. Incorporate the conditions of the encroachment permit into the construction contract. Encroachment permit conditions would be enforced by the agency that issues the encroachment permit.

- 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.

- Proposed lane closures would be coordinated with the appropriate jurisdiction and be minimized to the extent possible during the morning and evening peak traffic periods. Construction specifications would limit lane closures during commuting hours where feasible, and 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. Signs would be provided to direct traffic through detours.

- Post signs providing advance notice of upcoming construction activities at least 1 week in advance so that motorists are able to avoid traveling through affected areas during these times.

- Provide bicycle detours to allow for continued use by bicycle commuters. Maintain safe pedestrian and bicyclist access 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 should be located as far away as possible from areas where bicyclists and pedestrians are present.

- Notify (by means such as physical signage, internet postings, letters, or telephone calls) and consult with emergency service providers to inform them of construction activities, maintain emergency access, and facilitate the passage of emergency vehicles on city streets during construction activities. Emergency vehicle access would be made available at all times.

- The construction contractor would document pre- and post- construction conditions on roadways used during construction. This information would be used to assess damage to roadways used during construction. The contractor would repair all potholes, fractures, or other damages.

- Comply with Caltrans requirements by submitting this Traffic Control and Road Maintenance Plan to Caltrans for review to cover points of access from the State highway system (I-5) for haul trucks and other construction equipment.

Hydraulics and Hydrology

The proposed levee improvements will not alter the present levee alignment in its existing location (fix in place) and will not alter river flows from those expected in the future without project condition. There will also be no significant change to or effect on river hydraulics and hydrology with the project in place. Long-term O&M of the project site will not be significantly different under Erosion Contract 2 than under existing conditions and will also have no impact on hydrology and hydraulics. Hydraulic model results show that adding bank protection to the proposed project site will not substantially alter the existing drainage pattern of the site and river therefore not causing erosion on the opposite bank. The proposed project refinements will not 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. The proposed project refinements will not place housing within a 100-year flood hazard or expose people or structures to a significant risk of loss, injury, or death involving flooding. The proposed project will not place structures within a 100-year flood hazard area which would impede or redirect flood flows. No effects to hydraulics and hydrology due to the proposed project refinements are anticipated.

Wildfire

The project site is not located in or near a State Responsibility Area or Very High Fire Hazard Severity Zone in which additional analysis of wildfire hazard would be called for under

Appendix G of the State CEQA Guidelines. This topic is not discussed further in this Supplemental EIR.

3.2 Geological Resources

3.2.1 Environmental and Regulatory Setting

The environmental and regulatory setting in Section 3.2 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EIR and is not repeated.

3.2.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project refinements would result in a potentially significant impact to geological resources if they would expose people or structures to substantial effects involving:

- Rupture of a known earthquake fault, strong seismic shaking, or seismic-related ground failure, including liquefaction;
- Landslides, substantial soil erosion, or permanent loss of topsoil;
- Locating the project on an unstable geologic unit, or on a geologic unit that would become unstable as a result of the project; and/or,
- Locating the project on expansive soil, as defined in the Uniform Building Code.

An additional threshold, not included in the ARCF GRR Final EIS/EIR, is considered in this analysis. The Society of Vertebrate Paleontology (SVP), a national scientific organization of professional vertebrate paleontologists, has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, analysis, and curation (SVP 1995, 1996, 2010, 2019). Most practicing professional paleontologists in the nation adhere to the Society of Vertebrate Paleontology assessment, mitigation, and monitoring requirements, as specified in its standard guidelines.

The proposed project refinements were determined to result in a significant effect related to paleontological resources if they would:

- Directly or indirectly destroy a unique paleontological resource or geologic feature. For the purposes of this analysis, a unique resource or site is one that is considered significant under professional paleontological standards. An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:
- a type specimen (i.e., the individual from which a species or subspecies has been described);

- a member of a rare species;

- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;

- a skeletal element different from, or a specimen more complete than, those now available for its species; or

- a complete specimen (i.e., all, or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare.

Impact Analysis

Potential Temporary, Short-Term Construction-Related Erosion

The proposed project refinements involve placing rock protection on the riverbank and do not involve a substantial amount of excavation within the project footprint. Therefore, the project refinements will not cause permanent loss of topsoil or destroy unique paleontological resources or geologic features through earthmoving work.

Construction activities will occur during the season when rainfall is the least likely and river flows are at their lowest, reducing the potential for water erosion. However, construction activities could result in the temporary and short-term disturbance of soil, which could expose disturbed areas on the waterside of the levee to storm events. This temporary, short-term construction impact will be potentially significant. Implementing Mitigation Measure GEO-1 will reduce this impact to a less-than-significant level by requiring the preparation and implementation of a SWPPP with appropriate BMPs and the implementation of a Spill Prevention Control and Countermeasures Plan (SPCCP). These actions will enable source control and re-vegetation which will reduce erosion and maintain surface water quality conditions in adjacent receiving waters as well as prevent the discharge of oil into navigable waters.

Potential to Directly or Indirectly Destroy a Unique Paleontological Resource or Site

The proposed project refinements do not involve substantial amounts of excavation and the project area is located in Holocene-aged sediments, which are considered to be of low paleontological potential (2016 ARCF GRR Final EIS/EIR). Holocene deposits, in general, contain only the remains of extant, modern taxa (if any resources are present), which are not considered “unique” paleontological resources. The potential to encounter a unique paleontological resource is very low and the impact will be less than significant.

3.2.3 Mitigation Measures

The following mitigation measure has been previously adopted (USACE and CVFPB 2021b).

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Prior to the start of earthmoving activities, the Project Partners will obtain coverage under the State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) stormwater permit for general construction activity (Order 2009-0009-DWQ), including preparation and submittal of a project-specific SWPPP at the time the NOI to discharge is filed. The SWPPP shall identify and specify the following:

- the use of an effective combination of robust erosion and sediment control BMPs and construction techniques that shall reduce the potential for runoff and the release, mobilization, and exposure of pollutants, including legacy sources of mercury from project-related construction sites. These may include but would not be limited to temporary erosion control and soil stabilization measures, sedimentation ponds, inlet protection, perforated riser pipes, check dams, and silt fences;

- the implementation of approved local plans, non-stormwater management controls, permanent post-construction BMPs, and inspection and maintenance responsibilities;

- the pollutants that are likely to be used during construction that could be present in stormwater drainage and non-stormwater discharges, including fuels, lubricants, and other types of materials used for equipment operation;

- the means of waste disposal;

- spill prevention and contingency measures, including measures to prevent or clean up spills of hazardous waste and of hazardous materials used for equipment operation, and emergency procedures for responding to spills;

- personnel training requirements and procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP; and

- the appropriate personnel responsible for supervisory duties related to implementation of the SWPPP.

Where applicable, BMPs identified in the SWPPP will be in place throughout all site work, construction/demolition activities, and will be used in all subsequent site development activities. BMPs may include, but are not limited to, such measures as those listed below.

- work window- conduct earthwork during low flow periods (June 1 to October 31);

- to the extent possible, stage construction equipment and materials on the landside of the levee 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;

- stockpile soil on the landside of the levee reaches, and install sediment barriers (e.g., silt fences, fiber rolls, and straw bales) around the base of 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 will 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, will be installed as needed to stabilize disturbed areas until vegetation becomes established;

- conduct water quality tests specifically for increases in turbidity and sedimentation caused by construction activities;

- a copy of the approved SWPPP shall be maintained and available at all times on the construction site; and

- Project partners will also prepare a SPCCP. A SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. The contractor will develop and implement a SPCCP to minimize the potential for adverse effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP will be completed before any construction activities begin. Implementation of this measure will comply with state and Federal water quality regulations. The SPCCP will 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 will outline descriptions of containments facilities and practices such as doubled-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures, and spill response kits. It will also describe how and when employees are trained in proper handling procedures and spill prevention and response procedures.

Significance after Mitigation

The significant impact related to geological resources will be reduced to a less-than-significant level with implementation of Mitigation Measure GEO-1, because the Project Partners will implement proven BMPs to prevent erosion.

3.3 Water Quality

3.3.1 Environmental and Regulatory Setting

The environmental and regulatory framework and existing conditions described in Section 3.5 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EIR and therefore is not repeated here. Some additional, relevant information is provided below.

Designated beneficial uses for the Sacramento River south of the "I" Street Bridge (i.e., the Delta) consist of: municipal and domestic supply, agricultural irrigation and stock watering, industrial processing and service supply, recreation (water contact and non-contact), commercial and sport fishing, warm and cold water freshwater habitat, warm and cold water migration, spawning habitat, wildlife habitat, and navigation (CVRWQCB 2019).

3.3.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project refinements would result in a potentially significant impact to water quality if they would:

- Violate water quality standards or waste discharge requirements;
- substantially deplete groundwater supplies or interfere substantially with ground water recharge;
- substantially degrade water quality; and/or,
- alter regional or local flows resulting in substantial increases in erosion or sedimentation.

One additional threshold to the ARCF GRR Final EIS/EIR is considered in this analysis. The project was determined to result in a significant effect related to water quality if it would:

- Conflict with or obstruct the implementation of a water quality control plan or a sustainable groundwater management plan.

Impact Analysis

Construction Impacts to Water Quality

Construction of the proposed project refinements include placing rock revetment along the riverbank below the ordinary high-water mark (OHWM) of the Sacramento River. This will temporarily increase turbidity in the vicinity of the construction area. Additionally, placing revetment could cause temporary sediment plumes, generated from the river bottom and levee side. The use of barges to install the revetment could cause additional turbidity in the immediate vicinity of the project. Under the CWA, a Section 401 permit and Section 404(b)(1) alternatives evaluation will be required before work subject to Section 401 below the OHWM begins. After construction is complete, turbidity reductions are expected in the area because there will be less

exposed soil to erode and deposit into the river and spaces between the quarry stone will trap sediment over time.

The temporary irrigation system will have a smooth transition between the bankline. and the pump's screen structure used in the system will be important to minimize eddies and undesirable flow patterns in the vicinity of the screen that may cause bank or riverbed erosion and increase turbidity. Use of irrigation water pumps are permitted under a Programmatic Section 401 permit from SWRCB for the entire ARCF project.

Temporary, short-term construction-related impacts to water quality will be significant due to the turbidity increases. This impact will be reduced to a less-than-significant level after implementation of Mitigation Measures WATERS-1 and GEO-1 because USACE and its construction contractor will apply measures to compensate for fill of protected waters and implement BMPs to prevent erosion.

3.3.3 Mitigation Measures

The following mitigation measures have been previously adopted (USACE and CVFPB 2021b).

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters.

In compliance with the CWA, the Project Partners will compensate for fill of State and Federally protected waters to ensure no net loss of functions and values. Water quality certification pursuant to Section 401 of the CWA will be obtained from the Central Valley RWQCB before starting project activities subject to Section 401. Any measures determined necessary during the permitting processes will be implemented, such that there is no net loss of functions and values of jurisdictional waters.

Mitigation may be accomplished through habitat replacement, enhancement of degraded habitat, off-site mitigation at an established mitigation bank, contribution of in-lieu fees, or other methods acceptable to the regulatory agencies, ensuring there is no net loss of waters of the United States. If compensation is provided through permittee-responsible mitigation with additional NEPA and CEQA documentation, a mitigation plan will be developed to detail appropriate compensation measures determined through consultation with USACE and Central Valley RWQCB. These measures will include methods for implementation, success criteria, monitoring and reporting protocols, and contingency measures to be implemented if the initial mitigation fails.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Please *refer* to Section 3.2.3 for the full text of this mitigation measure.

Significance after Mitigation

The significant impact related to water quality will be reduced to a less-than-significant level with implementation of Mitigation Measures WATERS-1 and GEO-1 because the Project Partners will apply appropriate and proven measures to compensate for fill of protected waters and implement BMPs to prevent erosion.

3.4 Vegetation and Wildlife

3.4.1 Environmental and Regulatory Setting

The environmental and regulatory framework described in Section 3.6 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EIR and therefore is not repeated here. Some additional, relevant information is provided below.

Existing Conditions

The project area consists primarily of riparian and SRA habitat. USFWS defines SRA as near shore aquatic area occurring at the interface between a river and adjacent woody riparian habitat. The principal attributes of SRA habitats include: (1) adjacent bank being composed of natural, eroding substrates which supports riparian vegetation that either overhangs or protrudes into the water; and (2) water containing variable amounts of woody debris such as leaves, logs, branches, and roots; as well as variable depths, velocities, and currents (USFWS, 1992).

The riparian habitat in the area consists of mature, well-established trees such as Fremont Cottonwood (*Populus fremontii*), valley oak (*Quercus lobata*), black willow (*Salix gooddingii*), and box elder, Oregon ash (*Fraxinus latifolia*), western sycamore (*Platanus racemosa*), and white alder (*Alnus rhombifolia*). The riparian shrub layer consists of smaller trees and shrubs; representative species commonly observed are poison oak (*Toxicodendron diversilobum*), sandbar willow (*Salix exigua*), and Himalayan blackberry (*Rubus discolor*). Elderberry shrubs (*Sambucus mexicana*), the host plant of the Federally listed valley elderberry longhorn beetle (VELB; *Desmocerus californicus dimorphus*) are commonly observed in the riparian habitat along the Sacramento River and have been mapped (see Figures B1 through B10 in Appendix B-1). However, all elderberry plants within the project area will be avoided, according to conservation measures outlined in the Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (USFWS 2017).

Wildlife inhabiting the project area are dependent upon the trees associated with riparian habitats for vegetation diversity; microclimate conditions; and the availability of water, food, and cover. Several species of raptors, including Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), Cooper's hawk (*Accipiter cooperii*), and great horned owl (*Bubo virginianus*), build their nests in the crowns of cottonwood, valley oak, and other large trees that currently exist on both the landside and waterside of the Sacramento River levees and within the project area. Natural cavities and woodpecker holes provide nesting sites for cavity-nesting species, including wood duck (*Aix sponsa*), common merganser (*Mergus merganser*), American kestrel (*Falco sparverius*), tree swallow (*Tachycineta bicolor*), and western screech owl (*Megascops kennicottii*). Riparian scrub supports large numbers of insects and attracts passerines, including several species of warblers and

hummingbirds. Due to the urban development adjacent to the levees in the project area, wildlife is limited primarily to small mammals and various avian species, especially those species that are adapted to human disturbance.

Detailed habitat maps are included in Appendix B.

3.4.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project refinements would result in a potentially significant impact to vegetation and wildlife if they would cause:

- Substantial loss, degradation, or fragmentation of any natural communities or wildlife habitat;
- Substantial effects on a sensitive natural community, including Federally protected wetlands and other waters of the U.S., as defined by Section 404 of the CWA (this threshold has been updated as described below);
- 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, Sacramento County Tree Preservation Ordinance, or the City of Sacramento Protection of Trees Ordinance; or
- Substantial adverse effects on native wood habitats in the American River Parkway, resulting in the loss of vegetation and wildlife.

The following threshold has been updated to reflect the most current State CEQA Guidelines:

- Substantial adverse effect on State and Federally protected waters of the United States, including wetlands, through direct removal, filling, hydrological interruption, or other means.

Impact Analysis

<u>Adverse Effects on Riparian Habitat and Waters of the United States</u>

Construction of the proposed project refinements including placement of bank protection measures, the riparian planting bench, and IWM, will impact to approximately 3.5 acres of riparian habitat. Up to 3.5 acres of tree canopy will be removed, potentially including up to 3.5 acres of SRA habitat. This impact will be significant, as specified in the ARCF GRR EIS/EIR.

The re-vegetation portion of the proposed project refinements seeks to mimic elements of the Great Valley Mixed Riparian Forest complex, which is a tall, dense, broad-leafed winter-

deciduous riparian forest. The tree canopy typically creates a solid layer and is moderately densely comprised of several riparian species including box elder, black walnut (*Juglans hindsii*), sycamore, Fremont cottonwood, and several species of willows. Understories will consist of these species in addition to shade-tolerant shrubs like button willow and Oregon ash. The temporary irrigation system will be installed for the establishment and maintenance period of the planting bench, as previously discussed in this Supplemental EIR.

Construction work below the OHWM in protected waters of the U.S. requires compliance with CWA Sections 404 and 401. A Section 404(b)(1) alternatives evaluation and Section 401 Notice of Intent (NOI) under the existing Programmatic 401 Permit will be completed prior to the start of construction work below the OHWM that is subject to Section 401, as stipulated in Mitigation Measure Waters-1, along with other measures to compensate for impacts to waters of the US. Mitigation Measure GEO-1 will control erosion, sedimentation, and waste discharge, therefore reducing impacts to vegetation and wildlife. Long-term impacts to vegetation and wildlife will be less than significant with the implementation of the mitigation measures.

Implementation of flood protection activities by public agencies does not require a tree removal permit pursuant to the City of Sacramento Municipal Code. Therefore, there will be no conflict with the City of Sacramento Tree preservation policy or ordinance.

Mitigation Measures VEG-1 and VEG-2 will reduce the long-term impact on vegetation and wildlife (including nesting birds, roosting bats, and fish species within the channel) to less than significant by avoiding impacts, minimizing impacts, and compensating for habitat removal in coordination with USFWS and NMFS. After construction is complete, the riparian bench will be planted with native riparian tree and shrub species. However, the compensation habitat is expected to take many years to provide the value of habitat provided by the vegetation expected to be removed. Therefore, the impacts due to short-term habitat loss will remain significant and unavoidable, as specified in the ARCF GRR Final EIS/EIR.

3.4.3 Mitigation Measures

The following mitigation measure has been previously adopted (USACE and CVFPB 2021a, 2021b).

Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site

Project designs will be refined to reduce impacts on vegetation and wildlife to the extent practicable. Refinements implemented to reduce the loss of riparian habitat will include reducing the impact footprint, constructing bank protection rather than launchable rock trench whenever feasible, and designing planting benches. Where practicable, trees will be retained in locations where the bank protection and planting benches is constructed. Trees will be protected in place along the natural channel during rock placement. Additional plantings will be installed on the newly constructed benches to provide habitat for fish and avian species. The planting benches will be used where practicable to minimize impacts on fish and wildlife species. The on-site habitat will be created in accordance with the ARCF GRR Habitat Mitigation, Monitoring, and Adaptive Management Plan, which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.

Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal

USACE will implement the following measures to compensate for riparian habitat degradation:

To compensate for the removal of riparian habitat (up to 3 acres), replacement habitat will 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 will be consistent with the approved list of trees, shrubs, and herbaceous plants native to the Great Valley Mixed Riparian Forest. The replacement habitat will be created in accordance with the ARCF GRR Habitat Mitigation, Monitoring, and Adaptive Management Plan, which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.

After construction has been completed, approximately 3 acres of riparian vegetation will be planted on-site in the planting benches. The remaining compensation for the temporal loss of riparian vegetation and habitat will be off-site and occur at locations protected in perpetuity, and may include purchase of mitigation bank credits. These sites will be selected and designed in coordination with NMFS and USFWS as part of the consultation under the Endangered Species Act.

Mitigation Measure WATERS-1: Compensate for Fill of State and Federally Protected Waters.

Refer to Section 3.3.3 for the full text of this mitigation measure.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Refer to Section 3.2.3 for the full text of this mitigation measure.

Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.

USACE will implement the following avoidance, minimization, and compensation measures.

- For identified designated critical habitat of listed fish species, where feasible, all efforts will be made to compensate for impacts where they have occurred, or elsewhere in the Sacramento or American River Basins. Impacts on designated critical habitat, SRA habitat, and instream components combined, and the compensation value of replacement habitat will be informed by a qualitative assessment of habitat value from an agency-approved model. The amount of mitigation will be assessed by calculating the area of impact below the OHWM combined with the qualitative model assessment.

- USACE will compensate for SRA habitat losses either by constructing off-site compensation sites, purchase of credits at a NMFS-approved conservation bank where appropriate, or by implementing a combination of the two, and by funding a research grant for green sturgeon. USACE will compensate for lost habitat using NMFS-approved mitigation actions at a 1:1

ratio prior to construction, 2:1 ratio during construction, or a 3:1 ratio if mitigation actions occur after construction. SRA habitat compensation sites will be established in coordination with NMFS and USFWS as part of consultation under Section 7 of the Endangered Species Act for the ARCF GRR. On-site created SRA habitat acreage will also be counted toward offsetting lost SRA habitat.

- As described in the Habitat Mitigation, Monitoring, and Adaptive Management Plan, compensation sites will be monitored, and vegetation will be replaced as necessary based on performance standards described in the plan.

Significance after Mitigation

The significant long-term impact to vegetation and wildlife will be reduced to a less-than-significant level with implementation of Mitigation Measures VEG-1, VEG-2, WATERS-1, GEO-1, and SRA-1 because the Project Partners will create replacement habitat, use buffering and avoidance measures, and follow outlined procedures for applicable permits to avoid potential impacts to vegetation and wildlife. However, the compensation habitat is expected to take many years to provide the value of habitat provided by the vegetation expected to be removed. Therefore, the impacts due to short-term habitat loss will remain significant and unavoidable, as specified in the ARCF GRR Final EIS/EIR.

3.5 Fisheries

3.5.1 Environmental and Regulatory Setting

The environmental and regulatory framework described in Section 3.7 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EIR and therefore is not repeated here. Some additional, relevant information is provided below.

Existing Conditions

Native fish species present in the Sacramento River are classified as either anadromous species or resident species. Native anadromous species include four runs of Chinook salmon (*Oncorhynchus tshawytscha*), steelhead trout (*O. mykiss*), green sturgeon (*Acipenser medirostris*), white sturgeon (*A. transmontanus)*, and Pacific lamprey (*Entosphenus tridentatus*). Native resident species include delta smelt (*Hypomesus transpacificus*), Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento splittail (*Pogonichthys macrolepidotus*), Sacramento sucker (*Catostomus occidentalis*), hardhead (*Arius felis*), California roach (*Hesperoleucus symmetricus*), and rainbow trout (*O. mykiss*). Native resident species can be found throughout the study area in various habitats that include but are not limited to, deep pools, riffles, side channels, swift moving cool water, and slow-moving warm water habitats. A list of the species that can be found in the waterways within the study area is included in Section 3.7.1 of the ARCF GRR Final EIS/EIR.

Important attributes of the aquatic habitat within the Sacramento River are aquatic vegetation and SRA habitat. Aquatic habitat is represented by floating, submerged, and emergent vegetation, as well as substrate conditions and benthic habitat. Aquatic vegetation serves as protective cover and an invertebrate food production base for nearly all aquatic species. Aquatic

vegetation, also known as in-water cover, provides a diversity of microhabitats that promotes high species diversity, species abundance, and a nutrient source for instream invertebrates. Instream invertebrates are a required food source for several native fish species.

SRA habitat is represented by overhead canopy cover. Overhanging SRA habitat provides shade coverage important to the survival of many aquatic organisms, including fish. Overhanging vegetation moderates water temperature, a characteristic of high priority for native fish species of all life stages. Vegetation provides food and habitat for terrestrial and aquatic invertebrates as well as several native fish species. Thus, a broad food base, extensive cover, and habitat niches are supported by SRA and IWM. These values in turn create high fish diversity and abundance (USFWS 1992a).

3.5.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project refinements would result in a potentially significant impact to fisheries if they would:

- interfere substantially with the movement of any native resident or migratory fish species or with established native resident or migratory corridors;
- impede the usage of native wildlife nursery sites;
- substantially reduce the habitat of a fish population; and/or
- causes a fish population to drop below self-sustaining levels.

Impact Analysis

Adverse Effects on Fisheries

The proposed project refinements will disrupt native fish during rock placement and erosion protection activities by temporarily increasing local noise and turbidity, causing them to move away from the area that might be providing habitat and cover. As some juvenile species use near shore habitat for cover, the noise and turbidity increases may cause juveniles to move away from shore and into the river channel increasing their predation risk.

The placement of rock riprap below the OHWM will occur during the anadromous fishes and delta smelt activity windows. Project actions may adversely affect winter-run Chinook salmon, CV steelhead, CV spring- and fall-runs Chinook salmon, green sturgeon sDPS, and delta smelt due to: (1) incidental take during construction; (2) fragmentation of existing natural bank habitats due to the placement of revetment; and (3) the potential loss of long-term fluvial functioning necessary for the development and renewal of SRA habitat.

Impacts to delta smelt were calculated according to the 2020 USFWS BO. Effects to delta smelt will result in 13.5 acres of spawning habitat impacts. The planting bench will create

approximately 3 acres of on-site mitigation (SRA habitat). This impact will be significant, with off-site mitigation as required by Mitigation Measures SRA-1 and FISH-1 reducing this impact to less than significant.

Impacts to salmonids and green sturgeon habitat will result in 34 acres of habitat impacts to each species. Mitigation bank credits have been purchased to mitigate impacts to green sturgeon and their habitat. The planting bench will mitigate for approximately 3 acres of impacts to salmonids onsite. This impact would be significant. Implementing Mitigation Measures SRA-1 and FISH-1 would reduce this impact to a less-than-significant level.

The planting bench and IWM will provide additional shade and cover which are material elements of SRA. The irrigation pump system and fish screen to be installed for the planting bench will conform to that outlined in Mitigation Measure FISH-1. See Section 3.4.3 for Mitigation Measure SRA-1 in reference to measures to reduce impacts to SRA habitat.

3.5.3 Mitigation Measures

The following mitigation measure was adopted as Mitigation Measure FISH-1 in the Supplemental EIR for Sacramento River Erosion Contract 1 (USACE and CVFPB 2021a). Mitigation Measure FISH 1 is modified in this Supplemental EIR (as shown in text strikeouts and underlined text) for consistency with the 2021 NMFS BO (NMFS 2021).

Mitigation Measure FISH-1: Implement Measures to Avoid and Minimize Effects on Listed Fish Species.

To avoid and minimize effects on listed fish species, the following measures will be implemented by the Project Partners:

- In-water construction activities (all activities below the OHWM including placement of rock revetment) will be limited to the work window of July 1 through October 31. The in-water work window could be extended to November 15 with NMFS approval. If USACE needs to work outside of this window, it will consult with USFWS and NMFS.

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

- USACE will stockpile construction materials, such as portable equipment, vehicles, and supplies, at designated construction staging areas and barges.

- USACE will stockpile all liquid chemicals and supplies at a designated impermeable membrane fuel and refueling station with a 110% containment system (container with 10% extra capacity).

- USACE will limit site access to the smallest area possible to minimize disturbance.

- USACE will minimize ground and vegetation disturbance during project construction, and clearly mark project limits, including the boundaries of designated equipment staging areas; ingress and egress corridors; stockpile areas for spoils disposal, soil, and materials; and equipment exclusion zones.

- USACE and construction contractors will observe a 20-mile-per-hour speed limit or less within construction areas for all project-related vehicles, except on County roads and on State and Federal highways.

- USACE will secure or remove litter and debris from the project daily. Such materials or waste will be deposited at an appropriate disposal or storage site.

- USACE will immediately (within 24 hours) clean up and report any spills of hazardous materials to the USFWS, NMFS, and California Department of Fish and Wildlife (CDFW). Any such spills, and the success of the efforts to clean them up, shall also be reported in post-construction compliance reports.

- USACE will screen any water pump intakes prior to project activities, such as irrigation or dewatering, to maintain an approach velocity of 0.2 feet per second or less when working in areas that may support Federally listed fish species.

- USACE will 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, Sacramento River Erosion Contract 2~~1, RM 55.2L~~.

- USACE will 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.

- USACE will 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.

- USACE will implement a 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. 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 USACE for 10 years after construction. USACE will 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.

- USACE will 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.

- USACE will seek to avoid and minimize adverse construction effects on listed species and their critical habitat to the extent feasible and will 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 where they have occurred or in close proximity. USACE will develop and implement a compensatory mitigation accounting plan and associated monitoring and adaptive management plans for on-site mitigation efforts. ~~To ensure the tracking of compensatory measures associated with implementation of the proposed project.~~ Monitoring for the establishment of riparian tree and shrub species within shaded riparian aquatic habitat is expected to last approximately 5 to 8 years, not to exceed 10 years. Establishment success will be based on criteria determined on a site-by-site basis with NMFS. Once the monitoring period is complete, all vegetation maintenance and monitoring will transfer and be the responsibility of the non-Federal sponsor and local maintaining agency. USACE will continue to coordinate with NMFS during all phases of construction, implementation, and monitoring by hosting meetings and issuing annual reports throughout the construction period.

- USACE will minimize the removal of existing riparian vegetation and IWM to the maximum extent practicable. Where appropriate, removed IWM will be anchored back into place, or if not feasible, new IWM will be anchored in place.

- USACE will minimize the removal of existing vegetation during project-related activities. If needed, removed or disturbed vegetation will be replaced with native riparian vegetation. USACE will also 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.

- USACE will provide a copy of the BOs, 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 BOs. A notification that contractors have been supplied with this information will be provided to NMFS. A NMFS-approved Worker Environmental Awareness Training Program for construction personnel will be conducted by the NMFS-approved biologist for all construction workers before initiating construction activities. The program will provide workers with information on their responsibilities with regard to Federally listed fish, their critical habitat, an overview of the life-history of all the species, information on take prohibitions, protections afforded these animals under the Endangered Species Act (ESA), and an explanation of the relevant terms and conditions of

the issued BO. Written documentation of the training will be submitted to NMFS within 30 days of the completion of training.

- USACE will designate a NMFS-approved biologist as the point-of-contact for any contractor who might incidentally take a living, or find a dead, injured, or entrapped threatened or endangered species. This representative will be identified to the employees and contractors during all employee education programs. If lethal take is to occur on any ESA-listed species, USACE and NMFS will be contacted immediately.

- USACE will avoid adverse effects from nighttime construction activities. USACE will use the minimal amount of lighting necessary to safely and effectively illuminate the work areas. USACE will shield and focus lights on work areas and away from the water surface (e.g., Sacramento River), to the maximum extent practicable.

- USACE will conduct acoustic fish monitoring at ARCF sites pre-construction, during construction, and post-construction. For erosion prevention features along the Sacramento River, USACE will conduct telemetry monitoring of green sturgeon for 3 years post-construction. Acoustic telemetry will occur in the ARCF action area and would involve staff monitoring of the real-time telemetry data available online.

- USACE will continue to implement a benthic substrate sampling monitoring program to coincide with the need for the Green Sturgeon Habitat Mitigation and Monitoring Plan. Substrate sampling that will occur in the ARCF action area will include pre-construction, during construction, and post-construction sampling within construction-impacted areas.

- USACE will identify all habitats containing, or with a substantial possibility of containing, listed terrestrial, wetland, aquatic, and/or plant species in the potentially affected project areas. The project will minimize effects by modifying engineering design to avoid potential effects.

- ~~USACE will 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~~USACE will install IWM on a case-by-case basis where it is compatible with erosion protection measures being installed to provide a portion of the on- site mitigation for lost SRA from the project. The purpose of IWM is to enhance the structural diversity of the shoreline, with woody material being a component of SRA, and ultimately to maximize the refugia and rearing habitats for juvenile fish.

- USACE will protect in place all riparian vegetation on the lower waterside slope of any levee, unless removal is specifically approved by NMFS, following completion of project construction.

Mitigation Measure GEO-1: Acquire Appropriate Regulatory Permits and Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices.

Refer to Section 3.2.3 for the full text of this mitigation measure.

Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.

Refer to Section 3.4.3 for the full text of this mitigation measure.

Significance after Mitigation

Implementing Mitigation Measures FISH-1, GEO-1 and SRA-1 will reduce fisheries impacts to a less-than-significant level by limiting in-water work, requiring replacement of SRA and riparian habitat; and actively involving NMFS in numerous additional measures.

3.6 Special-Status Species

3.6.1 Environmental and Regulatory Setting

The environmental and regulatory framework described in Section 3.8 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EIR and therefore is not repeated here. Some additional, relevant information is provided below.

Existing Conditions

Special-status species evaluated for potential to occur in the study area for the proposed project refinements were identified based on review of current USFWS species lists (USFWS 2021a) (see Appendix B-2), resource databases and other information available from NMFS (NMFS 2021), California Natural Diversity Database (CNDDB) occurrences (CDFW 2021), and the California Native Plant Society (CNPS) online inventory (CNPS 2021). Additional species addressed in the environmental analysis for projects in the vicinity or in local or State conservation planning efforts were also considered (SRCSD 2014). USACE has reinitiated consultation on the ARCF project, including the Sacramento River Erosion Contract 2 activities, under ESA Section 7. USFWS has recently issued an amended BO for the ARCF project (USFWS 2021b).

A protocol-level special-status plant survey was conducted in the study area in August 2016. One special-status species, woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*), was observed during the survey along the Sacramento River east levee. A total of five individuals of wooly rose-mallow were observed at two locations along the river shoreline (see habitat and land cover figures in Appendix B-1), but these are not located within the project site for the proposed project refinements.

Focused surveys of elderberry shrubs were conducted in 2017 and 2020 to evaluate potential impacts of the proposed project on VELB. Approximately seven elderberry shrubs are present in the project site for the proposed project refinements; however, all elderberry shrubs will be avoided during project implementation. No additional protocol-level special-status wildlife surveys have been conducted.

Listed fish species with potential to occur within the study area are described in Section 3.5, “Fisheries.” Special-status terrestrial species with potential to occur within the study area,

and described in this section, that have the potential to occur in or adjacent to the project site include:

- valley elderberry longhorn beetle; Federal Threatened (FT)
- western yellow-billed cuckoo (*Coccyzus americanus occidentalis*); FT; State Endangered (SE)
- Swainson's hawk (*Buteo swainsoni*); State Threatened (ST)
- white-tailed kite (*Elanus leucurus*); State Fully Protected (SFP)
- purple martin (*Progne subis*); Species of special concern (SSC)
- western pond turtle (*Actinemys marmorata*); (SSC)
- Sanford's arrowhead (*Sagittaria sanfordii*); California Rare Plant Rank (CRPR) 1B.2
- woolly rose-mallow; CRPR 1B.2
- bat species protected by the California Fish and Game Code

3.6.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project refinements would result in a potentially significant impact to special-status species if they would:

- Have a 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 State ESA;
- Have a 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;
- Result in a 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 CNPS, or species of special concern or regionally important commercial or game species; or
- Have an adverse effect on a species' designated critical habitat.

Impact Analysis

Construction Effects on Special-Status Species

Valley Elderberry Longhorn Beetle (VELB)

Focused surveys of elderberry shrubs were conducted in 2017 and 2020 to evaluate potential impacts of the proposed project refinements from Sacramento River Erosion Contract 2 on VELB. Approximately seven elderberry shrubs are present in the project site; however all elderberry shrubs will be avoided during project implementation. Therefore, no mitigation is required. However, elderberry shrubs are fast-growing, and if elderberry shrubs must be removed, mitigation will be accomplished as described in VELB-1.

Other Special-Status Bird Species (Western Yellow-Billed Cuckoo, Swainson's Hawk, White-Tailed Kite, and Purple Martin)

Trees along the Sacramento River east levee and adjacent narrow riparian corridor along the river support a number of active nest sites of Swainson's hawk. This corridor also provides suitable nesting and/or foraging habitat for other special-status birds, such as western yellow-billed cuckoo, white-tailed kite, and purple martin. Nesting habitat for Swainson's hawk, white-tailed kite, and purple martin occurs throughout the study area for the proposed project refinements. The study area is outside the nesting range of yellow-billed cuckoo, but transient individuals could use the area during migration. The 2021 USFWS BO concluded that construction activities along the Sacramento River have the potential to adversely affect individual western yellow-billed cuckoos due to project noise (USFWS 2021).

Suitable habitat is primarily at and adjacent to the bank protection and waterside staging areas. Tree removal to accommodate construction of bank protection and planting benches, and staging area use, discussed in Section 3.4, "Vegetation and Wildlife," will reduce the amount of habitat available to these species and could destroy active nests, resulting in loss of eggs and young. In addition, noise and visual disturbance from construction activities could disturb nearby active nests, potentially resulting in nest failure. Implementing Mitigation Measure BIRD-1, VEG-1, VEG-2, and SRA-1 will reduce potentially significant effects on special-status and other migratory birds to a less-than-significant level by minimizing removal of vegetation with active nests, implementing protective buffers around active nests, monitoring to ensure that birds and their young are not adversely affected by project activities, and replacing or compensating for riparian habitat removal.

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 of bank protection areas could affect basking turtles along the waterside, or turtles could also be crushed or entombed if construction equipment causes burrows to collapse. This would be a potentially significant impact. Implementing Mitigation Measure TURTLE-1 will reduce potentially significant effects on western pond turtles by requiring surveys and avoidance measures to avoid harm to individual turtles.

Special-Status Bats

Several species of bat are identified by CDFW as species of special concern. In addition, all bat species are protected as non-game mammals under the California Fish and Game Code. Mature trees that may provide suitable roost cavities for pallid bat (*Antrozous pallidus*) and other trees with suitable foliage for roosting by western red bat (*Lasiurus blossevillii*) occur in and adjacent to staging areas and levee improvement areas. Mature valley oak trees within the project site may provide high-quality pallid bat roosting habitat. Although the likelihood is relatively low, it is possible this habitat would support a maternity colony; removal of a maternity colony could result in loss of a large number of individuals of special-status bats, potentially having a substantial adverse impact on the local population. Implementing Mitigation Measure BAT-1 will reduce potentially significant effects on roosting special-status bats to a less-than-significant level by implementing appropriate buffers around active roosts that could be affected by project refinement activities.

Special-Status Plants

No special-status plants were located within the project site according to surveys conducted in 2016. However, due to the age of the surveys and the potential for changed conditions between 2016 and the start of vegetation removal in late 2023 or construction in 2024, impacts to special-status plants would be potentially significant. Mitigation Measure PLANT-1 would reduce this impact to a less-than significant level by requiring pre-construction surveys, avoidance, and buffers.

3.6.3 Mitigation Measures

The following mitigation measures have been previously adopted (USACE and CVFPB 2021b).

Mitigation Measure VELB-1: Implement Current USFWS Avoidance, Minimization, and Compensation Measures for Valley Elderberry Longhorn Beetle.

The Project Partners would implement the following measures in accordance with the Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (USFWS 2017) to reduce effects on valley elderberry longhorn beetle:

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

- Avoidance area. To the extent feasible, activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) would be avoided within 20 feet from the drip-line of the shrub.

- Worker education. A qualified biologist would provide training for all contractors, work crews, and any onsite personnel on the status of valley elderberry longhorn beetle, its host plant and habitat, the need to avoid damaging elderberry shrubs, and the possible penalties for noncompliance.

- Construction monitoring. A qualified biologist would monitor the work area at appropriate intervals to assure that all avoidance and minimization measures are implemented

- Timing. To the extent feasible, activities within 165 feet of an elderberry shrub would be conducted outside of the valley elderberry longhorn beetle flight season (March to July).

- Trimming. To the extent feasible, elderberry shrub trimming would occur between November and February and avoid the removal of any branches or stems greater than or equal to 1-inch in diameter.

- Chemical Usage. Herbicides would not be used within the drip-line, and insecticides would not be used within 100 feet of an elderberry shrub. All chemicals would be applied using a backpack sprayer or similar direct application method.

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

- Transplanting. To the extent feasible, 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. Exit-hole surveys will be completed immediately before transplanting. 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.

- Compensation. Effects would be compensated at ratios ranging from 1:1 to 3:1, depending on the compensation approach and circumstances of the affected shrubs. Affected area would be re- vegetated with appropriate native plants.

Mitigation Measure BIRD-1: Implement Measures to Protect Nesting Special-Status and Migratory Birds

The Project Partners would implement the following measures to minimize potential effects on active nests of Swainson's hawk, white-tailed kite, purple martin, and other migratory birds:

- Before on-site project activities begin, all construction personnel would participate in a worker environmental awareness program. A qualified biologist would inform all construction personnel about the life history of Swainson's hawk and the importance of nest sites.

- For Swainson's hawk, follow the survey guidelines for the Swainson's Hawk Technical Advisory Committee 2000. If active nests are found within 0.5 miles of construction activities, consult with CDFW on further action including buffer areas, mitigation, and monitoring.

- For purple martin and white-tailed kite, a survey would also be conducted for active nests within 500 feet of construction activities. For all other migratory birds, the survey would

cover active nests within 100 feet of construction activities. These surveys could be conducted concurrent with Swainson's hawk surveys, so long as one survey is conducted no more than 48 hours from the initiation of project activities. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removing or pruning trees and shrubs, the project can commence.

- For any active migratory bird nest found, a protective buffer would be established and implemented until the nest is no longer active. The size of the buffer would be determined based on the species, nest stage, type, and intensity of project disturbance in the nest vicinity, presence of visual buffers, and other variables that may affect susceptibility of the nest to disturbance. A qualified biologist would monitor the nest during project activities to confirm effectiveness of the buffer and adjust the buffer as needed to ensure project activities do not adversely affect behavior of adults or young. Buffers would be marked in the field by a qualified biologist using high visibility flagging tape or other means that are effective in clearly delineating the buffers.

- Tree and shrub removal and other clearing, grading, and construction activities that remove vegetation would not be conducted during the nesting season (generally February 15 to September 30, depending on the species and environmental conditions for any given year). If construction activities that require tree and shrub removal occur during the nesting season, the Project Partners will implement surveys as described in this measure. If active nests are encountered, protective buffers would be implemented as described. .

Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site

Refer to Section 3.4.3 for the full text of this mitigation measure.

Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal

Refer to Section 3.4.3 for the full text of this mitigation measure.

Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat.

Refer to Section 3.4.3 for the full text of this mitigation measure.

Mitigation Measure TURTLE-1: Implement Measures to Protect Western Pond Turtle

The Project Partners will implement the following measures, to avoid and minimize effects on western pond turtle:

- A qualified biologist would conduct a pre-construction survey within 24 hours before the start of project activities. If no western pond turtles are observed, USACE would document that information for the file, and no additional measures would be required.

- If western pond turtles are observed on land within the construction footprint during project activities, USACE 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 would contact CDFW to determine the appropriate next steps.

Mitigation Measure BAT-1: Implement Measures to Protect Maternity Roosts of Special- Status Bats

The Project Partners will implement the following measures, to avoid and minimize effects on special-status bats:

- Wherever feasible, USACE will conduct construction activities outside of the pupping season for bats (generally April 1 to August 31).
- USACE or its designated environmental personnel will specify which trees slated for removal contain suitable bat roosting habitat. Trees indicated for removal that are not identified as suitable bat habitat can be removed using normal methods.
- When possible, removal of trees identified as providing suitable roosting habitat should be conducted during seasonal periods of bat activity when evening temperatures are above 45 degrees Fahrenheit and/or no more than ½ inch of rainfall within 24 hours occurs.
- Live trees that are indicated to contain roosting habitat shall be removed in a two-phase process. The first day, under the supervision of the biological monitor, remove limbs and branches that do not contain cavities, cracks, crevices, or deep bark fissures that can provide roosting habitat. On the second day remove the remainder of tree by gently lowering the tree to the ground, under the supervision of the biological monitor and leave material undisturbed for 48-hours. If it is not feasible to remove a tree using the two-phased approach, limbs containing habitat features should be removed and gently lowered to the ground in a location where they are not likely to be crushed or disturbed by the felling of the tree and left undisturbed for the next 48-hours.
- Standing dead trees or snags with habitat features should be removed over a single day by gently lowering the tree or snag to the ground. The tree or snag should be left undisturbed on the site for the next 48-hours.
- For trees containing suitable bat roosting habitat that will be trimmed, trimming shall be conducted in the presence of a biological monitor. If 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, if feasible. If the vegetation cannot be left for 48-hours, the biological monitor shall survey the vegetation for presence of bats. If any bats are found within the vegetation, the vegetation must be left for 48-hours (or CDFW should be called for guidance regarding relocation of the bat dependent on urgency for removal).

- If removal of trees must occur during the bat pupping season, within 30 days of tree removal activities, all trees to be removed will be surveyed by a qualified biological monitor 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 the designated biological monitor in trees designated for removal. The surveys shall be conducted from dusk until dark.

- If any special-status species bat maternity roost is located, appropriate buffers must be established by clearly marking the buffer area. The buffer area must be a minimum of 100 feet outside the tree containing the maternity roost. No contract activities shall commence within the buffer areas until the end of pupping season (September 1st) or the biological monitor confirms that the maternity roost is no longer active.

- If construction activities must occur within the buffer, the biological monitor must monitor activities either continuously or periodically during the work, which will be determined by the biological monitor. The biological monitor would be empowered to stop activities that, in their opinion, would cause unanticipated adverse effects on specials status bats. If construction activities are stopped, the biological monitor would inform USACE, and CDFW would be consulted to determine appropriate measures to implement to avoid adverse effects.

Mitigation Measure PLANT-1: Implement Measures to Protect Special-status Plants

The Project Partners will implement the following measures, to avoid and minimize effects on special-status plants:

- Preconstruction surveys will be conducted by a qualified botanist in suitable habitat to determine the presence of any special status plants. Surveys will be conducted at an appropriate time of year during which the species are likely to be detected, which would likely be during the blooming period.

- If special status plant species are found during preconstruction surveys, the habitat will be marked or fenced as an avoidance area during construction. A buffer of 25 feet will be established. If a buffer of 25 feet is not possible, the next maximum possible distance will be fenced off as a buffer.

- If special status plant species cannot be avoided during construction, the Corps will coordinate with the resource agencies to determine additional appropriate mitigation measures.

Significance after Mitigation

The significant construction impact to special-status species will be reduced to a less-than-significant level with implementation of Mitigation Measures BIRD-1, VEG-1, VEG-2, SRA-1, TURTLE-1 BAT-1, and PLANT-1 because the Project Partners will conduct surveys and use buffering and avoidance measures to avoid potential impacts to these species.

3.7 Cultural and Tribal Cultural Resources

3.7.1 Environmental and Regulatory Setting

The environmental and regulatory framework described in Section 3.9 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EIR and therefore is not repeated here. Some additional, relevant information is provided below.

The area in which cultural resources are identified and in which potential effects on historic properties (those cultural resources determined to be eligible for listing on the National Register of Historic Places [NRHP] or California Register of Historic Resources [CRHR]) are analyzed is called the project boundary. The project boundary for the Sacramento River Erosion Contract 2 includes the project footprint (the area where any ground-disturbance will occur), such as bank excavation, rip-rap placement, and staging areas. This also includes the area in which built-environment resources could be affected physically, including through vibration. No permanent substantial visual or auditory changes will occur from project implementation; 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 boundary is variable but has the potential to include subsurface cultural resources.

The project boundary for the Sacramento River Erosion Contract 2 contains numerous remains of past human activity ranging from Native American sites to flood control structures and may contain Native American human interments. Such materials can be found at many locations on the landscape. USACE has consulted with the State Historic Preservation Officer (SHPO) and other parties and as a result has executed a Programmatic Agreement (PA). The PA establishes the process USACE shall follow for compliance with Section 106 of the National Historic Preservation Act (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 boundaries; 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 will be adversely affected; a process to guide limited geotechnical investigations; Native American consultation procedures; and other processes and implementation procedures. The term “historic property” refers to any cultural resource that has been found eligible for listing, or is listed, in the NRHP. The term “historical resource” refers to any cultural resource that has been found eligible for listing, or is listed, in the CRHR.

Native American Consultation

Native American Consultation Conducted by USACE

USACE is the lead Federal agency responsible for compliance with Section 106 of the NHPA and has conducted all consultations with Native American Tribes and interested parties according to the PA and HPMP developed for the ARCF 2016 Project. Several Native American Tribes and interested parties were contacted during development of the PA and provided with general information about the ARCF 2016 Project. Consultations specifically related to the Sacramento River Erosion Contract 2 and its refinements are a continuation of the ongoing process.

Native American Tribes identified in the PA have been contacted and provided a description of Sacramento River Erosion Contract 2. Letters describing Contract 2 and containing maps of the project boundary were mailed to consulting Native American Tribes on November 8, 2021.

Native American consultation conducted by USACE is on-going, including discussions with the United Auburn Indian Community (UAIC) regarding best practices during construction and monitoring arrangements.

Native American Consultation Conducted by Sacramento Area Flood Control Agency

SAFCA also has consulted with local Native American Tribes as part of CEQA compliance related to Sacramento River east levee improvements (SAFCA was the CEQA lead agency in 2015). In March 2015, SAFCA conducted a tour of portions of the Sacramento River east levee for the interested tribes. Native American representatives who attended the tour included Marcos Guerrero (UAIC), Kyle Dutschke (Ione Band of Miwok Indians), Melissa Baring (Ione Band of Miwok Indians), Antonio Ruiz, Jr. (Wilton Rancheria), Kara Perry (Shingle Springs Band of Miwok Indians), and Daniel Fonseca (Shingle Springs Band of Miwok Indians).

UAIC has provided SAFCA and USACE with a sensitivity map of the ARCF 2016 project site which illustrated general areas that the Tribe feels are sensitive for Native American resources, such as cultural landscapes.

On August 28, 2015, SAFCA conducted a field review of SAFCA's Sacramento River east levee project footprint with representatives of UAIC, USACE, and contracted archaeologists. In October 2015, SAFCA conducted a follow-up field review of selected portions of the Sacramento River east levee project footprint with representatives of UAIC and contracted archaeologists.

Native American Consultation under CEQA

In September 2015, the Native American Heritage Commission (NAHC) sent an updated list of Native American contacts for SAFCA's Sacramento River east levee project boundary and also the updated results of a search of their Sacred Lands File. The NAHC indicated that no sacred sites were identified as a result of their Sacred Lands File search, although UAIC has indicated that records of sacred sites have been sent to the NAHC. However, following the discovery of human remains on the ground surface during a surface inspection of the project boundary by representatives of UAIC on May 25, 2016, the NAHC designated UAIC as the Most Likely Descendant (MLD) for the project.

UAIC has continued to consult with SAFCA and its consultant. UAIC has identified three locations as culturally sensitive areas within the project boundary. These resources are described below under, "Identified Cultural Resources."

CVFPB, as the CEQA lead agency, is continuing to conduct consultation with culturally affiliated Native American Tribes under the California Natural Resource Agency Tribal Coordination Policy. 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. CVFPB has adopted this Policy. As such, Native American consultation will be conducted in accordance with the Policy adopted by CVFPB. The purpose of the Policy is to ensure effective, meaningful, and mutually beneficial government-to-government consultation, communication, and coordination between CVFPB and tribal entities relative to activities under CVFPB's jurisdiction that may affect tribal communities. CVFPB will contact the Native American contacts, including those already identified by the NAHC, to identify cultural resources important to Native Americans, including TCRs as defined in California Public Resources Code 21074, which may be present in the project area.

Identified Cultural Resources

Based on the results of the records search and archival research, archaeological and Native American surveys, Native American consultation, and geoarchaeological excavation, the following archaeological resources have been reported within the APE for the Sacramento River Erosion Contract 2.

Archaeological Resources

Three archaeological resources are in the Sacramento River Erosion Contract 2 project boundary: P-34-000055/CA-SAC-28; P-34-000619/CA-SAC-505H; and P-34-005379/CA-SAC-1276.

CA-SAC-28

Site CA-SAC-28 is a pre-contact habitation site originally measuring approximately 300-feet in diameter. The site contained lithic scatters, habitation debris, including mortars and pestles, and burials with associated artifacts.

The site was originally recorded in 1934 but was then covered over in the 1940s and 1950s by levee and Interstate-5 construction. The site was supplementarily recorded in 1990 by Bouey (see Table 2-1) who found "nothing apparent on the surface" and added that the original site placement may have been erroneous; Bouey noted two alternate locations. Bouey also noted that by 1955, the site was buried under 30 feet of dredged sand and was likely destroyed. The site was recently revisited by Curry et al. (2018). That survey found "no cultural material in the vicinity of the two recorded locations of the resource". It is unlikely that this site can be recovered or evaluated further as it is considered destroyed.

CA-SAC-505H

Site CA-SAC-505H is a 300-feet long abandoned railroad grade composed of historic dump fill, which is visible in the exposed eastern slope of the grade. The fill consists of soil with 19th and 20th century glass and ceramic artifacts, marine shell, metal artifacts, cut bone, and brick. The area has been subjected to pothunting. The railroad grade is the remains of a spur of the Walnut Grove Branch Line SPRR which extends from Old Sacramento south to Isleton. The railroad was constructed in 1908. Between 1909 and 1934 the railroad ran freight and passenger traffic. In 1934 the railroad only carried freight. Service ended in 1978. In 2000, Hogan

described the site as a secondary deposit identified in fill overlying a buried utility line. Davis and Roark (2001) evaluated CA-SAC-505H and recommended the site as a contributing element of the Walnut Grove Branch Line SPRR, which has been recommended eligible for NRHP listing (see discussion below) and thus potentially CRHR listing.

CA-SAC-505H is not considered eligible for listing in the NRHP (and thus CRHR listing), as it lacks integrity of location (having been moved to its present location). Additionally, CA-SAC-505H is not a contributing element to the eligibility of the Walnut Grove Branch Line SPRR (P-34-001497/CA-SAC-1092; see below). The railroad nomination found significance under criterion A (CRHR criterion 1) for the role of the railroad in local agriculture and industry, and for its role in the founding of the town of Locke. Significance was also noted on criterion C (CRHR criterion 3) for the construction technique, involving dredging and placement on an elevated levee. However, the fill material used to create the levee is not referenced. As such, the content of the fill is not a contributing factor to the eligibility of this resource.

CA-SAC-1276

Site CA-SAC-1276 was identified in a soil sample taken during geotechnical drilling in support of levee improvements along the Sacramento River East Levee. The soil sample was taken using a sonic bore technique. The bore sample measured approximately 4 inches in diameter and 5 feet in length. The sample was taken from 15 to 20 feet below the surface of the levee crown. The site consists of two, 4-inch-thick midden layers at 17.5 and 20 feet below the surface of the levee crown, with cultural items identified consisting of faunal bone, charcoal, fragmented bits of freshwater shell, and possible fire affected rock. No midden was identified in the next core sample from 20 to 25 feet below the levee crown.

Given the nature of discovery, there is little to say regarding this archaeological site, which consisted of two layers of midden, well below the levee crown but relatively shallow compared to the modern ground surface. Likewise, constraints caused by the levee and residential development make any testing of the site infeasible. The area is located at the western end of a UAIC identified sensitive area and near where Far Western Anthropological Research Group, Inc. conducted geoarchaeological testing in 2016, with negative results. It is possible that CA-SAC-1276 represents the remnants of a once more substantial archaeological site, perhaps even a mound, but it has likely been greatly impacted by levee construction and modern residential development. With no further testing feasible, the resource must be considered eligible for listing in the CRHR for purposes of the project.

Native American-Identified Sensitive Locations

During consultation, UAIC provided a confidential map illustrating areas of concern, which include portions of the project boundary for the Sacramento River Erosion Contract 2. These areas of concern were not characterized as archaeological sites, but rather as areas identified by UAIC with an elevated sensitivity for the presence of resources important to the Tribe. UAIC has identified three areas within or encompassing portions of the Sacramento River Erosion Contract 2 project boundary that the Tribe considers to be sensitive. The UAIC-identified sensitive areas contain one known/recorded pre-contact archaeological site (CA-SAC-42) and could potentially encompass additional unknown buried resources. The UAIC-identified

areas are confidential. Native American consultation is ongoing, in accordance with the requirements of the PA. These locations have not been evaluated for NRHP or CRHR eligibility due to a lack of information about the nature of the resources.

Tribal Cultural Resources

One Traditional Cultural Landscape (TCL) was identified that includes the entire project boundary as well as the broader landscape surrounding the Sacramento River: P-34-005225/Sacramento River TCL. The Sacramento River TCL encompasses both banks of the lower Sacramento River from just south of Knights Landing in Sutter and Yolo counties in the north to Sherman Island in the Delta in the south. The character-defining elements of this landscape, according to the site record form, are the waterways, tule habitat, fisheries, and other wildlife. This site has previously been recommended to be eligible for listing on the NRHP, and thus potentially the CRHR; however, the identified resource attributes of this site consist entirely of natural resources such as waterways and natural habitat. Formal evaluation of this resource is beyond the scope of the current phase, so for the purpose of this analysis it is considered eligible for the CRHR.

Built-Environment Resources

Five historic-era (more than 45 years old) built-environment resources are located in the Sacramento River Erosion Contract 2 project boundary: Walnut Grove Branch Line of SPRR (P-34-001497/CA-SAC-1092); SREL Levee Unit 115 (P-34-002143); the Pocket Canal; Sump 119-1 (P-34-004261); and US 160 (P-34-004464).

Walnut Grove Branch Line of SPRR

A segment of the Walnut Grove Branch Line of the SPRR is in the project boundary. The railroad alignment was constructed between 1908 and 1912. The line was evaluated for NRHP eligibility in 1991and recommended as eligible at the local level of significance under criterion A (CRHR criterion 1) for its association with the development of agriculture in the Delta region and local Delta communities. It was also recommended eligible under criterion C (CRHR criterion 3), as embodying distinctive characteristics of the methods employed in dredging and levee construction during a short timeframe (PAR 1992). In 1991, the SHPO concurred with the finding. The historic property was assigned a California Historical Resources Status Code (Status Code) of 2S2 (Individual Property Determined Eligible for NRHP by a Consensus Through Section 106; Listed in the California Register of Historical Resources [CRHR]). In subsequent years, portions of the railroad were revisited and reassessed as part of the Section 106 process. In 2006, as part of a Reclamation undertaking, the railroad was recommended as being eligible under NRHP criterion A (CRHR criterion 1) and criterion C (CRHR criterion 3). SHPO concurred with Reclamation’s findings (OHP 2022).

Sacramento River East Levee (Levee Unit 115)

Levee Unit 115 is approximately 10 miles long, beginning just south of Sutterville Road. The waterside slope of this earthen levee is covered by vegetation, including mature trees and some riprap. The landslide slope is also covered by vegetation. Fences, steps, pipes, and portions

of residential parcels occur on the levee or have been built to the levee toe. The levee crown is approximately 20 feet wide. The material on the crown varies and includes gravel and steel railroad tracks.

As part of the 2020 ARCF Project SREL Contract 1 (COE120203C), Levee Unit 115 was inventoried and evaluated as eligible for listing in the NRHP under criterion A (CRHR criterion 1) at the national level of significance, as a contributor to a larger district within the context of flood management, one of the four major themes for built environment resources identified in the HPMP (GEI 2017:6-25). The period of significance begins in 1917, the year the U.S. Congress approved the flood control act, marking the first comprehensive plan for flood management in California. The period of significance ends in 1968, a 50-year cutoff date, as allowed in the HPMP (GEI 2017:6-28). In November 2019, the SHPO concurred with the findings that Levee Unit 115 is eligible for the NRHP (Polanco 2019).This makes it also eligible for the CRHR.

Sacramento River East Levee (Levee Unit 117)

As part of the 2018 ARCF Project Reach D Seepage Berm Project (COE120203C), Levee Unit 117 (Tower Bridge to Sutterville Road) was inventoried and evaluated as eligible for listing in the NRHP under Criterion A at the national level of significance. It was determined eligible as a contributor to a larger district within the context of flood risk management, one of the four major themes for built environment resources identified in the HPMP (GEI 2017:6-25). The period of significance begins in 1917, the year the U.S. Congress approved the flood control act, marking the first comprehensive plan for flood management in California. The period of significance ends in 1968, a 50-year cutoff date, as allowed in the HPMP (GEI 2017:6-28). In December 2018, the SHPO concurred with findings that Levee Unit 117 is eligible for listing in the NRHP (Polanco 2018:3).

Pocket Canal

Located at the southern end of the project boundary between Pocket Road and the Sacramento River east levee is a portion of the Sump 132 Pocket Drainage Canal, a larger drainage canal that is approximately 2.10 miles long. The approximately 382 feet located in the project boundary, is partially lined with concrete on both sides and the remaining portion is earthen. The crown of the canal is topped with gravel and is used as a service and maintenance access road. The canal was full at the time of survey so the depth of the canal could not be ascertained. The canal terminates at a pump and gates which are concrete and steel. A rectangular shaped building sits on top of the gates. The building appears to be less than 45 years old and therefore is not described any further. The pocket canal was evaluated and recommended to be ineligible for listing on the NRHP in 2019 (GEI 2019). The SHPO concurred with the finding that the Pocket Canal is not eligible for NRHP listing (Polanco 2019). It is thus likely not eligible for CRHR listing.

Sump 119-1

Sump 119-1 is located roughly a quarter mile west of the intersection of Riverside Blvd and 35th Ave. The resource comprises of a row of concrete bents and two dolphin piers that extend into the Sacramento River. The resource is abandoned. Records indicate the piers were

constructed in 1946. The resource originally carried a 30-inch diameter forced sewer outfall, but the line has since been removed (PAR 2010).

Sump 119-1 was previously recorded, but there is no evidence it was evaluated for NRHP significance. It was inventoried and evaluated for the purposes of this project. Sump 119-1 does not appear to meet NRHP criteria. Under criterion A (CRHR criterion 1), the resource provides a valuable role as part of the infrastructure of Sacramento in the mid-20th century. The resource was eventually abandoned as the city's infrastructure modernized over the years. There is no evidence it is directly associated with significance events or individuals important to the region, thus it does not appear to meet NRHP criterion A (CRHR criterion 1) or B (CRHR criterion 2). As a utilitarian structure, the sump does not exhibit unique design or construction methods and does not appear to meet NRHP criterion C (CRHR criterion 3). Under NRHP criterion D (CRHR criterion 4), it does not appear to be the sole source for information important to history. The resource is also in poor condition and has been abandoned and thus no longer adequately conveys any historical significance. In summary, Sump 119-1 does not appear to meet either the NRHP or CRHR criteria because of a lack of historical significance.

US 160

US 160, also identified as DO40/M 156/C0086, is an underwater object located in 10 feet of water on the east bank of the Sacramento River. It was recorded in 2009 through a remote sensing survey and described as having vessel-like characteristics and linear and structural form. It measures 58 feet in length and 20 feet in width. It is associated with magnetic anomaly M156, a dipole (Panamerican Consultants, Inc. 2009).

Records convey little information about US 160. The resource's physical appearance suggests it may be associated with a historic-era submerged vessel; however, it was not evident that it is listed in the California State Lands Commission Shipwreck Database (California State Lands Commission 2022). The Sacramento River contains numerous submerged features such as remnants of landings, pilings, and submerged vessels. US 160 does not appear to be significant for either the NRHP or CRHR. As a submerged resource, it is not known to be associated with significant events or people that are important to Sacramento, or the region, overall. The resources have been submerged underwater for decades and does not outwardly display physical characteristics of a unique design or building method. Finally, under criterion D (CRHR criterion 4), US 160 does not appear to be the sole source for information important to history. In summary, US 160 does not appear to meet either NRHP or CRHR criteria.

3.7.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project refinements would result in a potentially significant impact to cultural and tribal cultural resources if they would:

- 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; or

- 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, effects to a historic resource or unique archeological resource are considered to be significant if they:

- Materially impair the significance of a historic resource or unique archeological resource, or

- Require the demolition of a historic resource.

Two additional significance thresholds not included in the ARCF GRR Final EIS/EIR are considered in this analysis. The project was determined to result in a potentially significant effect under CEQA 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.

Methodology

For those resources recommended to be eligible for listing in the NRHP/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 project refinements. In making a determination of the effects to Historic Properties, consideration was given to:

- Specific changes in the characteristics of Historic Properties in the project boundary,

- The temporary or permanent nature of changes to Historic Resources and the visual area around the Historic Resources, and

- The existing aspects of integrity that are retained by Historic Resources in the project boundary and how those aspects relate to the specific significant characteristics that make a Historic Resources eligible for listing in the NRHP/CRHR.

An assessment of effects for the purposes of this Supplemental EIR is made only for those resources determined to be eligible or recommended to be eligible for listing in the NRHP/CRHR. Resources that have been determined to be eligible for listing in the CRHR, are listed in the CRHR, or are recommended to be eligible for listing are referred to as historical resources. Resources that have been found or recommended to be ineligible for listing in the

CRHR 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 or CRHR and because an assessment of effects for the purposes of this Supplemental EIR is made only for those resources determined to be eligible for listing in the NRHP/CRHR or that are listed in the NRHP/CRHR, isolated artifacts are not considered to be historical resources 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 Final EIS/EIR was prepared, as described above under "Environmental and Regulatory Setting." The effects analysis considered the following factors related to the Sacramento River Erosion Contract 2: project elements, including construction of levee improvements, staging areas, and potential effect mechanisms; the area that would be temporarily and permanently disturbed; known or potential locations of cultural resources, including locations identified by culturally affiliated Native Americans as cultural landscapes; and Traditional Cultural Properties, sacred sites, or other sensitive resources. In particular, the significance of each affect 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 Final EIS/EIR for potential impacts to cultural resources included implementing stipulations of the ARCF PA. Where feasible, more specific measures (but consistent with the ARCF PA) are identified below to reduce adverse effects. Where there are uncertainties about resource boundaries, eligibility for listing, and project effects, processes for determining boundaries, eligibility, and effects stipulated in the PA and associated HPMP will be implemented.

USACE has not concluded determinations of NRHP eligibility based on consultation with the 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 will be made through consultation between USACE, SHPO, and other Consulting Parties to the PA as appropriate prior to initiating construction of the proposed project, including the Sacramento River Erosion Contract 2 refinements.

Impact Analysis

Damage to or Destruction of Built-Environment Historic Properties

The proposed project refinements will have No Adverse Effect to the Walnut Grove Branch Line of SPRR or the Sacramento River East Levee Unit 115 as it will not affect the integrity of the resources, including aspects of setting, feeling, and association. The Pocket Canal was recommended to be ineligible for the NRHP and CRHR and SHPO concurred in this finding and therefore the Pocket Canal is not considered to be a Historic Property for the purpose of this analysis. Sump 119-1 and US 160 were recommended to be ineligible for the NRHP (and thus the CRHR) and therefore Sump 119-1 and US 160 are not considered to be a Historic Property or Resource for the purpose of this analysis. Site SAC-505H is a 300-feet long abandoned railroad grade composed of historic dump fill. CA-SAC-505H is not considered eligible for listing in the

NRHP or CRHR, as it lacks integrity of location (having been moved to its present location). This impact will be less than significant.

Damage to or Destruction of Known Precontact-Period Archaeological Sites and Tribal Cultural Resources

Erosion counter measures will not include substantial ground excavation. However, even limited earth-moving activities could nevertheless result in damage to or destruction of known pre-contact-period archaeological sites and Native American-identified TCRs. Due to regulatory restrictions on excavation within the levee prism and Native American preference for not conducting archaeological testing within certain locations, the exact boundaries and constituents of known pre-contact-period archaeological sites and Native American-identified TCRs are not fully known.

Site CA-SAC-28 was originally described in 1934 as a pre-contact habitation site originally measuring approximately 300-feet in diameter. The site contained lithic scatters, habitation debris, including mortars and pestles, and burials with associated artifacts. Subsequent investigations could not find evidence of the site and it is believed to have been destroyed. However, if construction activities uncovered evidence of CA-SAC-28, the project could potentially cause a significant impact to the resource. Implementing Mitigation Measures CR 1, CR 2, CR-3, CR-4, and CR-5 will reduce the potential for a significant effect resulting from inadvertent damage to or destruction of archaeological resources to a less-than-significant level, because these measures require that if archaeological resources are discovered prior to or during project-related construction activities, appropriate treatment and protection measures must be implemented.

Site CA-SAC-1276 was identified in a soil sample taken during geotechnical drilling in support of levee improvements along the Sacramento River East Levee. The soil sample was taken using a sonic bore technique. It is possible that CA-SAC-1276 represents the remnants of a once more substantial archaeological site, perhaps even a mound, and is considered eligible for listing in the NRHP or CRHR for purposes of the project. If construction activities uncovered further evidence of CA-SAC-1276, the project could potentially cause a significant impact to the resource. Implementing Mitigation Measure CR 1, CR 2, CR-3, CR-4, and CR-5 will reduce the potential for a significant effect resulting from inadvertent damage to or destruction of archaeological resources to a less-than-significant level, because these measures require that if archaeological resources are discovered prior to or during project-related construction activities, appropriate treatment and protection measures must be implemented.

The Sacramento River TCL is assumed to be eligible for the NRHP and CRHR based on the recommendation included in the original site record form. The only attributes described for this resource are elements of natural environment such as waterways and natural habitats. Because the project refinements will not significantly affect the natural environment composing this resource and is not changing the environment, setting, or integrity of this resource, the Sacramento River TCL will not be adversely affected by the project refinements and no mitigation is required.

Potential Damage to or Destruction of Previously Undiscovered Archaeological Sites or Tribal Cultural Resources

Cultural resources investigations have identified archaeological resources and potential TCRs in the project boundary. Based on available information, other areas in the project boundary are also potentially sensitive for unknown buried archaeological resources and TCRs and there remains the possibility that previously unknown archaeological resources or TCRs could be discovered during project construction and inadvertently damaged. This impact will be significant. Implementing Mitigation Measure CR 2, CR-3, CR-4, and CR-5 will reduce the potential for a significant effect resulting from inadvertent damage to or destruction of presently undocumented archaeological resources and TCRs to a less-than-significant level, because these measures require that if archaeological resources or TCRs are discovered prior to or during project-related construction activities, appropriate treatment and protection measures must be implemented.

Damage to or Destruction of Human Remains during Construction

The project boundary and vicinity are known to contain significant precontact archaeological sites, including sites with human burials. Native American human remains could be encountered during earth-moving activities associated with the proposed project refinements. This is a potentially significant effect. Implementing Mitigation Measure CR-6 will reduce the potential for a significant effect resulting from inadvertent damage to or destruction of presently undocumented human remains to a less-than-significant level because it requires that if human remains are discovered during project-related construction activities, disturbances in the area of the find must be halted and appropriate treatment and protection measures must be implemented, all in consultation with the NAHC, MLD, and landowners, in compliance with California Health and Safety Code Section 7050 et seq. and PRC Section 5097.9 et seq.

3.7.3 Mitigation Measures

The following mitigation measure has been previously adopted (USACE and CVFPB 2021b).

Mitigation Measure CR-1: Resolve Adverse Effects through Programmatic Agreement and Historic Properties Treatment Plan (HPTP).

For Historic Properties which will be adversely affected by implementation of the project (pending concurrence of eligibility and finding of effect in the ARCF PA consultation process), USACE shall consult with the SHPO and interested Native American Tribes in accordance with the ARCF PA and associated HPMP to develop a HPTP. The HPTP shall specify measures that will be implemented to resolve the adverse effects to the Historic Properties and shall constitute mitigation for the effects to these resources. USACE shall implement the terms described in the HPTP.

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, a discovery plan shall be prepared by USACE and included in the construction contractor's specifications. The discovery plan shall specify what actions are required to 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 shall be developed for the project. This plan shall identify the locations of known Historic Properties as well as sensitive areas designated for archaeological monitoring and shall 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 shall require the contractor to provide a cultural resources and tribal cultural resources sensitivity and awareness training program for all personnel involved in project construction, including field consultants and construction workers. The training shall be developed in coordination with an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology (36 CFR Part 61), as well as culturally affiliated Native American tribes. USACE may invite Native American representatives from interested culturally affiliated Native American tribes to participate. The training shall be conducted before any project-related construction activities begin in the APE and shall include relevant information regarding sensitive cultural resources and Tribal Cultural Resources, including applicable regulations, protocols for avoidance, and consequences of violating Federal and State laws and regulations.

The training shall also describe appropriate avoidance and impact minimization measures for cultural resources and Tribal Cultural Resources that could be located in the APE and shall outline what to do and who to contact if any potential cultural resources or Tribal Cultural Resources are encountered. The training shall emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans and shall discuss appropriate behaviors and responsive actions, consistent with Native American tribal values.

Mitigation Measure CR-4: Implement Procedures for Inadvertent Discovery of Cultural Material.

If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, any human remains, bottle glass, ceramics, and building remains); Tribal Cultural Resources; sacred sites; or landscapes is made at any time during project-related construction activities, the Project Partners and other interested parties, shall develop appropriate protection and avoidance measures where feasible. These procedures shall be developed in accordance with the ARCF PA and 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: In the Event that Tribal Cultural Resources are Discovered Prior to or During Construction, Implement Procedures to Evaluate Tribal Cultural Resources and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects.

California Native American Tribes that are traditionally and culturally affiliated with the geographic area in which the project is located may have expertise concerning their Tribal Cultural Resources (California PRC Section 21080.3.1). As was done during Supplemental EIR preparation, culturally affiliated Tribes shall be further consulted concerning Tribal Cultural Resources that may be impacted, if these types of resources are discovered prior to or during construction. Further consultation with culturally affiliated Tribes shall focus on identifying measures to avoid or minimize impacts on any such resources discovered during construction. If Tribal Cultural Resources are identified in the APE prior to or during construction, the following performance standards shall be met before proceeding with construction and associated activities that may result in damage to or destruction of Tribal Cultural Resources:

- Each identified Tribal Cultural Resource will be evaluated for CRHR eligibility through application of established eligibility criteria (CCR 15064.636), in consultation with interested Native American Tribes.

- If a Tribal Cultural Resource is determined to be eligible for listing in the CRHR, the Project Partners will avoid damaging the Tribal Cultural Resource in accordance with California PRC Section 21084.3, if feasible. If CVFPB determines that the project may cause a substantial adverse change to a Tribal Cultural Resource and measures are not otherwise identified in the consultation process, the following are examples of mitigation steps capable of avoiding or substantially lessening potential significant impacts to a Tribal Cultural Resource or alternatives that will avoid significant impacts to a Tribal Cultural Resource. These measures may be considered to avoid or minimize significant adverse impacts:

    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 Inadvertent Discovery of Human Remains.

To minimize adverse effects from encountering human remains during construction, the Project Partners shall implement the following measures:

- In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, the Project Partners shall 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[c]). After the coroner's findings have been made, the archaeologist and the NAHC-designated MLD, in consultation with the landowner, shall determine the ultimate treatment and disposition of the remains.

- Upon the discovery of Native American human remains, the Project Partners shall require that all construction work must stop within 100 feet of the discovery until consultation with the MLD has taken place. The MLD shall 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. California 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 Project Partners shall employ:

    - record the site with the NAHC or the appropriate Information Center; and.

    - record a document with the county in which the property is located.

If agreed to by the MLD and the landowner, CVFPB or CVFPB's authorized representative shall 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. 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, CVFPB or CVFPB's authorized representative may also reinter the remains in a location not subject to further disturbance. If CVFPB rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to CVFPB. CVFPB shall implement mitigation for the protection of the burial remains. Construction work in the vicinity of the burials shall not resume until the mitigation is completed.

Significance after Mitigation

Implementing Mitigation Measure CR-1 will reduce the level of impact to known resources by requiring the Project Partners to implement an agreed-upon process to resolve adverse effects. Other significant cultural and tribal resources impacts will be reduced to a less-

than-significant level with implementation of Mitigation Measures CR-2 through CR-6, which prescribe processes for addressing the potential to affect previously unknown resources.

3.8 Air Quality

3.8.1 Environmental and Regulatory Setting

The environmental and regulatory framework described in Section 3.11 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EIR and incorporated by reference. Some updated and additional information is provided below.

Criteria Pollutants

The Clean Air Act established the National Ambient Air Quality Standards (NAAQS) for specific air pollutants: ozone (O_3), 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 resistance diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead (Pb). O3 is a secondary pollutant that is not emitted directly into the atmosphere. Instead it forms by the reaction of two ozone precursors: reactive organic gases (ROG) and nitrogen oxides (NOx).

Established to protect public health and welfare, NAAQS and the California Ambient Air Quality Standards (CAAQS) include these aforementioned criteria pollutants. The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the NAAQS, primarily through their review of the State Implementation Plans (SIPs). In California, the California Air Resources Board (CARB) is responsible for the establishment of the SIP. The local air quality management districts are responsible for the enforcement of the SIP, as well as the NAAQS and CAAQS. If an area is meeting the NAAQS and CAAQS, that area is considered in "attainment"; however, areas that are noncompliant are designated "non-attainment" areas. The State and Federal attainment status for the Sacramento Valley Air Basin (SVAB) are shown in Table 3.8-1.

Due to the non-attainment designations for the SVAB, the Sacramento Metropolitan Air Quality Management District (SMAQMD) is required to prepare SIPs for O_3, PM_{10}, and $PM_{2.5}$ to establish how the area would attain the standards by dates specified within the plans.

Barges transporting material to the site will travel through the San Francisco Bay Area Air Basin (SFBAAB) in addition to the SVAB. The SFBAAB is in nonattainment for O_3 (1-hour and 8-hour averaging), PM_{10} (24-hour and annual), and $PM_{2.5}$ (24-hour and annual) (BAAQMD 2017). Due to the non-attainment designations for the Bay Area, the Bay Area Air Quality Management District (BAAQMD) is required to prepare SIPs for O_3, PM_{10}, and $PM_{2.5}$ to establish how the area would attain the standards by dates specified within the plans.

Additionally, Federal projects are subject to the Clean Air Act General Conformity Rule (40 CFR 51, Subpart W). The General Conformity Rule ensures that Federal projects conform to applicable SIPs so that Federal actions do not interfere with a state's strategies used to attain the NAAQS. The rule applies to Federal projects in non-attainment areas for any of the six criteria pollutants for which EPA has established these standards, and in any areas designated as "maintenance" areas. The rule covers both direct and indirect emission of criteria pollutants or

their precursors that result from a Federal project, are reasonably foreseeable, and can be practicably controlled by the Federal agency through its continuing program responsibility.

Table 3.8-1. Sacramento Valley Air Basin Attainment Status

Pollutant	Federal Attainment Status	State Attainment Status
1-hour Ozone	Severe Non-Attainment	Serious Non-Attainment
8-hour Ozone	Severe Non-Attainment	Serious Non-Attainment
24-hour PM_{10}	Attainment	Non-Attainment
Annual PM_{10}	Not Applicable	Non-Attainment
24-hour $PM_{2.5}$	Moderate Non-Attainment	Not Applicable
Annual $PM_{2.5}$	Attainment	Non-Attainment
1-hour Carbon Monoxide	Attainment	Attainment
8-hour Carbon Monoxide	Attainment	Attainment
1-hour Nitrogen Dioxide	Not Applicable	Attainment
Annual Nitrogen Dioxide	Attainment	Not Applicable
3-hour Sulfur Dioxide	Attainment	Not Applicable
24-hour Sulfur Dioxide	Attainment	Attainment
Annual Sulfur Dioxide	Attainment	Not Applicable
30-day Lead	Not Applicable	Attainment
Quarter Lead	Attainment	Not Applicable

Notes: PM_{10} = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less
Source: Sacramento Metropolitan Air Quality Management District 2020

3.8.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project refinements would result in a potentially significant impact to air quality if they 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.

Local air district (SMAQMD and BAAQMD) significance thresholds used in this analysis are presented in Tables 3.8-2 and 3.8-3, respectively, and General Conformity *de minimis* thresholds that apply to the project are presented in Table 3.8-4. The ARCF GRR Final EIS/EIR identified construction of the ARCF project over a longer timeline (10 years compared to 5 years as currently proposed). As a result, the reduced project timeline will increase annual air emissions for the ARCF Project as a whole. This document therefore includes a revised comparison to the General Conformity *de minimis* standards.

Table 3.8-2. Sacramento Metropolitan Air Quality Management District Thresholds of Significance for Construction

Pollutant	Threshold
Oxides of Nitrogen (NOx)	85 pounds per day
Respirable Particulate Matter (PM_{10})	Fugitive dust BACT/BMPs and 80 pounds per day, 14.6 tons per year
Fine Particulate Matter ($PM_{2.5}$)	Fugitive dust BACT/BMPs and 82 pounds per day, 15 tons per year

Notes: BACT = Best Available Control Technology; BMPs = Best Management Practices
Source: Sacramento Metropolitan Air Quality Management District 2020

Table 3.8-3. Bay Area Air Quality Management District Thresholds of Significance for Construction

Pollutant	Threshold
Oxides of Nitrogen (NOx)	54 pounds per day
Reactive Organic Gases (ROG)	54 pounds per day
Respirable Particulate Matter (PM_{10}) - Exhaust	82 pounds per day
Fine Particulate Matter ($PM_{2.5}$) - Exhaust	54 pounds per day

Notes: BACT = Best Available Control Technology; BMPs = Best Management Practices
Source: Sacramento Metropolitan Air Quality Management District 2020

Table 3.8-4. General Conformity *de minimis* Thresholds

Pollutant	Threshold (tons per year)
Carbon Monoxide (CO)	100
Oxides of Nitrogen (NOx)	25
Volatile Organic Compounds (VOC)/Reactive Organic Gases (ROG)	25
Respirable Particulate Matter (PM_{10})	100
Fine Particulate Matter ($PM_{2.5}$)	100

Sources: 40 CFR 93 Section 153 (b)(1); Sacramento Metropolitan Air Quality Management District 2021

3.8.3 Impact Analysis

The 2016 ARCF GRR Final EIS/EIR analysis found less-than-significant impacts related to consistency with air quality plans, fugitive dust, exposure of sensitive receptors to toxic air contaminants, and odors. The analysis in the 2016 ARCF GRR Final EIS/EIR adequately addresses exposure to toxic air contaminants and odors for the Sacramento River Erosion Contract 2 with refinements, and they are not discussed further in this Supplemental EIR.

Construction Emissions

Air quality emissions will be generated by heavy equipment constructing the proposed project and refinements, hauling of material from the borrow source to the project area (including both truck and barge transportation) construction worker trips, and other construction-related trips. There will be no change in O&M emissions associated with the proposed project and refinements. Air emissions were modeled using SMAQMD's Road Construction Emissions Model version 8.1.0, and Harborcraft, Dredge and Barge Emission Factor Calculator (refer to Appendix A for modeling data). The total estimated air emissions for the proposed project and refinements are presented in Tables 3.8-5 and 3.8-6. As shown in Tables 3.8-5 and 3.8-6, the emissions resulting from the proposed project and refinements will potentially exceed the local air district thresholds for NOx. Avoidance, minimization, and mitigation measures identified as Mitigation Measures AIR-1, AIR-2, AIR-3, AIR-4, and AIR-5 will be implemented to reduce these impacts to less-than-significant levels.

Table 3.8-5. Emissions Estimates for the Proposed Project and Refinements – Sacramento Valley Air Basin

Pollutant	Unmitigated/Mitigated (pounds per day)	Unmitigated/Mitigated (tons per year)	Significance Threshold
2023			
ROG	16.55/10.0	1.14/0.85	N/A
NOx	**182.82**/82.80	14.97/10.52	85 pounds/day
PM_{10}	53.47/52.77	1.75/1.52	80 pounds/day and 14.6 tons/year
$PM_{2.5}$	13.43/12.76	0.84/0.64	82 pounds/day and 15 tons/year
2024			
ROG	15.35/9.86	1.09/0.85	N/A
NOx	**166.62**/81.15	14.24/10.45	85 pounds/day
PM_{10}	53.31/52.77	1.71/1.52	80 pounds/day and 14.6 tons/year
$PM_{2.5}$	13.27/12.76	0.81/0.64	82 pounds/day and 15 tons/year

Notes: Bold numbers indicate concentrations above thresholds.
NOx = oxides of nitrogen; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases.
Sacramento Metropolitan Air Quality Management District (SMAQMD) considers construction activities unlikely to generate substantial quantities of carbon monoxide (SMAQMD 2019).
CEQA significance thresholds for PM assume that fugitive dust Best Available Control Technology/Best Management Practices are implemented in accordance with SMAQMD guidance

Table 3.8-6. Emissions Estimates for the Proposed Project and Refinements – San Francisco Bay Area Air Basin

Pollutant	Barge Emissions (pounds per day)	Significance Threshold (pounds per day)
2023 and 2024		
ROG	19.81	54
NOx	**321.39**	54
PM_{10}	14.49	82
$PM_{2.5}$	12.96	84

Notes: Bold numbers indicate concentrations above thresholds.
NOx = oxides of nitrogen; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases.

Tables 3.8-7 and 3.8-8 present combined emissions for the proposed project refinements and the other components of the ARCF 2016 Project that are anticipated to be constructed during calendar year 2023 and 2024, for comparison to General Conformity *de minimis* standards. For purposes of General Conformity, the entire ARCF 2016 Project is considered a single action. As shown in Tables 3.8-7 and 3.8-8, implementing avoidance and minimization measures described in Mitigation Measures AIR-1, AIR-2, and AIR-3 will reduce emissions, but not below the *de minimis* standards for NO_x. Mitigation Measure AIR-4 requires payment of fees to offset NO_x emissions, resulting in less-than-significant impacts.

Table 3.8-7. Annual Emissions Estimates for the ARCF 2016 Project with Refinements – Sacramento Valley Air Basin

Project Component	ROG Unmitigated	NOx Unmitigated	PM_{10} Unmitigated	$PM_{2.5}$ Unmitigated	ROG Mitigated	NOx Mitigated
2023						
Sacramento River Erosion Contract 2	1.14	14.97	1.75	0.84	0.85	10.52
Sacramento River Erosion Levee C4	0.83	7.94	3.70	1.05	0.47	2.06
Lower American River Erosion Contract 3	1.24	21.82	1.85	0.75	0.75	7.93
Lower American River Erosion Contract 4	1.24	21.82	1.85	0.75	0.75	7.93
Sacramento Weir	1.31	17.01	39.44	8.62	0.85	6.01
Total ARCF 16 Project Emissions	5.76	**83.56**	48.59	12.01	3.67	**34.45**
General Conformity *de minimis* Thresholds	25	25	100	100	25	25
2024						

Sacramento River Erosion Contract 2	1.09	14.24	1.71	0.81	0.85	10.45
Sacramento River Erosion Contract 3	0.99	10.83	1.60	0.72	0.74	7.04
Sacramento River Erosion Contract 4	0.99	10.83	1.60	0.72	0.74	7.04
Sacramento Weir	1.51	14.16	44.71	9.78	1.10	6.28
Total ARCF 16 Project Emissions	4.58	**50.06**	49.62	12.03	3.43	**30.81**
General Conformity *de minimis* Thresholds	25	25	100	100	25	25

Notes: Bold numbers indicate concentrations above thresholds.
CO = carbon monoxide; NOx = oxides of nitrogen; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases.
Unmitigated and Mitigated data is presented in tons per year.

Table 3.8-8. Emissions Estimates for the ARCF 2016 Project with Refinements – San Francisco Bay Area Air Basin

Project	**ROG** Unmitigated	**NOx** Unmitigated	**PM_{10}** Unmitigated	**$PM_{2.5}$** Unmitigated	**ROG** Mitigated	**NOx** Mitigated
2023						
Sacramento River Erosion Contract 2	0.53	9.02	0.41	0.36	0.53	9.02
Lower American River Erosion Contract 3	N/A	N/A	N/A	N/A	N/A	N/A
Lower American River Erosion Contract 4	N/A	N/A	N/A	N/A	N/A	N/A
Sac Weir	0.08	1.43	0.06	0.06	0.08	1.43
Total ARCF 16 Project Emissions	0.61	10.45	0.47	0.42	0.61	10.45
General Conformity *de minimis* Thresholds	25	25	100	100	25	25
2024						
Sacramento River Erosion Contract 2	0.53	9.02	0.41	0.36	0.53	9.02
Sacramento River Erosion Contract 3	0.39	6.58	0.30	0.26	0.39	6.58
Sacramento River Erosion Contract 4	0.39	6.58	0.30	0.26	0.39	6.58
Sacramento Weir	0.21	3.64	0.16	0.15	0.21	3.64

Total ARCF 16 Project Emissions	1.52	**25.82**	1.17	1.03	1.52	**25.82**
General Conformity *de minimis* Thresholds	25	25	100	100	25	25

Notes: Bold numbers indicate concentrations above thresholds.
CO = carbon monoxide; NOx = oxides of nitrogen; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases.
Unmitigated and Mitigated data is presented in tons per year.

Avoidance and minimization measures will be implemented to reduce criteria pollutant emissions and mitigation measures (including payment of fees) will be implemented to reduce air quality impacts to less-than-significant levels. The measures described below will reduce criteria pollutant emissions, diesel particulate emissions, and fugitive dust associated with construction activities. As a result, there will be no short- or long-term significant impacts to air quality in the region due to construction of the ARCF, including the Sacramento River Erosion Contract 2 and its refinements. This action individually will not exceed Federal General Conformity *de minimis* thresholds before or after mitigation in either air basin and when considered with other ARCF features being constructed in 2023 and 2024, ARCF with refinements will not exceed General Conformity thresholds after implementing avoidance and minimization measures described in Mitigation Measures AIR-1, AIR-2, and AIR-3.

3.8.4 Mitigation Measures

The following mitigation measures have been previously adopted (USACE and CVFPB 2021b).Tables 3.8-5 and 3.8-6 show estimated emissions of the proposed project with refinements, after implementing the avoidance, minimization, and mitigation measures shown below in AIR-1 through AIR-5. Tables 3.8-7 and 3.8-8 show estimated emissions of the ARCF 2016 projects, including the Sacramento River Erosion Contract 2 with refinements, that will be constructed in 2023 and 2024, after implementing avoidance and minimization measures shown below in Mitigation Measures AIR-1 through AIR-3.

<u>Mitigation Measure AIR-1: Implement the Sacramento Metropolitan Air Quality Management District's Basic Construction Emission Control Practices.</u>

SMAQMD requires that all projects, regardless of their significance, implement the following measures to minimize the generation of fugitive PM dust. The Basic Construction Emission Control Practices shall include measures to control fugitive PM dust pursuant to SMAQMD Rule 403, as well as measures to reduce construction-related exhaust emissions. USACE shall require its contractors to comply with the basic construction emission control practices listed below for all construction-related activities occurring in SMAQMD jurisdiction.

- Water all exposed surfaces two times daily or more, as needed. Exposed surfaces include but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.

- Cover, or suitably wet soils and other materials on haul trucks transporting soil, sand, or other loose material on the site. Cover any haul trucks that travel along freeways or major roadways.

- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.

- Limit vehicle speed on unpaved roads to 15 miles per hour.

- Complete pavement of all roadways, driveways, sidewalks, parking lots to be paved as soon as possible.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (required by CCR, Title 13, Sections 2449[d][3] and 2485).

- Provide clear signage that posts this requirement for workers at the entrances to the site.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. Have the equipment checked by a certified mechanic and determined to be running in proper condition before it is operated.

Mitigation Measure AIR-2: Implement the Sacramento Metropolitan Air Quality

Management District's Enhanced Fugitive PM Dust Control Practices.

SMAQMD recommends that construction projects that would exceed or contribute to the mass emissions threshold for PM_{10} implement the Enhanced Fugitive PM Dust Control Practices, as applicable to the project. As the construction activities for the proposed project will involve substantial material movement activities and will be located in proximity of residential receptors, The Project Partners shall require construction contractors to implement the Enhanced Fugitive PM Dust Control Practices listed below to help reduce potential fugitive PM dust emissions.

Soil Disturbance Areas

- Water exposed soil with adequate frequency for continued moist soil; however, do not overwater to the extent that sediment flows off the site.

- Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 miles per hour.

- Install wind breaks (e.g., plant trees, solid fencing) on windward side(s) of construction areas.

- Plant vegetative ground cover (fast germinating native grass seed) in disturbed areas as soon as possible and water appropriately until vegetation is established.

Unpaved Roads (Entrained Road Dust)

- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the site.

- Treat site accesses with a 6- to 12-inch layer of wood chips, mulch, or gravel to a distance of 100 feet from the paved road to reduce generation of road dust and road dust carryout onto public roads.

- Post a publicly visible sign with the telephone number and person to contact at USACE regarding dust complaints. This person will respond and take corrective action within 48 hours. The phone number of SMAQMD also will be visible to ensure compliance.

Mitigation Measure AIR-3: Require Lower Exhaust Emissions for Construction Equipment.

The Project Partners shall require contractors to use a fleet-wide average of 90 percent Tier 4 emissions vehicles for off-road construction equipment and on-road haul trucks must be equipped with 2010 or newer engines. In order to demonstrate compliance with this requirement

- The construction contractor shall submit to USACE and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that would be used an aggregate of 40 or more hours during any portion of the construction project.

- The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. The construction contractor shall provide the anticipated construction timeline including start date, and the name and phone numbers of the project manager and the on-site foreman. This information shall be submitted at least 4 business days prior to the use of subject heavy-duty off-road equipment. The SMAQMD Construction Mitigation Tool can be used to submit this information. The inventory shall be updated and submitted monthly throughout the duration of the project, except for any 30-day period in which no construction activity occurs.

- The construction contractor shall provide a plan for approval by USACE and SMAQMD demonstrating that the heavy-duty off-road vehicles (50 horsepower or more) to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet average of 90 percent Tier 4 emissions vehicles. This plan shall be submitted in conjunction with the equipment inventory. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.

- SMAQMD's Construction Mitigation Tool can be used to identify an equipment fleet that achieves this reduction. The construction contractor shall ensure that emissions from all off-road diesel-powered equipment used in the project area do not exceed 40 percent opacity for more than 3 minutes in any 1 hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Non-compliant equipment will be documented and a summary provided monthly to USACE and SMAQMD. A visual survey of all in-operation equipment shall be made at least weekly. A monthly summary of the visual

survey results shall be submitted throughout the duration of the project, except for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed, as well as the dates of each survey.

- Use the Construction Mitigation Tool to track PM_{10} emissions and mileage traveled by on-road trucks, reporting results to USACE and SMAQMD on a monthly basis.

Mitigation Measure AIR-4: Use the Air District's Off-site Mitigation Fee to Reduce NO_x Emissions.

The Project Partners shall implement the measures listed below to reduce NO_x construction-related emissions.

Pursuant to air district thresholds of significance, if the projected construction-related emissions exceed the NOx threshold of significance, based on the equipment inventory and use, USACE shall contribute to SMAQMD's and/or BAAQMD's off-site mitigation fee program sufficiently to offset the amount by which the project's NO_x emissions exceed the threshold. If emissions for the ARCF 2016 Project in any given year would exceed the de minimis threshold of 25 tons per year, USACE would enter into an agreement with SMAQMD and/or BAAQMD to purchase offsets for all NOx emissions in any year that projected emissions would exceed the threshold. The determination of the estimated mitigation fees shall be conducted in coordination with SMAQMD and/or BAAQMD before any ground disturbance occurs for any phase of project construction. (USACE anticipates purchasing offsets for NO_x emissions in 2023 and 2024 because the ARCF 2016 Project is forecast to exceed the *de minimis* threshold. Estimated fees for the Sacramento River Erosion Contract 2 project are $37,350 annually to BAAQMD for emissions in the SFBAAB.) All mitigation fees shall be paid prior to the start of construction activity to allow air districts to obtain emissions reductions for the proposed project. If there are changes to construction activities (e.g., equipment lists, increased equipment usage or schedules), USACE shall work with SMAQMD and BAAQMD to ensure emission calculations and fees are adjusted appropriately.

Mitigation Measure AIR-5: Implement Marine Engine Standards

The Project Partners shall encourage the use of EPA adopted Tier 3 and Tier 4 standards for newly built marine engines in 2008. The Tier 3 standards reflect the application of technologies to reduce engine PM and NO_x emission rates. Tier 4 standards reflect application of high-efficiency catalytic after-treatment technology enabled by the availability of ultra-low sulfur diesel.

The Project Partners will use Tier 2 and 3 marine engines standards where available to reduce marine exhaust emissions. Due to uncertainty as to the availability of Tier 4 marine engines within the required project timeline, this mitigation measure does not require the use of Tier 4 marine engines. However, should they become available during the appropriate construction periods, the use of these engines will be required in order to further lower project emissions.

Significance after Mitigation

The significant impact to air quality will be reduced to a less-than-significant level with implementation of Mitigation Measures AIR-1, AIR-2, AIR-3, AIR-4, and AIR-5 because the Project Partners will implement measures to reduce exhaust emissions and fugitive dust, and mitigation fees will be paid to offset emissions.

3.9 Climate Change

3.9.1 Environmental and Regulatory Setting

The environmental and regulatory framework described in Section 3.12 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EIR and therefore is not repeated here.

3.9.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project would result in a potentially significant impact to climate change if they would:

- Conflict with an applicable plan adopted for the purpose of reducing GHG emissions. SMAQMD has local jurisdiction over the project site. In October 2014, the SMAQMD adopted a resolution that recommends GHG thresholds of significance as follows:
    - Construction phase of projects: 1,100 metric tons of carbon dioxide equivalent (CO_2e) per year
    - Operational phase of land development projects: 1,100 metric tons of CO_2e per year
    - Stationary source projects: 10,000 direct metric tons of CO_2e per year; or
- Generate GHG gas emissions, either directly or indirectly, that may have a significant impact on the environment.

SMAQMD recommends that GHG emissions from construction activities be quantified and disclosed, a determination regarding the significance of these GHG emissions be made based on a threshold determined by the lead agency, and BMPs be incorporated to reduce GHG emissions during construction, as feasible and applicable.

Impact Analysis

<u>Temporary, Short-Term Generation of Greenhouse Gas Emissions</u>

The proposed project will emit an estimated 1,736 metric tons of CO_2e during each year of project construction in 2023 and 2024. This exceeds the threshold of 1,100 metric tons of CO_2e recommended by SMAQMD for construction phases and applied by USACE to this

analysis and will be a significant impact. Implementing new Mitigation Measure GHG-1 will reduce construction-related GHG emissions to a less-than-significant level through efficient operation of construction equipment engines, enhanced emissions reductions for equipment used during construction, minimization of equipment idling when not in use, and purchasing carbon offset credits. Therefore, with implementation of Mitigation Measure GHG-1 to reduce GHG emissions and purchase offset credits, the proposed project will not make a cumulatively considerable incremental contribution to cumulative GHG emissions and global climate change.

Conflict with an Applicable GHG Emissions Reduction Plan and Effects of Climate Change

The intent, purpose, and function of the proposed project aligns with the goals of the Assembly Bill (AB) 32 Scoping Plan to protect against the detrimental effects of climate change. It is not anticipated that climate change will have an adverse effect on the proposed project, rather, the project will improve the Sacramento River east levee and provide improved flood protection to the densely populated City of Sacramento and some unincorporated Sacramento County areas. Therefore, the proposed project is an adaptive measure against the potential effects of climate change.

The climate change assessment contained in the 2018 Safeguarding California Plan, California's Climate Adaptation Strategy (CAS) identified floods (among heat waves, wildfires, and droughts) as likely being one of the earliest climate change effects experienced in California (CNRA 2018). The Updated AB 32 Scoping Plan cites the need to buffer from the increasing effects of climate change, including floods (CARB 2017). Therefore, in addition to reducing GHG emissions, which is the primary goal of the Scoping Plan, it is also critical to implement actions and projects that will prevent, avoid, and minimize the detrimental effects of climate change. These types of projects would also help avoid reconstruction and repair expenditures, losses and disruptions to economic activities, and effects on local residents from a flood event. Although the ARCF GRR 2016 Project, including the Sacramento River Erosion Contract 2 with refinements, will include new temporary, short-term GHG emissions during construction, these emissions will be mitigated to a less-than-significant level with implementation of Mitigation Measure GHG-1, and the project will thus not conflict with plans for reducing GHG emissions. Because the project will be consistent with the goals of the 2018 CAS and the 2017 AB 32 Scoping Plan to protect against the detrimental effects of climate change without impeding current economic growth, the Sacramento River Erosion Contract 2 project, including refinements, will have a less-than-significant effect.

3.9.3 Mitigation Measures

The following mitigation measure has been previously adopted (USACE and CVFPB 2021b).
Mitigation Measure GHG-1: Implement GHG Reduction Measures.

Measures that will be implemented to reduce the project's contribution from generation of GHGs are as follows:

- Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.

- Recycle at least 75% of construction waste and demolition debris.

- Purchase at least 20% of the building 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 reducing the time of idling to no more than 3 minutes (5-minute limit is required by the state airborne toxic control measure [Title 13, sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must 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).

- Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).

- Use an ARB approved low carbon fuel for construction equipment. (NOx emissions from the use of low carbon fuel must be reviewed and increases mitigated.)

- Purchase GHG offset for program-wide GHG emissions (direct emissions plus indirect emissions from on-road haul trucks plus commute vehicles) exceeding SMAQMD significance thresholds applicable at the time of construction. Carbon offset credits shall be purchased from programs that have been approved by SMAQMD.

Significance after Mitigation

The significant impact related to GHG emissions will be reduced to a less-than-significant level with implementation of Mitigation Measure GHG-1, because the Project Partners will take actions to reduce project emissions of GHGs and purchase offsets for GHG emissions in excess of SMAQMD thresholds

3.10 Noise

3.10.1 Environmental and Regulatory Setting

The environmental and regulatory framework described in Section 3.13 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EA/EIR and therefore is not repeated here. Some additional site-specific conditions are described below.

Land uses adjacent to the individual work areas consist of residences, schools, playgrounds, parks, offices, and industrial land uses. Land uses as defined by Federal, State, and local regulations as noise-sensitive vary slightly but typically include schools, hospitals, rest homes, places of worship, long-term care facilities, mental care facilities, residences, convalescent (nursing) homes, hotels, certain parks, and other similar land uses. The closest

noise-sensitive land uses are residential properties within 50 feet of the levees, staging areas, and haul routes. The primary existing noise source in these residential areas consists of vehicular traffic on adjacent roadways. Sensitive receptors include residents along the levee system, and boaters and recreationalist along the Sacramento River.

The City of Sacramento exterior noise standard, as stated in the City's noise ordinance, is 55 A-weighted decibels (dBA) during the hours of 7:00 a.m. to 10:00 p.m. for residential areas. The standard then adjusts to 50 dBA between 10:00 p.m. and 7:00 a.m. for residential areas. The noise ordinance also exempts construction noise during the hours 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. The ordinance further states that the operation of an internal combustion engine is not exempt if the engine is not equipped with suitable exhaust and intake silencers in good working order (8.68.080 Exemptions, Noise Control Standards, City of Sacramento Municipal Code).

3.10.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project refinements would result in a potentially significant impact to noise if it would cause:

- a substantial temporary or permanent increase in ambient noise levels in the study area above the existing levels;
- exposure of sensitive receptors to excessive noise levels (those levels that exceed the City of Sacramento noise ordinance, discussed above); or
- exposure of sensitive receptors or structures to groundborne vibration.

Impact Analysis

Potential Increase in Ambient Noise Levels or Exposure of Sensitive Receptors to Excessive Noise or Vibration

Construction noise will be generated by equipment and material placement. A crane and excavator on barges will place quarry stone, soil bedding/soil fill, soil filled quarry stone, aggregate base, and IWM.

Construction activities associated with the proposed project will result in temporary, short term, and intermittent increases of noise for sensitive receptors. Because several residences are located within 1,000 feet of the construction zone, there will be very little attenuation to reduce the noise effects from construction for many of the residents. While the city of Sacramento has a noise exemption during daylight hours, as described above, noise levels above 55 dBA are generally considered to have a significant effect on sensitive receptors. Activities such as soil placement/compaction and rip rap installation can result in noise levels of up to 95 dBA at 50 feet, and could also result in perceptible vibration. Residences adjacent to the project will be further than 50 feet from the construction activities, the levee crown and trees left in

place could aid in buffering the noise. Boaters on the Sacramento River will be required to be 50 feet away from the construction activities however, they will not have the benefit of screen trees.

Temporary noise and vibration impacts during construction will be significant. Implementation of Mitigation Measure NOI-1 will reduce impacts associated with temporary noise levels and vibration during construction activities to less than significant; this is the same conclusion as in the ARCF GRR Final EIS/EIR.

3.10.3 Mitigation Measures

The following mitigation measure has been previously adopted (USACE and CVFPB 2021b).

Mitigation Measure NOI-1: Implement Measures to Reduce Construction Noise and Vibration Effects.

The Project Partners will require construction contractors to implement measures at each work site to avoid and minimize construction noise and vibration effects on sensitive receptors. Prior to the start of construction, the construction contractor will prepare a noise control plan to identify feasible measures to reduce construction noise, when necessary. The measures in the plan would apply to construction activities within 500 feet of a sensitive receptor, including, but not limited to, residences. These measures may include, but are not limited to, the following:

- 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 1 week to 1 month of the start of construction at that location.
- Display notices with information including, but not limited to, 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.) Monday through Friday, when 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., more 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 feasible.

- If the construction zone is within 500 feet of a sensitive receptor, place temporary barriers 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 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.

- Design haul routes to avoid sensitive receptors, to the extent practical.

- To the extent feasible and practicable, the primary construction contractors would employ vibration-reducing construction practices such that vibration from construction complies with applicable noise-level rules and regulations that apply to the work, including the vibration standards established for construction vibration-sources by the applicable agencies (City of Sacramento and Sacramento County), depending on the jurisdictional location of the affected receptor(s), and the California Department of Transportation's (Caltrans) Transportation and Construction Vibration Guidance Manual, which identifies maximum vibration levels of 0.2 to 0.5-inch per second Peak Particle Velocity (PPV) for minimizing damage to structures. Project construction specifications would require the contractor to limit vibrations to less than 0.2-inch per second PPV, and less than 72 VdB within 50 feet at any building. If construction would occur within 50 feet of any 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:

    - Numerical thresholds above which the contractor would be required to document vibration sources and implement measures to reduce vibration, and above which work would be required to stop for consideration of alternative construction methods.

    - Avoid vibratory rollers and packers near sensitive areas to the maximum extent practicable.

    - Route heavily loaded trucks away from residential streets, if possible. If no alternatives are available, select streets with the fewest homes.

    - A voluntary pre- and post-construction survey would be conducted to assess the existing condition of structures prior to construction and potential architectural/structural damage induced by levee construction vibration at each structure within 100 feet of construction activities, including staging areas. 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 surveys of structures would be performed to identify (and repair, if necessary) damage, if any, from construction activities. Any construction-related damage would be documented with photographs and video. This documentation would be reviewed with the individual property owners.

- Place vibration monitoring equipment in lines approximately parallel to the levee alignment at intervals not to exceed 200 feet along the construction limits, including active staging areas. Vibration monitors will be operational at all times during the performance of construction activities. The contractor will monitor and record vibrations continuously.

Significance after Mitigation

The significant impacts related to noise and vibration will be reduced to a less-than-significant level with implementation of Mitigation Measure NOI-1, because the Project Partners will require a noise control plan, vibration control plan, and actions to reduce the effects of construction. These actions would include scheduling louder activities for daytime hours, using less noisy equipment where available, and locating and routing activities to minimize effects on sensitive receptors.

3.11 Recreation

3.11.1 Environmental and Regulatory Setting

The environmental and regulatory framework described in Section 3.14 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EIR and therefore is not repeated here. Some additional site-specific conditions are described below.

Sacramento River Parkway

The Sacramento River Parkway extends along the entire length of the Sacramento River east levee where improvements are proposed. Developed portions of the parkway accommodate pedestrians and bicyclists and provide access to the Sacramento River. Where trail segments have not been officially designated or constructed, some portions of the levee crown in the project vicinity are used as a pedestrian/bicycle path. Paved segments of the parkway extend from Old Sacramento to Sutterville Road, along Riverside Boulevard between 35th Avenue and Ellsworth C. Zacharias Park, and near Garcia Bend Park.

Excursion Train

California State Parks operates the Sacramento Southern Railroad Excursion Train. The train departs from the Central Pacific Railroad Freight Depot in Old Sacramento (Front Street, between J and K Streets) and travels approximately 3 miles along the Sacramento River east levee crown, adjacent the project site, to a turnaround location at Land Park. The excursion train operates 53 days annually, with a total of 534 round trips, and attracts nearly 80,000 riders (California State Railroad Museum 2017).

City of Sacramento Parks and Recreation Facilities

Miller Park, Garcia Bend Park, and Ellsworth C. Zacharias Park are located in the vicinity of the project site. Other city parks are located nearby in the Pocket/Greenhaven and Little Pocket neighborhoods.

Stan's Yolo Marina on the Sacramento River

The Stan's Yolo marina is located on the west side of the Sacramento River, across the river from areas where levee improvements are proposed. This marina provides boat docking facilities.

Bicycle Facilities

The approximately 4.8-mile Pocket Canal Parkway bike trail is a Class I (off-street) trail that begins at the southern end of Pocket Road, adjacent to Sump 132. The bike trail parallels the Pocket Canal through the Pocket Area. From Sump 132, the bike trail travels north to Florin Road, then turns west and ends at Down River Court. An eastern branch of the trail extends from Portuguese Park to Greenhaven Drive.

In addition to the Sacramento River Parkway bike path and Pocket Canal Parkway bike trail mentioned above, designated Class II and Class III (i.e., on-street rights-of-way recommended for bicycle travel that also provide shared-use with motor vehicles or pedestrian traffic) bicycle facilities currently exist throughout the Pocket area.

3.11.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project refinements would result in a potentially significant impact to recreation if they 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; or
- Result in inconsistencies or non-compliance with regional planning documents or the Rivers and Harbors Act.

Impact Analysis

Temporary Changes to Recreational Opportunities during Project Construction Activities

During construction of the proposed project refinements, access to the levee crown will be restricted. Construction access (entrance and exit) will be at various locations illustrated on Figures 2-1 through 2-10. The barges will access the site along existing waterways between the Delta and the project site. Material transport to the project site will generally be via barges, and personal construction worker vehicles will be the primary construction traffic.

Constructing the proposed project will require temporary closure of portions of the Sacramento River Bike Trail, including paved trail segments which are regularly used by the

general public for recreational purposes. However, following completion of construction, the levee and Sacramento River Bike Trial will be reopened and available for public use.

Construction and staging will temporarily restrict recreational use in Miller Regional Park. While construction will temporarily restrict recreational use in portions of the park, the majority of the park would still be accessible to the public.

Construction of the proposed improvements will occur from the water side at two locations simultaneously, and up to two barges will be temporarily staged in the river adjacent to each of the work areas. This will cause a temporary impact to boating traffic during construction between July 1 and October 31 in both construction years, 2023 and 2024. Boaters will still be able to move through the area and appropriate signage will be utilized to inform boaters of any obstructions.

Recreation impacts, including closure of the Sacramento River Parkway will be significant, and will be reduced with implementation of Mitigation Measure REC-1. However, temporary construction-related impacts on recreation will remain significant and unavoidable as presented in the ARCF GRR EIS/EIR.

3.11.3 Mitigation Measures

The following mitigation measures have been previously adopted (USACE and CVFPB 2021a).

Mitigation Measure REC-1: Implement Pedestrian Detours, Provide Construction Period Information on Facility Closures.

The Project Partners will implement the following measures to reduce temporary, short-term construction effects on recreational facilities in the Project Area:

- Provide marked detours for pedestrian routes. Detours should 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. Post signs that clearly indicate closure routes at major entry points for trails and will provide a contact number to call for questions or concerns.

- Post signs at major entry points for trails, and boat launch ramps at the Miller Regional Park, Garcia Bend Park and the Sacramento Marina clearly indicating closures of trails and estimated duration of closures. Information signs will notify the public of alternate parks and recreation sites, including boat launch ramps, and will provide a contact number to call for questions or concerns.

- Upon completion of levee improvements, coordinate with the City of Sacramento to restore access and repair any construction-related damage to recreational facilities to pre- project conditions.

Mitigation Measure REC-2: Implement Measures to Notify Boaters

The Project Partners will implement the following measures to reduce temporary, short-term construction effects on recreational facilities in the Project Area:

- Post signs at the Sacramento Marina and Garcia Bend Park to clearly indicate the estimated duration of in-water work windows and construction duration.
- Place buoys at the upstream and downstream ends of the construction site to warn boaters of the in-water work.
- Notify the Coast Guard, in accordance with the Rivers and Harbors Act, of in-water work from barges moored in the river. Notification will include in-water work windows and construction duration.

Significance after Mitigation

Recreation impacts, including closure of the Sacramento River Parkway and the Garcia Bend boat access and impacts to boaters from in-water work, will be reduced with implementation of Mitigation Measures REC-1 and REC-2 because detours, notices, and alternative access would be provided. However, temporary construction-related impacts on recreation will remain significant and unavoidable as presented in the ARCF GRR EIS/EIR.

3.12 Visual Resources

3.12.1 Environmental and Regulatory Setting

The environmental and regulatory framework described in Section 3.15 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EA/EIR and therefore is not repeated here. Some additional site-specific conditions are described below.

Existing Conditions

The main group of viewers along the Sacramento River where construction activities will occur are residents living adjacent to the levee and boaters on the Sacramento River. The proposed project is located within a primarily residential area of the Sacramento River with residential properties on the landside and a narrow riparian corridor on the waterside. Much of this stretch of the levee is closed to the general public by gates that prevent public access, however, the northern portions of the levee (Sites 1 and 2) and the area between Sump 132 and Garcia Bend Park include the paved Sacramento River Bike Trail on top of the levee, which is regularly used by recreationalists. The residents and recreationalists on the river and bike trail have views of large riparian trees and open views of the Sacramento River. Views from the levee crown consist of scenic images of the Sacramento River including tall green shade trees and other riparian vegetation on both sides of the river. Boaters on the Sacramento River have similar views of green riparian vegetation lining both banks of the river as well as views of tops of homes and buildings adjacent to the levee. These views present a high degree of vividness and unity within the proposed project area therefore, the visual quality is considered high.

3.12.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project refinements would result in a potentially significant impact to visual resources if they 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.

Impact Analysis

Changes in Scenic Vistas and Existing Visual Character

Temporary impacts on visual resources during construction will be significant due to the presence of equipment and construction activities, including bank protection placement and vegetation removal, as identified in the ARCF GRR Final EIS/EIR, with no feasible mitigation measures to reduce this effect. Construction activities will require hauling of material and equipment to the site via barges loaded with large construction equipment and materials on the Sacramento River. Impacts will be realized by boaters and pedestrians who will be able to see the construction equipment and activity. As well as residents whose properties back up to the levee will be able to see the construction from their backyards and windows. In summary, this project will degrade the visual quality of this area of the Sacramento River for residents and recreational users. However, because construction is only anticipated to occur for two construction seasons, the reduction in visual quality from construction activities will be short-term and temporary.

Because the proposed project will require the removal of trees and vegetation at the project site, this will have a significant and unavoidable short-term visual impact and could have a long-term effect on the visual quality of the project area. However, as discussed in sections 2.2.2, 2.2.3, and 2.3.4, after construction is complete, the riparian bench will be replanted with native trees and shrubs and the management plan will ensure the success of the re-vegetation. Over time, the maturation of the riparian vegetation will return the visual quality of the project area to pre- construction conditions. Therefore, the proposed project will not result in a long-term significant effect to scenic resources or visual character; impacts are less than significant.

None of the project-related activities will include buildings or other facilities that will require permanent lighting therefore, no long-term sources of light or glare will be introduced into view-sheds. No night-time construction work is planned as part of the proposed project.

During construction of the proposed project, the levee crown and barges may be equipped with lighting for security purposes of construction equipment and stored materials, which will result in new sources of nighttime light pollution and will be visible by neighboring residences and boaters passing near the project site. Lighting may illuminate adjacent residences but the levee and trees on the crown and landside of the levee are expected to aid in screening light disturbances for the residences, along with the implementation of shielding as required by Mitigation Measure VIS-1. This will result in a short-term and temporary significant impact however, Mitigation Measure VIS-1 will reduce the impact of nighttime light to less-than-significant because the contractor will direct lighting away from light-sensitive receptors.

3.12.3 Mitigation Measures

The following mitigation measure has been previously adopted (USACE and CVFPB 2021b).

Mitigation Measure VEG-1: Retain, Protect, and Plant Trees On-Site

Refer to Section 3.4.3 for the full text of this mitigation measure.

Mitigation Measure VEG-2: Compensate for Riparian Habitat Removal.

Refer to Section 3.4.3 for the full text of this mitigation measure.

Mitigation Measure SRA-1: Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat

Refer to Section 3.4.3 for the full text of this mitigation measure.

Mitigation Measure VIS-1: Reduce Light Pollution.

The Project Partners will require construction contractors to ensure that all temporary lighting related to security of the staging areas to be shielded or directed to avoid or minimize any direct illumination onto light-sensitive receptors located outside of the Project Area.

Significance after Mitigation

The long-term effects to visual resources from the proposed project with refinements will be reduced to less-than-significant with avoidance, minimization, and inclusion of the on-site riparian planting bench as required by Mitigation Measures VEG-1, VEG-2, and SRA-1. Mitigation Measure VIS-1 will reduce the impact of nighttime light to less than significant because the contractor will direct lighting away from light-sensitive receptors.

As described in the ARCF GRR Final EIS/EIR, short-term impacts on visual resources associated with construction along the Sacramento River will be significant and unavoidable. Construction of the proposed project refinements will not result in short-term visual impacts that will be new or substantially more severe than those addressed in the ARCF GRR Final EIS/EIR and, therefore, those construction-related short-term visual impacts are already adequately addressed in the ARCF GRR Final EIS/EIR.

3.13 Hazardous Wastes and Materials

3.13.1 Environmental and Regulatory Setting

The environmental and regulatory setting in Section 3.17 of the ARCF GRR Final EIS/EIR is applicable to the analysis in this Supplemental EIR and is not repeated.

Existing Conditions

A Phase I Environmental Site Assessment (Phase I ESA) (HDR 2017) was conducted for the portion of the Sacramento River East Levee, encompassing the project area. The Phase I ESA included a visual inspection of the project site for the proposed project, a review of environmental data bases and regulatory agency records, and a review of historical data sources. The Phase I ESA identified the presence of the following Recognized Environmental Conditions (RECs):

- arsenic in soils along railroad corridors due to historical treatment with herbicides to prevent the growth of plants in and adjacent to active railroad tracks;
- aerially deposited lead identified in shallow soil samples under Pioneer Bridge;
- debris and lead contamination in fill material used to construct a portion of the Sacramento River east levee near Broadway;
- contaminants in soil and groundwater related to historical industrial use along Front Street;
- petroleum hydrocarbons in soil and groundwater associated with the bulk fuel storage area near Broadway;
- soil and groundwater contamination associated with a former manufactured gas plant on Front Street;
- contaminated soil and groundwater at the Setzer Forest Products property east of I-5 and south of Broadway; and
- petroleum hydrocarbon contamination in soil and groundwater from the Shell fuel station located at 8900 Pocket Road.
- Two Pacific Gas and Electric Company (PG&E) natural gas mains parallel the landside levee toe near Station 1096. Health and safety hazards may occur if excavation activities disrupt pipelines.

A Phase II site investigation (HDR 2018) was performed and found that elevated concentrations of lead in a limited volume of superficial soil strippings just north of the Highway 50 viaduct (Pioneer Bridge. Phase II sampling also verified arsenic in soil along the rail lines as well as aerially deposited lead near Broadway. Additional testing was completed by Kleinfelder (Kleinfelder 2021), which identified soil contamination and recommendations for addressing the material.

Schools

The Leataata Floyd Elementary School and the adjacent Arthur J. Benjamin Health Professions High School, at 401 and 451 McClatchy Way, respectively, are located more than 0.25 miles southeast of work areas in Miller Regional Park. The Brookfield School at 6115 Riverside Boulevard is located adjacent to work areas at the northern end of the Pocket neighborhood. The Camellia Waldorf School is located adjacent to work areas at the southern end of the Pocket neighborhood.

Airports and Airstrips

Sacramento Executive Airport is located approximately 1.3 miles east of work areas in the Little Pocket. The project site is not located within or adjacent to any of the airport safety zones. (Sacramento Area Council of Governments [SACOG] 1999:39.)

The Borges-Clarksburg Airport is located approximately 2 miles south of staging areas at the south end of the Pocket. No work or staging areas are located within or adjacent to any of the airport safety zones. The Sacramento Regional County Sanitation District

(SRCSD) borrow site is located just outside, and to the east of, the airport's overflight zone. (SACOG 1994:3, 21.)

Wildland Fire Hazards

Staging and levee improvement areas are located within a generally developed and urbanized area. However, riparian vegetation is present within the levees along the Sacramento River. According to the California Department of Forestry and Fire Protection (CAL FIRE), staging and levee improvement areas are in a local responsibility area and is not within a very high fire hazard severity zone (CAL FIRE 2007, 2008).

3.13.2 Environmental Impacts

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. A significant impact related to hazards and hazardous materials would occur if the proposed project refinements would result in any of the following:

- 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.

One additional threshold is considered in this analysis. The project was determined to result in a significant effect related to wildland fire hazards if it would:

- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or residences are intermixed with wildlands.

Impact Analysis

Handling of Hazardous Materials within 0.25 Mile of a School

The Brookfield Private School is located less than 0.25 mile from work areas at the northern end of the Pocket neighborhood, and the Camellia Waldorf School is located adjacent to work areas at the southern end of the Pocket neighborhood. Therefore, small quantities of hazardous materials such as fuels, oils, and lubricants will be used and stored within 0.25 mile of these two schools. Construction contractors will be required to use, store, and transport hazardous materials in compliance with Federal, State, and local regulations during project construction activities. Thus, the use of these materials during construction will not represent a safety hazard for persons who attend or are employed in either of the above-listed schools. Furthermore, given the temporary nature and short duration of work at each construction segment and each staging area as each reach of the levee improvements are implemented, the proposed project is not expected to result in hazardous air emissions (i.e., TACs) in excess of screening levels. Therefore, this impact will be less than significant.

Possible Exposure of People and the Environment to Existing Hazardous Materials, Including Cortese-listed Sites

The Phase I ESA identified several RECs that could include contaminated soil or groundwater on or near the project site. Thus, there is a potential that earthmoving activities associated with project activities could encounter contaminated soil or groundwater, which could possibly expose people or the environment to hazardous materials. Implementation of Mitigation Measure HAZ-1 will reduce the potentially significant effect associated with possible exposure to hazardous materials to a less-than-significant level because USACE will require testing and investigation to identify and address contaminated sites prior to construction.

Interfere with Emergency Response or Evacuation

The project site extends along the Sacramento River, and as a result, levee improvements and associated staging will be located at the perimeter of developed areas, and will not interfere with emergency response or evacuation. The project will have a less-than-significant effect.

Possible Creation of Wildland Fire Hazards

The proposed project will be implemented in various locations along the Sacramento River and in adjacent and nearby urbanized areas. CAL FIRE (2007, 2008) has determined that

the areas where project-related activities will occur are not within a very high fire hazard severity zone or a State Responsibility Area. The project will have a less-than-significant effect.

3.13.3 Mitigation Measures

The following mitigation measure has been previously adopted (USACE and CVFPB 2021b).

Mitigation Measure HAZ-1: Conduct Phase II Investigations as Needed

The Project Partners would require that Project Areas be tested for contaminants prior to construction. Any hazardous materials found would be disposed of in accordance with all Federal, State, and local regulations at an approved disposal site. Where construction activities would occur in close proximity to sites identified as Recognized Environmental Conditions in the Phase I ESA (HDR 2019), a Phase II site investigation should also be conducted.

Significance after Mitigation

The significant impact related to hazardous wastes and materials will be reduced to a less-than-significant level with implementation of Mitigation Measure HAZ-1, because the Project Partners will test for contaminants, investigate sites with Recognized Environmental Conditions and dispose of hazardous materials in accordance with regulations.

CHAPTER 4 CUMULATIVE EFFECTS

CEQA requires the consideration of cumulative effects of the proposed project refinements, 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" (State CEQA Guidelines Section 15355).

The cumulative effects of the overall ARCF 2016 Project were covered in the ARCF GRR Final EIS/EIR (USACE 2016). The thorough cumulative analysis in the ARCF GRR Final EIS/EIR is incorporated by reference. Because the temporal scope of the analysis was necessarily vague in the ARCF GRR Final EIS/EIR, for the purposes of the proposed project, the temporal scope of the cumulative effects analysis in this Supplemental EIR considers past projects that would continue to affect the Sacramento River Erosion Contract 2 project area in 2023 and 2024 and projects expected to be under construction in 2023 and 2024.

4.1 Past, Present, and Reasonably Foreseeable Future Projects

4.1.1 Projects Contributing to Potential Cumulative Effects

This section briefly describes other similar or related projects, focusing on development, flood-risk reduction, and habitat restoration projects that have similar effect mechanisms and affect similar resources as will the Sacramento River Erosion Contract 2, with project refinements. Although the ARCF GRR Final EIS/EIR identified several of these projects in the cumulative scenario, the descriptions in this section include additional projects and updated timing and schedule information.

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.

Several major past, present, and probable future projects 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 project to properly evaluate the cumulative effects of this action and these other similar projects on the environment.

Lower American River Common Features Project

Based on congressional authorizations in Water Resource Development Act (WRDA) 1996 and WRDA 1999, USACE, CVFPB, and SAFCA have undertaken various improvements to the levees along the north and south banks of the American River and the east bank of the Sacramento River. Under WRDA 1996, this involved constructing 26 miles of slurry walls on the Lower American River. The WRDA 1999 authorization included a variety of additional levee improvements to ensure that the levees could pass an emergency release of 160,000 cubic feet per second (cfs), such as levee raises and levee widening improvements. The WRDA 1996 and 1999 projects were completed in 2014.

American River Common Features 2016 Project

The ARCF 2016 project is scheduled for construction from 2019 through 2025, potentially extending into 2026. 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 (NEMDC) 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 intends to widen the Sacramento Weir. The project will also involve construction of a number of mitigation sites in the area.

In addition to the improvements that are part of the proposed project, the ARCF GRR Final EIS/EIR includes:

- Construction of a seepage and stability berm along Front Street (completed in 2019)
- Seepage and stability improvements to the Sacramento River east levee between downtown Sacramento and Freeport (planned for 2020-2023)
- Erosion protection on the American River (planned for 2021-2023)
- Additional erosion protection improvements on the Sacramento River (planned between 2021 and 2025)
- Improvements to the “East Side Tributaries, including the Magpie Creek Diversion Channel, the east bank of the Natomas East Main Drainage Canal (NEMDC)/Steelhead Creek. Pleasant Grove Creek Canal, and Dry, Robla, and Arcade Creeks (planned for 2023)
- Widening the Sacramento Weir and Bypass, located along the north edge of the City of West Sacramento in Yolo County (planned for 2021 to 2024)

American River Watershed 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, 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 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 Water Resources Reform and Development Act of 2014 (Public Law 113-121). Construction on Reach I and Reach D began in 2018; Reach H began in 2019. Construction on Reach D is anticipated to be complete in the spring of 2020, and construction on Reaches H and I is expected to continue through 2020. Construction in Reach B is anticipated to begin in 2020 and continue into 2021. Reach A is scheduled for construction in 2022-2024, Reaches E, F, and G are scheduled for construction in 2023 and 2024.

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 timeframe 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 (SAFCA 2016).

Sacramento River Bank Protection Project

The mission of the Sacramento River Bank Protection Project (SRBPP) is to repair bank erosion and minimize the risk of flooding along the Sacramento River by evaluating riverside levees and rehabilitating sections of the levees, if necessary. Section 203 of the Flood Control Act of 1960 was the original authority for SRBPP, giving USACE authorization to implement rehabilitation of 430,000 linear feet of levee. Authority to rehabilitate an additional 405,000 lf of levee was added by the 1974 WRDA. In 2007, the WRDA, Pub. L. 110-114, § 3031, 121 Stat. 1113 (2007) (WRDA 2007) added 80,000 lf to SRBPP as a supplement to the 1974 legislation.

West Sacramento General Reevaluation Report

The West Sacramento Project General Reevaluation Report (WSPGRR) determined the Federal interest in reducing the flood risk within the West Sacramento project area. The purpose of the WSPGRR 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: (1) seepage, (2) stability, (3) overtopping, and (4) erosion concerns along the West Sacramento levee system. Potential 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 WSPGRR 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. One levee segment, the Southport setback levee, was constructed as part of the local effort, which includes all of the proposed levee improvements under the study to the Sacramento River on the West Sacramento south basin.

Central Valley Flood Protection Plan of 2017

The Central Valley Flood Management Planning (CVFMP) 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 (proposed project) Improvement areas. The CVFMP Program addresses State flood management planning activities in the Central Valley. The CVFPP is one of several documents adopted by CVFPB to meet the requirements of flood legislation passed in 2007 and, specifically, the Central Valley Flood Protection Act of 2008. DWR adopted the updated CVFPB in 2017, with a focus on Sacramento and San Joaquin Watershed Basin-Wide Feasibility Studies (BWFS), Regional Flood Management Planning, and the Central Valley Flood System Conservation Strategy. Results of these efforts would 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 project, it is important to consider the long-term aspects of the CVFPP in conjunction with this action. The CVFPP is being updated a second time in 2022.

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 Freemont 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 Interstate 80 overcrossing; and raising and strengthening the levees along the entire west side of the Lower Yolo Bypass (DWR 2016).

Lower Elkhorn Basin Levee Setback Project

The Lower Elkhorn Basin Levee Setback (LEBLS) 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 LEBLS project is intended to reduce flooding in the Lower Sacramento River Basin by increasing the capacity of the Yolo Bypass. This increased capacity would be accomplished by constructing a setback levee on the north side of the Sacramento Bypass as an early implementation action for the ARCF 2016 project, and constructing a setback levee in the Lower Elkhorn Basin on the east side of the Yolo Bypass.

The LEBLS project includes 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 LEBLS project will continue in 2022, with the main phase of construction planned to be completed by mid-2024. Construction effects of the LEBLS project have the potential to contribute to cumulative impacts with the proposed project.

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 the project included: the Folsom Dam Auxiliary Spillway, static upgrades to Dike 4, Mormon Island Auxiliary Dam (MIAD) modifications, and seismic upgrades (piers and tendons) to the Main Concrete Dam. The project was completed in fall 2017.

Folsom Dam Water Control Manual Update

The Folsom Dam Water Control Manual (WCM) is being updated 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 would utilize 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 would assess the use of available technologies to enhance the flood risk management performance of Folsom Dam to include a refinement of the basin wetness parameters and the use of real time forecasting.

Further, the WCM Update would evaluate 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 study would result in an Engineering Report as well as a Water Control Manual implementing the recommendations of the analysis.

Folsom Dam Raise

Construction of the Folsom Dam Raise project followed completion of the JFP and the WCM projects. The Dam Raise project includes raising the Right- and Left-Wing Dams, Mormon Island Auxiliary Dam, and Dikes 1-8 around Folsom Reservoir by 3.5 feet. 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 2016 Project, the Folsom Dam Raise Project was fully funded by the Bipartisan Budget Act of 2018. Construction to raise Dike 8 by 3.5 feet was completed in 2020. Dikes 1-7, the Main Dam, the Left Wing Dam, the Right Wing Dam and the Mormon Island Auxiliary Dam are currently in design, with environmental documentation expected to be completed in 2022. Construction of the 3.5-foot raises on these facilities is planned to begin in 2022 and continue into 2025. Construction and construction traffic effects of the Folsom Dam Raise project have the potential to contribute to cumulative impacts with the proposed project.

SAC 5 Corridor Enhancement Project

Caltrans is constructing the SAC 5 Corridor Enhancement Project on I-5 from 1.1 mile 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 project.

Sacramento/Yolo Integrated Corridor Management ICM

Caltrans is constructing the Sacramento/Yolo Integrated Corridor Management (ICM) on Interstate 80 (I-80) from Enterprise Boulevard in the City of West Sacramento to Folsom Boulevard in the City of Folsom on HWY 50. The purpose of this project is to improve safety, more efficiently manage traffic operations, reduce congestion, and decrease peak hours of delay. This project proposes to implement ICM, also known as Connected Corridor, by installing Transportation Management System (TMS) and Intelligent Transportation Systems (ITS) elements. Construction began in 2021.

US Highway 50 Multimodal Corridor Enhancement and Rehabilitation Project

Caltrans is constructing the US Highway 50 Multimodal Corridor Enhancement and Rehabilitation Project will construct High Occupancy Vehicle (HOV) lanes and rehabilitate pavement on US 50 from the US 50/I-5 Interchange (PM L0.6) to the US 50/Watt Avenue Interchange (PM R5.3) for a total of 15 lane miles. The purpose of this project is to reduce congestion and replace the existing Portland Cement Concrete (PCC) pavement, reduce maintenance crew's exposure to live traffic, and reduce maintenance expenditures. Construction is scheduled to occur between April 2020 and December 2024.

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-orientated urban district for the City of West Sacramento, along the west bank of the Sacramento River. A number of 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 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 project.

Sacramento Railyards Project

The Railyards 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, 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 planning entitlement for the Sacramento Railyards. The project includes housing units, retail space, office space, a medical campus, hotels, parks, and a soccer stadium (City of Sacramento 2016). Construction, road construction, and construction traffic associated with the Railyards project have the potential to contribute to cumulative impacts with the proposed project.

Delta Shores Development Project

Delta Shores is an approximately 800-acre master planned development that will include an estimated 1.3 million square feet of planned retail and commercial uses, and an estimated 5,200 residential units at different housing densities. A majority of the Delta Shores land is located east of I-5, north and south of Cosumnes River Boulevard, east of Freeport Boulevard and north of the SRCSD Wastewater Treatment Plant Bufferlands. The Beach Lake Levee (operated and maintained by SAFCA) is adjacent to a portion of the Delta Shores southern property line (east of I-5). Approximately 100 acres of the Delta Shores land is located on the west side of I-5 and adjacent to the Sacramento River east levee. In the Delta Shores lands west of I-5, medium- and high-density residential housing will be developed on the north side of

Cosumnes River Boulevard while medium- and low-density residential housing will be developed on the south side of Cosumnes River Boulevard. Neighborhood parks are programmed east of and adjacent to Freeport Boulevard.

Cosumnes River Boulevard was recently extended by approximately 3.5 miles (from Franklin Boulevard to Freeport Boulevard), and a new I-5 interchange was constructed in order to provide regional connectivity from HWY 99 to I-5 as well as allow access for future Delta Shores residential and commercial development. The Cosumnes River Boulevard extension and I-5 interchange improvements were completed in 2015. Construction on the regional shopping center located in the SE quadrant of the I-5 interchange and Cosumnes River Boulevard began in 2016, and the regional shopping center opened in 2017. Additional improvements anticipated to commence construction include infrastructure and roadway construction north of Cosumnes River Boulevard, as well as additional commercial construction north and south of Cosumnes River Boulevard on the east side of I-5. Construction traffic associated with 2023 and 2024 improvements at Delta Shores have the potential to contribute to cumulative impacts with the proposed project. It is anticipated that additional infrastructure and home construction will occur on the east and west sides of I-5 in future years.

4.2 Cumulative Effects Analysis

4.2.1 Geological Resources

Construction activities associated with most of the related projects would involve extensive grading and earthmoving activities, thereby exposing soil to erosion from wind in summer and from rainfall during storm events. If uncontrolled, suspended sediment from stormwater runoff could enter adjacent water bodies and result in increased turbidity. However, the proposed project refinements along with each related project expected to disturb 1 acre of land or more are required by law to comply with NPDES discharge permits from the Central Valley RWQCB, which require preparation of a SWPPP and implementation of erosion control BMPs. Therefore, there would be no significant cumulative effect related to construction-related erosion and the project refinements would not contribute to a significant cumulative effect.

If not addressed, erosion-related levee failures could contribute significant volumes of sediment and material to the stream channels which could alter flow patterns and potentially destabilize other levees outside the Project Area. However, the proposed project and the related levee projects would implement erosion control measures that would reduce the risk of levee failure. Therefore, the proposed project and the related projects would not cumulatively increase the risk of levee failure resulting in an overall cumulatively beneficial project.

The proposed project and related projects would be designed based on the results of detailed geotechnical engineering studies and are required to comply with standard engineering practices for levee and/or architectural design. In addition to compliance with CVFPB standards, levee design and construction must be in accordance with EM 1110-2-1913 Design and Construction of Levees (USACE 2000), the primary Federal standards applicable to levee improvements. In addition, ER 1110-2-806, Earthquake Design and Evaluation for Civil Works Projects (USACE 2016), would also apply to project design and construction. Therefore, it is assumed that the design and construction of all levee modifications would meet or exceed

applicable design standards for static and dynamic stability, seismic ground shaking, liquefaction, subsidence, seepage, and expansive soils. The related development projects must comply with the California Building Standards Code, which incorporates specific requirements for engineering and construction that are designed to reduce damage from seismic ground shaking, liquefaction, subsidence, seepage, and expansive soils to the maximum extent feasible. Therefore, the proposed project would not result in cumulatively considerable incremental contribution to a significant cumulative effect related to seismicity and soils.

Most of the related projects would entail earthmoving activities in the Riverbank and/or Modesto Formations, which are considered to have high paleontologically potential (SVP 2010: 1). However, the proposed project activities will include excavation only in Holocene-aged sediments (i.e., less than 11,700 years old) which, because of their geologically young age, are considered to have low paleontological potential (SVP 2010: 2). While some of the related projects, such as the CVFPP, NLIP, and the Delta Shores projects contain mitigation measures to protect paleontological resources, the other related projects may not. Therefore, some of the related projects may result in significant effects to unique paleontological resources. Future ARCF 16 projects proposed along the Sacramento River East Levee and the American River would also take place in the Riverbank Formation. However, the presence of unique paleontological resources is site-specific, and a low potential exists that any project, including the proposed project, would encounter unique, scientifically important fossils. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative effect related to damage to or destruction of unique paleontological resources.

4.2.2 Water Quality

This project is the only ARCF project on the Sacramento River that includes bank protection placement below the OHWM. Some projects, such as the West Sacramento GRR and the SRBPP, include levee raises, flood walls, and bank protection. The West Sacramento GRR and Lower Elkhorn Basin Levee Setback Project include construction of new setback levees. Related projects, including the Sacramento River East Levee Contracts 3 and 4, Lower American River Contract 1, SRBPP, and the West Sacramento GRR, could be under construction during the same timeframe as the proposed project. If construction occurs during the same timeframe, 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. Short-term impacts as a result of the proposed project would be mitigated to less than significant with the implementation of mitigation measures described in Section 3.3, “Water Quality.” All projects would be required to comply with the NPDES Construction General Permit requirements of the RWQCB, CWA, and overall water quality would be required to meet the Basin Plan objectives. The proposed project would require compliance with the CWA, Sections 401 and 404 before work starts below the OHWM. The proposed project would not result in a cumulatively considerable incremental contribution to significant cumulative effects related to water quality.

4.2.3 Vegetation and Wildlife

Project implementation has the potential to contribute to the loss or degradation of sensitive habitats, riparian habitats, waters of the United States, waters of the State, and forestland. Similar anticipated adverse effects on habitats are associated with the flood-risk reduction and development projects, including Sacramento River Bank Protection Project, Lower Elkhorn Basin Levee Setback Project, West Sacramento GRR, I Street Bridge Replacement Project, Folsom Dam Raise, and other ARCF 16 projects; and the 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 project and the related 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 project on sensitive habitats in accordance with the requirements of the Federal ESA and CESA and other regulatory programs, such as CWA Sections 401 and 404. The other projects would have similar requirements to avoid, minimize, and mitigate for impacts on vegetation and wildlife therefore, reducing impacts. Although the proposed project’s temporary impacts would be significant, the proposed project 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 fish and their habitats would be associated with Sacramento River Bank Protection Project, West Sacramento GRR, I Street Bridge Replacement Project, future ARCF 16 projects, and the removal of high-hazard vegetation by levee maintaining agencies in the Sacramento area and surrounding region. Such projects would generally continue to adversely impact fish species. Most potential adverse effects of the proposed project and the related levee projects related to fish would be associated with construction disturbances of fish and their habitats however, permanent loss of habitat would result from some of the individual levee improvement projects. These adverse effects could contribute to species decline and losses of habitat which, due to historical impacts caused by other projects, have led to the need to protect other species under the ESA and California Endangered Species Act (CESA). The completion of the Folsom JFP and the new Water Control Manual Update for the Folsom Dam would likely improve conditions for fish species on the American River and subsequently the Sacramento River because of the ability to release colder water from deeper in the lake and better control outflows. Implementation of Mitigation Measures described in Section 3.5, “Fisheries,” would reduce or avoid the effects of the proposed project in accordance with consultation with USFWS and NMFS. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to significant cumulative adverse effects on fisheries.

4.2.5 Special-Status Species

Project implementation has the potential to adversely affect special-status species such as Chinook salmon, steelhead, green sturgeon, delta smelt, Swainson's hawk, other nesting birds, and bats. Similar potential for adverse effects on special-status species and their habitats would be associated with the flood-risk reduction projects and the development projects, including Sacramento River Bank Protection Project, Lower Elkhorn Basin Levee Setback Project, West Sacramento GRR, I Street Bridge Replacement Project, Folsom Dam Raise, ARCF 16 projects, and the removal of high-hazard vegetation by levee maintaining agencies in the Sacramento area and surrounding region. Such projects would generally continue to adversely impact special-status species. Most potential adverse effects of the proposed project and the other levee projects to special status species would be associated with construction disturbances of these species and their habitats however, permanent loss of habitat would 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 ESA and CESA. Implementation of Mitigation Measures described in Section 3.6, "Special Status Species," would reduce or avoid the effects of the proposed project in accordance with the requirements of the ESA and CESA. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to significant cumulative adverse effects on special-status species.

4.2.6 Cultural and Tribal Cultural Resources

Implementation of the proposed project, other flood-risk reduction projects, and development projects considered in this cumulative analysis, have the potential to contribute to the loss or degradation of known and unrecorded archaeological resources, known Tribal Cultural Resources, known and unknown human remains, and known and unknown historic-period archaeological resources. Most potential effects of the proposed project and other related projects to cultural resources would be associated with construction disturbances of archaeological sites, Tribal Cultural Resources, 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 Section 3.7, "Cultural and Tribal Cultural Resources," would reduce or avoid the effects of the project on known resources and on unknown archaeological resources and human remains that could potentially be discovered during project construction. However, the project could contribute to a cumulatively significant effect.

4.2.7 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 (SMAQMD 2014). Several other construction projects are expected to occur simultaneously in the SVAB during the planned construction period for the proposed project. The related projects have the potential to generate construction-related emissions that individually exceed SMAQMD's threshold of significance. However, all construction projects in the SMAQMD, including the proposed project are required

to offset emissions that have the potential to negatively affect air quality in the SVAB 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 project is part of the larger ARCF 16 Project, which has been determined meet the requirements of general conformity with the provisions of the Clean Air Act (CAA) through payment of fees to offset NOx emissions. Although the ARCF 16 Project as a whole will exceed General Conformity *de minimis* thresholds in 2023 and 2024, the impact will be reduced to a less-than-significant level after implementing mitigation measures AIR-1 through AIR-5. As discussed in Section 3.8, "Air Quality," construction of the proposed project will not result in significant impacts individually to air quality and would not exceed Federal General Conformity *de minimis* thresholds after mitigation in either air basin.

4.2.8 Climate Change

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 3.9, "Climate Change," includes the analysis of both the project and cumulative effects. The proposed project and the related projects would result in the generation of GHGs, in proportion with the size of each individual project, amount and time of operation of construction equipment, and distances traveled. However, the proposed project and other projects stated which generate GHG emissions in excess of threshold levels would be required to implement the mitigation measures set forth in their respective CEQA/NEPA documents to reduce emissions and/or purchase carbon offsets. Most of the other related projects are flood risk management projects. By implementing these projects, the agencies would be reducing the potential future emissions associated with flood fighting and future emergency actions. The I Street Bridge Replacement would allow for safe pedestrian and bicycle use and provide a future light rail extension therefore reduce GHG emissions due to less vehicle traffic compared to the current bridge. The proposed project would be consistent with statewide climate change adaptation strategies. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative effect related to climate change.

4.2.9 Noise

A cumulative effect might occur if construction activities associated with any of the related project(s), such as the West Sacramento GRR and other ARCF projects, were to occur within 500 feet of the proposed project's construction activities, or if the construction activities of other projects were to overlap with the construction activities of the proposed project. At its closest point, the portion of the Delta Shores project area that is still under construction would be approximately 5 miles southeast of the project site. Therefore, the Delta Shores project is located too far away to combine with the proposed project's construction noise or vibration effects. Furthermore, although related projects could require construction that exceeds the respective local City or County noise ordinances, the proposed project would limit noise-generating activities to the hours when the City of Sacramento exempts construction noise. Therefore, the proposed project is not expected to result in a cumulatively considerable

contribution to local, State, or Federal noise ordinance standards caused by construction equipment or increased traffic noise.

4.2.10 Recreation

The proposed project, along with the related projects, may result in temporary closure of recreational facilities, potential damage to recreational facilities, and temporary diminishment of recreational experiences at nearby parks during construction. Implementation of Mitigation Measures described in Section 3.11, "Recreation," would reduce the proposed project's effects to a less-than-significant level. Due to the temporary nature of the construction effects and the likelihood that any access restrictions or degradation to the quality of recreational experiences would last for longer than 3–6 months in any location, the proposed project's effects on local recreation are not anticipated to overlap with effects of other related projects. The nearby Delta Shores development project includes internal parks for use by residents which aids in alleviating some temporarily unavailable recreation opportunities during levee construction. The construction of the I Street Replacement Bridge would provide more recreation opportunities by providing more river access on both sides of the river and provide safer pedestrian and bicycle routes than the current I Street Bridge. Consequently, cumulative effects related to recreation resources would be less than significant and the proposed project would not result in a cumulatively considerable effect related to short-term, temporary changes in recreational opportunities during project construction activities.

4.2.11 Visual Resources

Construction crews, equipment, and barges would be visible to residents adjacent to local streets and to residences adjacent to the work site. In addition, construction would be visible to recreationists in the Sacramento River and potentially along portions of the Sacramento River Parkway bicycle and pedestrian trail. However, construction would be temporary, occur away from other projects, and as construction would proceed along the levee in a linear fashion therefore, the views of construction crews, equipment, and haul trucks would be of short duration. At the completion of construction activities, the levees, staging areas, barges, and borrow sites for both the proposed project and the related levee projects would be restored to or substantially similar to pre-construction conditions. There would be no significant cumulative degradative effect or adverse changes related to the short- or long-term visual character of scenic vistas.

4.2.12 Public Utilities and Service Systems

The proposed project, future ARCF 2016 projects along the Sacramento River east levee and the American River, and all of the other related levee projects, in addition to Delta Shores and other development 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 project will not result in a cumulatively considerable incremental contribution to a significant cumulative effect related to potential disruption of utility services.

Temporary construction activities associated with the proposed project and related projects in the Sacramento Region would generate organic and non-organic solid waste. Waste material that is not suitable for disposal onsite or at the Railyards would likely be disposed of in the Yolo County Central, Kiefer, or L and D Landfills. These landfills currently provide solid waste disposal services to municipal and commercial customers and provide construction demolition and debris disposal in Sacramento County. These landfills have sufficient permitted capacity to accommodate solid waste disposal needs for Sacramento County, including the disposal needs of the proposed project and the related projects. Therefore, the proposed project will not result in a cumulatively 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 project 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 project and all of 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 site. These materials would not be used in quantities that pose a hazard to schools within 0.25 mile of construction sites. Thus, the project will 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 existing hazardous materials sites or from accidental rupture of petroleum or natural gas pipelines 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, “Hazardous Wastes and Materials,” will minimize potential exposure to unknown hazards and hazardous materials during implementation of the proposed project. Therefore, the proposed project will not result in a cumulatively 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 project, with a relatively low risk of wildland fire. Therefore, there would be no significant cumulative impact related to wildland fire risk, and the proposed project will not result in a cumulatively considerable incremental contribution to a significant cumulative effect related to wildland fire hazards.

4.3 Growth-Inducing Effects

Because the proposed project would not involve construction of housing, the proposed project with refinements would not directly induce growth. Project-related construction activities would generate temporary and short-term employment, but these construction jobs are anticipated to be filled from the existing local employment pool and will not indirectly result in a population increase or induce growth by creating permanent new jobs. Furthermore, the project will not involve constructing businesses or extending roadways or other infrastructure that could indirectly induce population growth. Consequently, the proposed project will not induce growth leading to changes in land use patterns, population densities, or related impacts on environmental resources.

Levee improvements will benefit areas identified for future growth anticipated in the vicinity of the Sacramento River east levee in the City of Sacramento. Local land use decisions are within the jurisdiction of the City of Sacramento, which has adopted a general plan consistent with State law. The City of Sacramento 2035 General Plan (City of Sacramento 2015) provides an overall framework for growth and development in the City. The City of Sacramento 2013–2021 Housing Element (City of Sacramento 2013) of the City General Plan identifies vacant parcels zoned for multifamily dwelling units in the vicinity of Riverside Boulevard and 43rd Avenue, and vacant parcels zoned for single-family dwelling units are identified within the Pocket and Little Pocket areas in the vicinity of Pocket Road.

The levee improvements will 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 General Plan. Growth throughout the project area has already been planned for as part of the City of Sacramento 2035 General Plan (City of Sacramento 2015). The proposed project will not allow additional growth to occur other than what has already been planned, nor will it change the locations where this growth is planned to occur. Consequently, implementation of the proposed project will not affect current and/or projected population growth patterns within the City of Sacramento as already evaluated and planned for in the City General Plan and, therefore, will not be growth-inducing. The proposed project will mitigate flood risks by improving levees to meet engineering standards associated with the National Flood Insurance Program; it will not alter protection for the 100-year event nor does it transfer any such risk to other areas. The proposed project will not directly or indirectly support development in the base floodplain.

4.4 Irreversible and Irretrievable Commitment of Resources

The discussion of irreversible and irretrievable commitments of resources in the ARCF GRR Final EIS/EIR adequately describes the effects of the Sacramento River Erosion Contract 2 with refinements.

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This Supplemental EIR was prepared by CVFPB with assistance from DWR, GEI Consultants, Inc., and USACE, Sacramento District.

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Part 2

Draft Supplemental Environmental Assessment

American River Watershed Common Features
Water Resources Development Act of 2016 Project
Sacramento River Erosion Contract 2

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List of Abbreviations and Acronyms

AALWSE	Average Annual Low Water Surface Elevation
ARCF	American River Common Features
BMP's	Best Management Practices
BO	Biological Opinion
C#	Contract Number
CAA	Clean Air Act of 1963 as amended
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CVFPB	Central Valley Flood Protection Board
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act of 1972
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
ERO	Erosion
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act of 1958
GPS	Global Positioning System
GRR	General Reevaluation Report
IWM	Instream Woody Material
LAR	Lower American River
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NMFS	National Marine Fisheries Service

NOA	Notice of Applicability
NOx	Nitrous Oxides
NPDES	National Pollutant Discharge Elimination System
OHWM	Ordinary High Water Mark
PM	Particulate Mater
Proposed Action	Action Alternative
RHA	Rivers and Harbors Act of 1899 as amended
SAFCA	Sacramento Area Flood Control Agency
SCH	State Clearinghouse
SEA	Supplemental Environmental Assessment
SEIR	Supplemental Environmental Impact Report
SHPO	State Historic Preservation Officer
SMAQMD	Sacramento and Yolo-Solano Air Quality Management Districts
SR	Sacramento River
SREL	Sacramento River East Levee
SWPPP	Stormwater pollution Prevention Plan
USACE	US Army Corps of Engineers
USC	United States Code
USFWS	US Fish and Wildlife Service
VELB	Valley Elderberry Longhorn Beetle
WQC	Water Quality Certification
WRDA	Water Resources Development Act
YBCU	Western Yellow-billed Cuckoo

1 Introduction

1.1 Summary

The Sacramento metropolitan area is one of the most at-risk regions for flooding in the United States. To address this risk, the American River Watershed Common Features (ARCF) project, originally authorized in the Water Resources Development Act (WRDA) of 1996, was conceived to provide a portfolio of flood risk reduction measures to address under seepage, instability, and erosion along the levees of the Lower American River and the Sacramento River near the City of Sacramento, California. The U.S. Army Corps of Engineers (USACE) completed the ARCF General Reevaluation Report (GRR) Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) in February 2016 (2016 FEIS/EIR). The 2016 FEIS/EIR analyzed the anticipated impacts of the entire ARCF Project. Congress authorized the reevaluated ARCF Project in the WRDA of 2016.

Sacramento River Erosion Contract 2 is the second of four contracts within the ARCF 2016 program to address erosion risk along a 10-mile section of the Sacramento River East Levee. A Supplemental Environmental Assessment/Supplemental Environmental Impact Report (SEA/SEIR) was completed in June 2021 for Sacramento River Erosion Contract 1. Sacramento River Erosion Contracts 3 and 4 are pre 35% and are both anticipated to go to construction in 2024.

This Supplemental Environmental Assessment (SEA) is written with 65% designs and tiers off the 2016 FEIS/EIR and the Contract 1 SEA mentioned above. The 2016 FEIS/EIR analyzed the basic erosion protection measures that comprise the No Action alternative of this SEA. The Action Alternative (Proposed Action) of this SEA consists of those elements of Contract 2 that were not fully designed when the 2016 FEIS/EIR was completed. The Proposed Action analyzes 65% designs for staging areas, haul/access routes, utility replacement at SUMP 63, bush layering and tiebacks and key-ins. Tiebacks are used to anchor the revetment to the ground and are often used to prevent flanking. Additional information on all five elements is described in section 2.2.

This SEA evaluates the expected environmental effects of the Proposed Action on the following five resources: Air Quality, Water Quality, Vegetation and Wildlife, Federal Special Status Species and Fisheries. The analysis in this document indicates that the Proposed Action would cause no adverse effects of greater magnitude or duration than those analyzed in the 2016 FEIS/EIR. As described in 40 Code of Federal Regulations (CFR) 1508.1(l), a Finding of No Significant Impact (FONSI) may be prepared when an action would not have a significant effect on the human environment and for which an environmental impact statement will not be prepared. Based on this evaluation and the CFR definition, the Proposed Action is anticipated to merit a FONSI.

1.2 Project Area

The project area is in the City of Sacramento, California, along the east bank of the Sacramento River between the confluence of the American River and the City of Freeport. The project area includes 3.4 miles of the 10 miles authorized in the 2016 FESI/EIS, as follows: levee segments 4, 9-11, 18, 19, 24-27 and 29, as well as SUMP 63 erosion protection The levee segment, approximate river miles and site number are shown in Table 1. Figure 1 below show the location of each segment and Overview Maps in Appendix 1 show each segment and work area in detail.

Table 1: Summary Table of River Segments and Approximate River Mile

Sites	1	2	3	4	5	6
Segments	4	9, 10, 11	18, 19	24	25, 26, 27	29
River Miles	58.0-58.6	55.4-56.1	53-53.7	51.1-51.3	50.9-51.2	49.2-49.8

1.3 Background

The 2016 ARCF GRR broadly identified ways and locations to reduce flood risk to infrastructure and lives in the metropolitan Sacramento area. Unavoidably the preferred alternative analyzed in the 2016 FEIS/FEIR lacked refinements that had yet to be specified, including haul/access routes, mitigation sites, coffer dams and an accurate estimate of the number of barge trips needed to deliver quarry stone to project sites. As project designs have reached the 65% milestone, numerous supplemental EAs and EISs have been prepared to “fill the gap” between the somewhat conceptual project plan analyzed in the 2016 FEIS/FEIR and the 65% construction designs. The analysis of the Sacramento River Contract 2 construction design (the Proposed Acton) provided in this SEA closes one of these ‘gaps’ in order to ensure full project compliance with NEPA.

1.4 Authority

The American River Watershed Common Features Project was authorized by Section 101(a)(1)(A) of the Water Resources Development Act (WRDA) of 1996 (Public Law 104-303), as amended by Section 366 of WRDA 1999 (Public Law 106-53), Section 129 of the Energy and Water Development Appropriations Act, 2004 (Public Law 108-137), and Section 130 of the Energy and Water Development and Related Agencies Appropriations Act, 2008 (Division C of Public Law 110-161); by Section 7002(2) of the Water Resources Reform and Development Act of 2014 (Public Law 113-121). and by WRDA 2016, Pub. L. No. 114-322 § 1322, also known as the Water Infrastructure Improvements for the Nation Act (WIIN Act). In July 2018, Congress granted USACE construction funding to complete urgent flood control projects under the Bipartisan Budget Act of 2018 (Public Law 115-123).

1.5 Project Purpose

The purpose of the 2016 GRR was to make the reader aware of reasonable alternatives and the environmental effects from the efforts to reduce flood risk within the Sacramento metropolitan area; as well as determine if the proposed action is in compliance with NEPA. The work encompassed by Sacramento River erosion Contract 2 would contribute to flood risk reduction by applying erosion protection measures to make the Sacramento River’s east bank and levee

more impervious to the effects of increased currents and water volumes, reinforcing levee segments at highest risk for erosion within the project area.

1.6 Project Need

The Sacramento Metropolitan area is one of the most at-risk areas for flooding in the United States. Stormwater flows in the American and Sacramento Rivers may stress the network of levees protecting the study area to the point of possible levee failure. The consequences of levee failure would be catastrophic since the area of likely inundation is highly urbanized and it is estimated that floodwaters could reach 20 feet in depth.

Bank protection measures would be applied to levee segments that were identified by models and assessments as most vulnerable to failure with a focus on preventing wave erosion from deteriorating the river's steep banks in order to protect the levee prism. In areas that the levee prism is exposed, revetment would be placed above the water line to prevent further levee degradation. Revetment thickness and construction measures are described in section 2.1 and 2.2 below.

1.7 Purpose of the Supplemental Environmental Assessment

This document evaluates the anticipated environmental effects of the Proposed Action and the No Action Alternative and identifies measures to avoid or reduce any adverse environmental effects of the Proposed Action to a less-than-significant level, where practicable. This SEA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA). This SEA fully discloses the reasonably foreseeable environmental effects of the Proposed Action to the public.

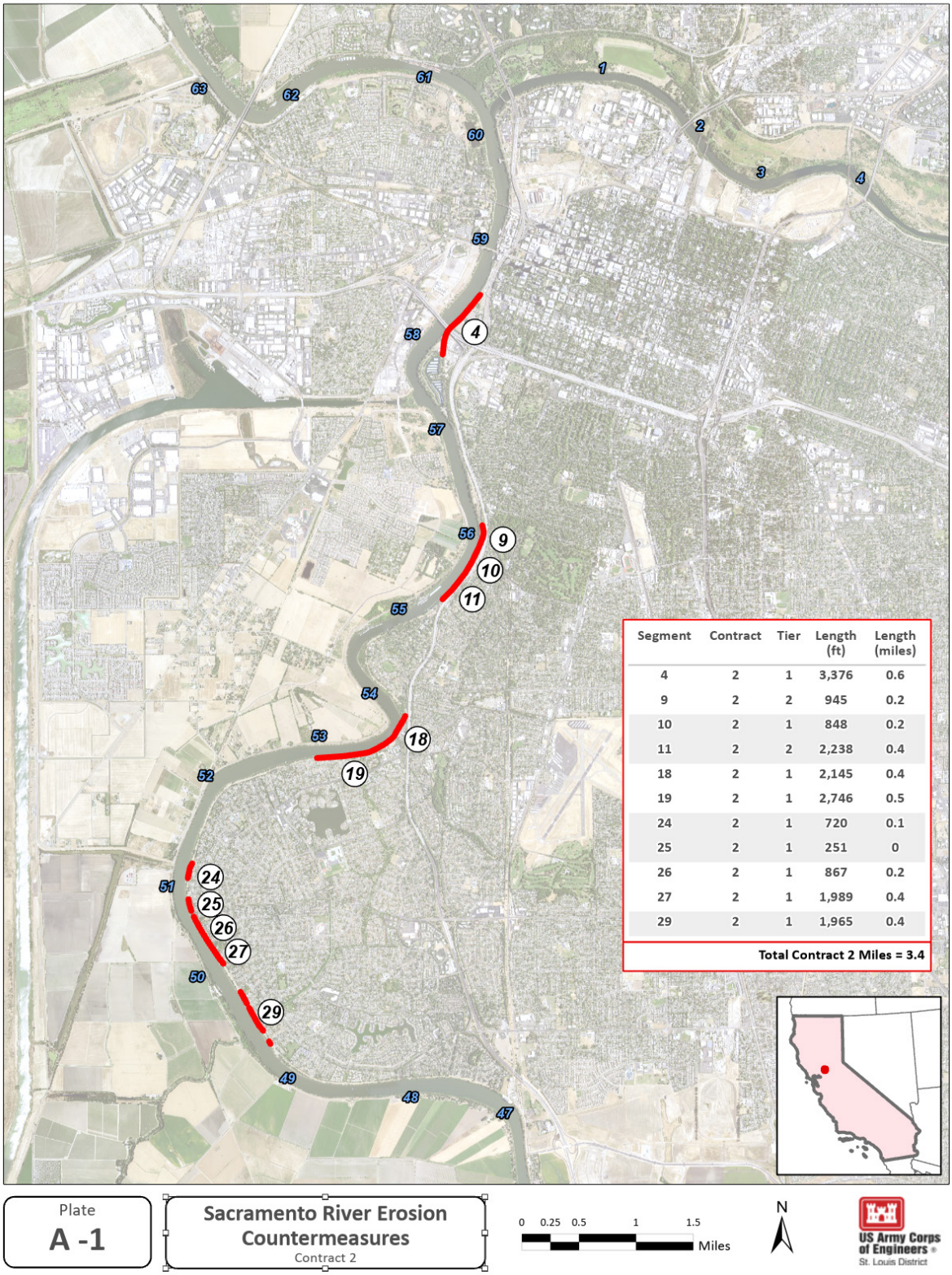

Figure 1: Project Sites for Sacramento River Erosion Contract 2

1.8 Related Documents

The ARCF 2016 program is a large-scale project designed to reduce flood risk within the Sacramento Metropolitan Area. Figure 2, below, provides a schematic overview of the ARCF elements, contracts and their related NEPA documents, showing how the various parts fit together. Project-related NEPA studies focused on Sacramento River elements are listed below:

- December 2015 (revised May 2016), American River Watershed Common Features General Reevaluation Report, Final Environmental Impact Statement/Environmental Impact Report (2016 FEIS/EIR)
- July 2016, Final Environmental Impact Report, 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.
- February 2019, Final Supplemental Environmental Assessment/Initial Study, ARCF Seepage Stability Berm, Reach D Contract 1
- June 2019, Final Supplemental Environmental Assessment/Initial Study, ARCF 2016 Project Beach Stone Lakes Mitigation Site.
- November 2019, Supplemental Environmental Assessment/Environmental Impact Report American River Watershed Common Features, Water Resources Development Act of 2016 Project, Sacramento River East Levee Contract 1 (SREL C1). Prepared by GEI Consultants.
- October 2020, Supplemental Environmental Assessment/Environmental Impact Report American River Watershed Common Features, Water Resources Development Act of 2016 Project, Sacramento River East Levee Contract 2 (SREL C2).
- May 2021, Final Supplemental Environmental Impact Statement/ Environmental Impact Report, American River Watershed Common Features, Water Resources Development Act of 2016 Project Sacramento Weir Widening. (State Clearinghouse Number 2020070575)
- June 2021, Final Supplemental Environmental Assessment/ Supplemental Environmental Impact Report, American River Watershed Common Features, Water Resources Development Act of 2016 Project, Sacramento River Erosion Contract 1.
- August 2021, Supplemental Environmental Assessment/Environmental Impact Report American River Watershed Common Features, Water Resources Development Act of 2016 Project, Sacramento River East Levee Contract 3 (SREL C3).

1.9 Decision Needed

The District Engineer, Commander of the Sacramento District, must decide whether the Proposed Action qualifies for a Finding of No Significant Impact (FONSI) under NEPA guidelines, or whether potentially significant effects that were not considered in the 2016 FEIS/EIR are anticipated and therefore a Supplemental EIS must be prepared.

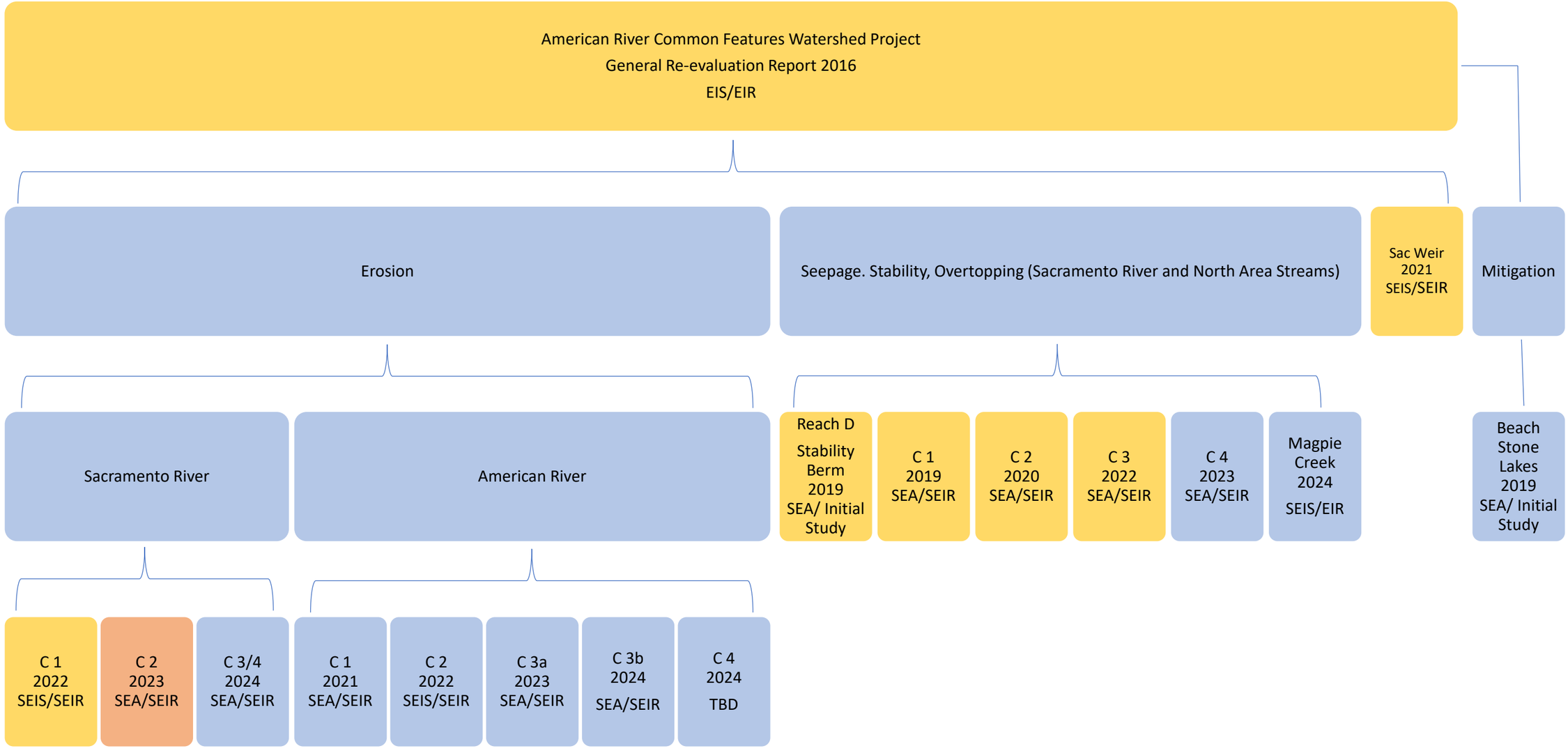

Figure 2: Overview of all ARCF Elements, Contracts and Related NEPA/CEQA Documents. This Supplemental EA is orange; related documents are shown in yellow

2 Alternatives

2.1 No Action Alternative

The No Action alternative assumes that the erosion work identified as Alternative 2 in the 2016 ARCF FEIS/EIR, along with the Proposed Actions planned for Sacramento River Seepage, Stability and Overtopping Contracts 1-3, the Sacramento Weir Widening, and Sacramento River Erosion Contract 1 have been constructed.

The No Action Alternative has two primary design objectives: to prevent bank erosion, and to provide riverbank resistance to wave wash. Designs include a launchable rock trench to provide resilience against river-bed scour. Generally, the top of bank protection design was chosen to be the top of the Wake Zone +2'. This elevation was chosen because flows above this level are exceeded only 15% of days throughout any given year, and the duration of those events are short and unlikely to cause significant scour. Velocities, even during the design event are low and continuous rock protection up the slope is unnecessary. A secondary objective is to reduce impacts to habitat, as well as provide habitat mitigation wherever possible.

Table 2: Included Levee Improvement Summary Table

Site	Segment	Begin Station	End Station	Length (ft)	Length (miles)
1	4	1082+00	1116+00	3,376	0.6
.2	9, 10, 11	1197+50	1218+00	2,050	0.4
3	18, 19,	1320+00	1369+00	4,891	0.9
4	24	1452+00	1459+00	720	0.1
5	25, 26, 27	1469+00	1503+50	3,107	0.6
6	29	1518+00	1546+50	1,965	0.4

- Rock Bank Protection details - A 3.5-foot-thick lens of launchable Grade C quarry stone with a one-foot tolerance will be placed below the water surface to protect the bank from scour and erosion. A 2.5-foot-thick lens of soil-rock mix will be placed above the water surface to protect the bank from wave wash generated by boat wakes and wind waves. Transitions to existing grade will be constructed at the upstream and downstream ends of each site for both soil-rock mix and quarry stone measures. Figure 2 shows a generic bank stabilization design.

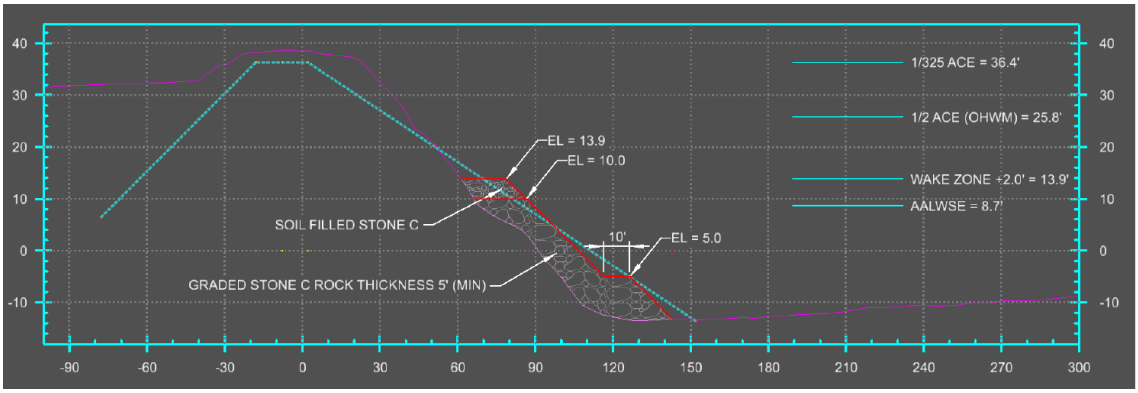

Figure 2: A generic bank stabilization design.

- Barging material – Rock within the channel, both below and above the water line, would be placed by an excavator located on a barge. Construction of each site would require one operational barge, with an excavator, and one stockpile barge to hold the rocks.
- Tree Clearing would be done using small equipment, during the appropriate work window before construction begins, Ground clearing/preparation would be completed as necessary at the beginning of construction, by equipment stationed on the operational barge. Replanting would be done once construction is completed, from the levee. None of these actions would require the use of staging areas, nor the closure of the top of levee. The haul route would be along the levee crown and would not be utilized by heavy equipment, flaggers would be present to ensure safety for both the pedestrians and the vegetation crews. During design refinement, tree removal was avoided to the maximum extent possible to reduce habitat and visual effects impacts.
- Planting Bench – Planting benches vary in width and elevation to allow for planting of native riparian species. The soil filled benches can be located at various elevations to provide suitable habitat for the targeted native riparian species. Table 3 shows the segments, beginning and end point of each bench included in C2. Figure 3 shows a generic planting bench configuration that has been used to inform the site-specific designs.

Table 3: Planting Bench Summary

Site	Segment	From	To	Length, (ft)	Surface Area, (ft^2)	Surface Area, acre
2	9, 10	1202+64	1214+64	1200.0	26365.2	0.6
2	9	1204+31	1207+41	310.0	4986.7	0.1
3	19	1343+14	1349+05	591.0	12147.8	0.3
5	25, 26	1469+46	1474+41	495.0	19702.8	0.5
5	26	1477+68	1482+56	488.0	15946.2	0.4
5	27	1484+10	1493+28	918.0	21204.0	0.5
5	27	1484+21	1493+15	894.0	13762.5	0.3
6	29	1519+44	1524+48	504.0	10440.7	0.2
6	29	1527+12	1527+85	73.0	1260.9	0.0
6	29	1545+15	1546+41	126.0	3002.7	0.1

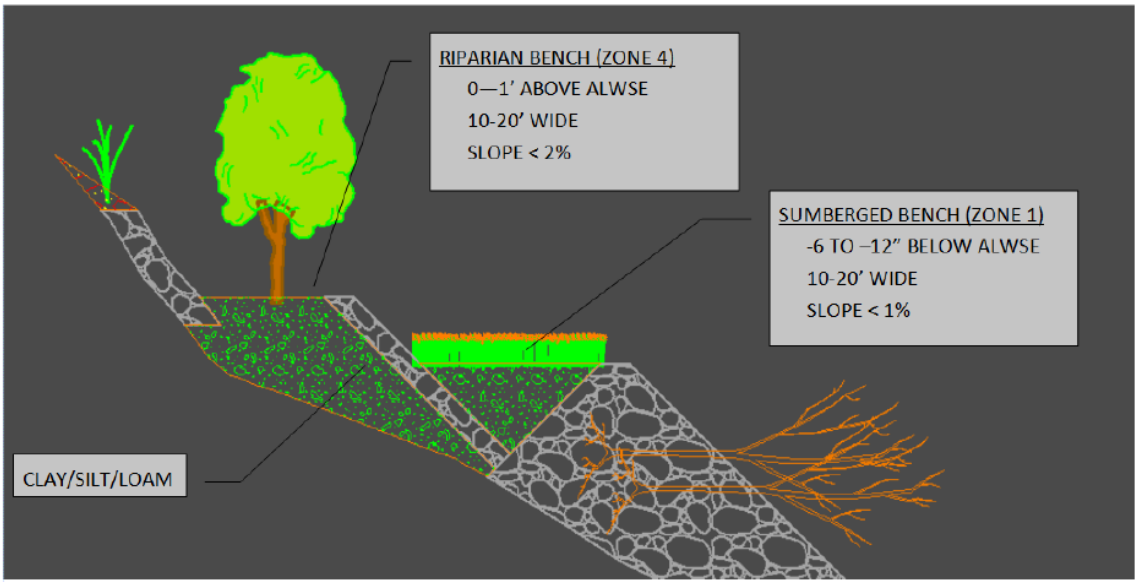

Figure 3: A generic planting bench design.

- In-stream Woody Material (IWM) – In-stream Woody Material would be placed below the planting bench and along the rock revetment, where practical, to create in-stream cover for fisheries year-round. The designs include IWM at a rate between 40-80% of the impacted length in accordance with the GRR and the 2021 National Marine Fisheries Service Biological Opinion.

- Utility Replacement of Sump 63 – A City of Sacramento drainage pump station, Sump 63, is located adjacent to the levee between Stations 1360+00 and 1361+00, in Segment 19, site 3. The pump station discharges through four 24-inch diameter steel buried pipelines, which run up and over the levee and have the outlets at the riverbank at about El. 5.5' NAVD 88 datum, (approximately 30 vertical feet below the levee crown). A 25'x25' sloping concrete slab revetment provides erosion protection for the riverbank

at the pipe outlets. On the waterside edge of the levee crown there is a buried concrete vault that houses a siphon breaker valve for each of the pipelines. SREL C2 SEA covers the degrade of the levee, the removal of the four discharge pipes from the land side to just above the waterside toe of the levee at about Elevation 22 feet, valve vault (which are located within the levee degrade prism), and subsequent reconstruction of the pipelines and vault once the cutoff wall has been installed.

2.2 Proposed Action

Contract 2 features to be installed would total 3.4 miles of the 10 miles authorized for erosion protection along the Sacramento River and is the second contract in a set of three. The Proposed Action encompasses five ARCF project elements within the Contract 2 footprint that are different or new since the 2016 FEIS/EIR was finalized: the location of haul/access routes and staging areas, two revised methods for placement of rock revetment, a 65% design for removing and replacing municipal drainage systems at Sump 63, and a refined estimate of project-related barge traffic on the Sacramento River and through the Delta. Each element is summarized below:

- Access/Haul Routes and Staging Areas- The 2016 FEIS/EIR did not identify access routes or haul routes. It indicated that haul routes would consist of existing roads, and along the levee maintenance roads. Contractors may need access to the parking lot and boat launch at Miller Park; however, Miller Park will not be closed to public use. The construction work at SUMP 63 would need to be completed from the land side of the levee, and construction crews would need access, haul routes and staging areas for this activity. Access, haul routes, and staging areas for the SUMP 63 replacement work would require the closure of the Sacramento River Bike Trail from approximately River mile 49.5 to 54, a detour will be provided. One staging area is planned behind the Sixty 58 Townhomes on Riverside Boulevard. Four potential ingress and egress sites have been identified: Garcia Bend Park, at the corner of Grangers Dairy Drive and North Point Way, Riverside Boulevard near Brookfield Private School, and where the bike trail meets Riverside Blvd, just before 35th Avenue. Appendix 1 shows the potential staging areas, haul and access routes.

- Launchable Toe - The method of launchable rock chosen for the Sacramento River Contract 2 project is different from what was analyzed in the 2016 FEIS/FEIR. A launchable rock toe is placed at the waterside edge of a constructed planting bench, lower on the levee/riverbank than a launchable rock trench, to allow riparian vegetation to grow next to the water's edge. A launchable rock toe could also be placed at the bottom of standard erosion protection, If erosion and scour occur below the launchable toe, the revetment placed in the launchable toe would launch and cover the eroded area, preventing further erosion and providing bank slope stability.

- Tiebacks and Key-ins – This method of bank protection is in addition to what was analyzed in the 2016 FEIS/EIR. Where native bank materials are highly erodible tiebacks and key-ins can be used to prevent erosion from occurring upslope of the revetment. Rock keys are installed perpendicular to high-flow and are used to connect a rock tieback or the upstream and downstream ends of the revetment into the bank. For use on Contract 2, tiebacks could be placed between 325 and 1,300 feet apart, allowing

for a flexible design to avoid greater habitat impacts. The tieback rock thickness should be the same as the surrounding rock revetment.

- Coffer Dam and Dewatering at SUMP 63 – The 2016 FEIS/EIR provides coverage for utility replacement and SREL Contract 2 provides NEPA coverage and specific details for the Sump replacement and landside pipes, see description in Section 2.1 above. This SEA would be analyzing the effects of replacing the four pipes on the water side of the levee, replacing the headwall, and utilizing a cofferdam and the need to dewater. Temporary access below the ordinary high-water mark (OHWM) of the river would be required to replace the four pipes, closure devices, headwall and revetment. Temporary access would be gained by dewatering the area with the use of a sandbag cofferdam or equivalent, approximately five feet high (1.75 feet above the typical water level) and approximately 120 feet in length**.** Placement of the cofferdam, pipe replacement and cofferdam removal is anticipated to take up to 15 days and would be completed between July 1 and October 31, which is outside of sensitive fish species migration windows. A portion of the existing revetment would be sawcut and removed.
- Additional Barge Trips - The 2016 FEIS/EIR evaluated the use of two barges to construct the erosion protection sites. However, with the expedited schedules it is anticipated that four barges would be pushed by two tugs from the bay area to Rio Vista. From there, one barge would be pushed up to the work site at a time by one tug. Two barges are needed at each construction site, up to four sites maybe under construction simultaneously.

3 Affected Environment and Environmental Effects

3.1 Approach to Analysis

The environmental effects of the No Action Alternative are fully discussed as Alternative 2 in the 2016 FEIS/EIR as well as the Action Alternatives in SREL C1, C2 & C3 SEA/SEIR, Sacramento Weir SEIS/SEIR and SR ERO C1 SEA/SEIR. The No Action Alternative assumes all work proposed in these documents has been completed. The Existing Conditions, Regulatory Setting, Regulatory Framework, and avoidance, minimization and mitigation measures are also described in detail in the SREL C1, C2 & C3 SEA/SEIR and SR ERO C1 SEA/SEIR, which evaluate ARCF contracts that are similarly situated to the SR ERO Contract 2 (which encompasses the Proposed Action). The mitigation measures from the previous NEPA document listed above are incorporated in the No Action Alternative considered in this SEA and each of these documents is incorporated by reference. Table 4 shows the specific sections within each of these previous NEPA reports where commitments regarding the Affected Environment are made. The following discussion supplements these prior documents, focusing on the effects of the Proposed Action on the four resources likely to be affected (and identified in Section 1.1, above): air quality, water quality, vegetation and wildlife, and federal special status species and fisheries. A summary of the contract 2 affected environments is included in Table 8, on page 29.

3.2 Regulatory Setting

The Affected Environment and Environmental Consequences Sections of the 2016 FEIS/EIR and SREL Contract 1 and 2 SEA/EIRs and SR ERO C1 sufficiently characterize the regulatory setting for the Proposed Action.

3.3 Resource Not Discussed in Detail

The following resources were eliminated from further discussion in this SEA because the effects of the Proposed Action on these resources would be negligible or would not cause additional impacts beyond those analyzed in the 2016 FEIS/EIR, SREL C1-3 SEA's and SR ERO C1 SEA. The resources omitted from discussion in this SEA are Climate Change, Geological Resources, Hazardous Wastes & Materials, Hydrology & Hydraulics, Land Use, Mineral Resources, Noise, Public Utilities & Service Systems, Recreation, Ground Water, Socioeconomics, Population, & Environmental Justice, Transportation &Circulation, Visual Resources. Additional information about these resources is available in previous documents, as shown in Table 4.

Table 4: Summary of Related Documents and Affected Environmental Resources

Resource	Section of 2016 GRR EIS/EIR	Section of 2019 Reach D Contract 1 SEA/SIS	Section of 2019 SREL Contract 1 SEA/EIR	Section of 2020 SREL Contract 2 SEA/EIR	Section of 2020 SREL Contract 3 SEA/EIR	Section of 2021 SR Erosion Contract 1 SEA/SEIR
Air Quality	**3.11**	**3.2.1**	**3.3**	**3.3**	3.3	**3.2.3**
Climate Change	**3.12**	**3.2.2**	**3.6**	**3.6**	3.3	**3.2.4**
Cultural Resources	**3.9**	**3.2.3**	**3.7**	**3.7**	3.3	**3.2.5**
Fisheries	**3.7**	3.1.1			**3.8**	**3.2.1**
Geological Resources	**3.2**		**3.8**	**3.8**	3.3	**3.2.11**
Hazardous Wastes & Materials	**3.17**	**3.2.4**	**3.9**	**3.9**	3.3	3.1.3
Hydrology & Hydraulics	**3.4**		3.1.2	3.1.2	3.3	3.1.6
Land Use	**3.3**	**3.2.8**	3.1.2	3.1.2	3.3	3.1.4
Mineral Resources	**3.2**		**3.8**	**3.8**	3.3	
Noise	**3.13**	**3.2.9**	3.11	3.11	3.3	**3.2.8**
Public Utilities & Service Systems	**3.16**	3.1.3	**3.14**	**3.14**	3.3	3.1.1
Recreation	**3.14**	**3.2.5**	**3.12**	**3.12**	**3.9**	**3.2.6**
Socioeconomics, Population, & Environmental Justice	**3.18**	**3.1.4**		3.1.2	3.3	3.1.2
Special Status Species	**3.8**	3.1.2	**3.5**	**3.5**	**3.7**	**3.2.2**
Transportation & Circulation	**3.10**	**3.2.6**	**3.13**	**3.13**	**3.1**	3.1.5
Vegetation & Wildlife	**3.6**	**3.2.10**	**3.4**	**3.4**	**3.6**	**3.2.9**
Visual Resources	**3.15**	**3.2.7**	**3.10**	**3.2**	**3.4**	**3.2.7**
Water Quality & Ground Water	**3.5**	**3.2.11**	**3.10**	**3.10**	**3.5**	**3.2.10**

Bold = Considered in Detail

3.4 Air Quality

3.4.1 Existing Conditions

The Contract 2 study area is located in the Sacramento Valley Air Basin (SVAB) and is under the jurisdiction of the Sacramento Metropolitan Air Quality Manage District (SMAQMD). The environmental and regulatory framework described in Section 3.11 of the 2016 FEIS/EIR and the existing conditions in section 3.2.3 of the Sac River Erosion Contract 1 SEA/SEIR is applicable to the analysis in this Supplemental EA/EIR and is incorporated by reference. Some updated and additional information is provided below.

The air quality emissions that were estimated in 2015 to accompany the 2016 FEIS/EIR in Appendix D were determined to be inadequate. It was assumed that construction would take up to 14 years to be completed but the project received supplemental funding, condensing the construction window to 5 years. The updated emissions analysis is documented in *The Final General Conformity Determination, American River Watershed Common Features 2016 Project,* authored by USACE*,* dated March 19, 2021*.* Emission sources analyzed included a wide range of construction equipment and activities, on-road mobile sources; construction material delivery trucks and motor vehicles driven by contractor employees, as well as barge emissions resulting from the delivery of quarry rock and aggregate. Each site will consist of a clam shell on a barge to unload rocks, a dozer to push material around, and an excavator to mix rock/soil. Multiple constructions sites may operate simultaneously. There will be no change in operation and maintenance emissions associated with the proposed action.

3.4.2 Environmental Effects

No Action Alternative

Under the No Action Alternative, the project work described in Alternative 2 of the 2016 FEIS/EIR, SREL C1-3 SEAs and SR ERO C1 SEA is considered completed. This includes the use of construction equipment to degrade and rebuild the levee, transport material, install jet grouting and place bank protection measures. The 2016 FEIS/EIR determined Air Quality Environmental Effects to be temporary, short term and less than significant with mitigation measures, as outlined in Section 3.11.6 of the FEIS.

Proposed Action

Construction Emissions

Air quality emissions will be generated by heavy equipment constructing the proposed project and refinements, hauling of material from the borrow source to the project area (including both truck and barge transportation) construction worker trips, and other construction-related trips. There will be no change in O&M emissions associated with the proposed project and refinements. Air emissions were modeled using SMAQMD's Road Construction Emissions Model version 8.1.0, and Harborcraft, Dredge and Barge Emission Factor Calculator. The total estimated air emissions for the proposed project and refinements are presented in Tables 5 and 6. As shown in Tables 5 and 6, the emissions resulting from the proposed project and refinements will potentially exceed the local air district thresholds for NOx.

Table 5: Emissions Estimates for the Proposed Project and Refinements – Sacramento Valley Air Basin

Pollutant	Unmitigated/Mitigated (pounds per day)	Unmitigated/Mitigated (tons per year)	Significance Threshold
2023			
ROG	16.55 / 10.0	1.14 / 0.82	N/A
NOx	182.82 / 82.80	14.97 / 10.52	85 pounds/day
PM_{10}	53.47 / 52.77	1.75 / 1.52	80 pounds/day and 14.6 tons/year
$PM_{2.5}$	13.43 / 12.76	0.84 / 0.64	82 pounds/day and 15 tons/year
2024			
ROG	15.35 / 9.86	1.09 / 0.85	N/A
NOx	166.62 / 81.51	14.24 / 10.45	85 pounds/day
PM_{10}	53.31 / 52.77	1.72 / 1.52	80 pounds/day and 14.6 tons/year
$PM_{2.5}$	13.27 / 12.76	0.81 / 0.64	82 pounds/day and 15 tons/year

Notes: Bold numbers indicate concentrations above thresholds.
NOx = oxides of nitrogen; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases.
Sacramento Metropolitan Air Quality Management District (SMAQMD) considers construction activities unlikely to generate substantial quantities of carbon monoxide (SMAQMD 2019).
CEQA significance thresholds for PM assume that fugitive dust Best Available Control Technology/Best Management Practices are implemented in accordance with SMAQMD guidance

Table 6: Emissions Estimates for the Proposed Project and Refinements - San Francisco Bay Area Air Basin

Pollutant	Barge Emissions (pounds per day)	Significance Threshold (pounds per day)
2023 and 2024		
ROG	19.81	54
NOx	321.39	54
PM_{10}	14.49	82
$PM_{2.5}$	12.96	84

Notes: Bold numbers indicate concentrations above thresholds.
NOx = oxides of nitrogen; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases.

Analysis

Access, and haul routes will only be required to complete work around the I80 / Pioneer bridge and at Sump 63. At pioneer bridge, the material will be brought in by barge or by truck. The contractor will need equipment to do the work from the land such as a bulldozer and an excavator. The emission sources analyzed in the general conformity included a wide range of construction equipment and activities, on-road mobile sources: construction material delivery trucks and motor vehicles driven by contractor employees. Therefore, there will be no additional impacts to air quality from the access, haul routes.

Launchable toe, tiebacks and key-ins are construction methods, equipment and air quality impacts will be the same with or without these methods therefore there will be no additional impact to air quality.

If the Cofferdam and dewatering activities are needed, then they will require installation and removal. The contractor will be required to provide the plans on how they anticipate accomplishing this work. This additional activity can be considered part of the wide range of construction equipment and activities that were already considered in the general conformity report. The cofferdam is limited to a single location, is anticipated to impact a 50 foot by 30 foot area at the end of the Sump 63 outfall pipes and will not have additional impacts to air quality.

Emissions from barges were estimated using the SMAQMD *Harbor craft, Dredge and Barge Emissions Factor Calculator* in 2020. The expected shipping approach will use 4-ganged barges from the Bay Area to Rio Vista, anchor at Rio Vista and use smaller tugboats to deliver single barges to construction sites for offloading. A typical tug boat has two engines at 800 horsepower each (1,600 horsepower total) Typical tugs for movement in the Sacramento River have a single engine at approximately 700 horsepower. Material volume estimates are on a per foot basis. The estimated amount of Grade C Stone is 354,600.00 cubic yards, top soil is 17,400.00 cubic yards and soil filled riprap is 21,500 cubic yards, these quantities result in approximately 740 barge trips. It is estimated that riprap can be placed at a rate of 300 tons per hour. Using a 22day/month of construction (88 days per season). We assume two years would be required to construct the project with up to 4 active sites within the in-water work window of July 1 to October 31st.

3.4.3 Avoidance, Minimization and Mitigation Measures

Mitigation measures outlined in Section 3.11.6 of the 2016 FSEIS/EIR and the Contract 2 SEIR will reduce criteria pollutant emissions, diesel particulate emissions, and fugitive dust associated with construction activities and the purchase of emission credits from SMAQMD described in the Final General Conformity Report, dated June 2021, as a result there will be no new significant effects to air quality.

3.5 Water Quality and Groundwater Resources

3.5.1 Existing Conditions

The environmental and regulatory framework and existing conditions described in Section 3.5, ‘Water Quality and Groundwater Resources,’ of the 2016 FEIS/EIR are generally applicable to the analysis in this Supplemental EA and therefore are not repeated here.

3.5.2 Environmental Effects

No Action Alternative

The 2016 ARCF GRR EIS/EIR evaluated the effects of an accidental spill or inadvertent discharge from project equipment that could directly affect the water quality of the river or water body in the Project Area, or groundwater, and indirectly affect regional water quality. Implementation of mitigation measures to compensate for potential adverse effects of Alternative 2 of the 2016 FEIS/EIR Section 3.11.6 will reduce significant temporary, short-term construction-related sediment and contaminant discharges to receiving waters during construction to less than significant.

Proposed Action

Access, haul routes and staging areas will only be required to complete work around the I80 / Pioneer Bridge and at Sump 63 all routes would be on existing roads and would not impact water quality or ground water.

Launchable toe, tiebacks and key-in features will be constructed from the water side with equipment and minimization measures that are already included in the placement of rock revetment. These two construction methods will not increase effects to water quality.

Cofferdam and Dewatering: Placement and removal of cofferdams is considered temporary work and the temporary placement of fill in a navigable waterbody. Dewatering activities could temporarily increase turbidity downstream; however, mitigation measures outlined in the 2016 FEIS/EIR and best management practices (BMP's) would be followed to ensure the activity meets water quality objectives. USACE obtained a programmatic Water Quality Certification from the Central Valley Regional Water Quality Control Board (CVRWQCB) on July 13, 2021. Prior to construction, USACE will request authorization from the CVRWQCB to start construction under the Programmatic General Permit, Report Type 3 Commencement of Construction, for the Proposed Action. The contractor will be required to obtain a Construction General Permit for potential effects on stormwater discharge, including preparation of a Storm Water Pollution Prevention Plan. These measures, in addition to the measures listed below, would ensure the effects of the Proposed Action on water quality would be less than significant with mitigation.

Barge Traffic: The use of barges to deliver material was analyzed in the GRR and determined to be a short-term significant impact because of the increase in turbidity at each site when the barge moves into place and is anchored. However, the increase in the number of barges across contract 2 would result in no new significant impacts.

3.5.3 Avoidance, Minimization and Mitigation Measures

The measures below would be undertaken to reduce impacts to water quality in circumstances requiring cofferdams and are additional to the measures set forth in Section 3.5.6 of the 2016 FEIS/EIR.

- All work performed in-water would be completed in a manner consistent with applicable water quality standards to ensure the protection of beneficial uses as specified in The Sacramento River Basin and the San Joaquin River Basin Plan.

- All dewatering and diversion activities would be undertaken such that natural flow is maintained upstream and downstream of the Project Area.
- Temporary cofferdams would be installed in a manner designed to prevent or minimize temporary sedimentation, siltation, or erosion upstream or downstream of the Project Area.
- Cofferdams would remain in place and functional around project construction sites until all work is complete, protecting river flows from the risk of contractor spills of fluids or materials.

3.6 Vegetation and Wildlife

3.6.1 Existing Conditions

The environmental and regulatory framework described in Section 3.6 'Vegetation and Wildlife' of the 2016 FEIS/EIR is generally applicable to the analysis in this Supplemental EA and therefore is not repeated here. Section 3.2.9 of the SR ERO C1 2020 SEIS/EIR also describes the vegetation and wildlife found throughout the project area. Recent work on SREL C2 has identified active fox dens that fall within the footprint of our project.

Detailed habitat maps are included in Appendix B of the 2016 FEIS/EIR and Appendix 2 of this SEA.

The Fish and Wildlife Coordination Act of 1958 (16 USC 661 *et seq*.), as amended, allows the USFWS to assess impacts of proposed projects on covered species and habitats, and make recommendations to reduce those impacts. The Coordination Act Report (CAR; USFWS # 08ESMF00-2013-CPA-0020) was included in the 2016 FEIS/EIR as Appendix A and recommended that USACE compensate for the loss of oak woodland, riparian forest, riparian scrub-shrub and emergent wetland at a ratio of 2:1. The ARCF project has been designed to comply with the recommendations contained in the Coordination Act Report.

3.6.2 Environmental Effects

No Action Alternative

Under the No Action Alternative, the project work described in Alternative 2 of the 2016 FEIS/EIR, SREL C1-3 SEA's and SR ERO C1 SEA is considered completed. This includes the use of construction equipment to degrade and rebuild the levee, transport material, install jet grouting and place bank protection measures. The 2016 FEIS/EIR determined that project impacts to vegetation and wildlife would be significant short term but less than significant long term, with mitigation.

Proposed Action

The approximately 2.44 acres of tree canopy removed by SR Erosion Contract 2 will be mitigated for both on and offsite, as outlined in the Fish and Wildlife Coordination Act Report. Woody vegetation will be trimmed or removed over the winter to avoid encounters with nesting migratory birds protected under the Migratory Bird Treaty Act prior to construction commencing in spring 2023. The tree canopy habitat also overlaps with western, yellow-billed cuckoo habitat that is discussed in the US Fish & Wildlife Service Biological Opinion.

The launchable toe would not have any different or greater impacts to wildlife or vegetation as the construction area would be the same with or without this construction method.

The cofferdam would not have greater or different impacts to wildlife or vegetation because work is already being conducted in the area, the area has already been disturbed by SREL and will be disturbed again by rock placement. The cofferdam is limited to a single location and is anticipated to impact a 50 foot by 30-foot area. No new haul or access roads will be created, work will be completed from existing maintenance roads and previously disturbed areas.

Tiebacks and key-ins would expand the construction footprint up slope from the standard revetment; however, the design in flexible and they can be placed in areas to provide as little impact to existing vegetation as possible. These impacts would be the same as those already being considered, ie veg clearing and tree removal. Wildlife would already be avoiding the area because of the rest of the bank protection work occurring in the area.

The increased turbidity from barges being moved into place was determined to be a short-term significant impact in the 2016 FEIS/EIR. The increased turbidity could temporarily impact local fish causing them to move away from the area; however, the increase in the number of barges across contract 2 would result in no new significant impacts.

The Proposed Action has undergone design refinements to reduce the linear feet of required improvements. The proposed action will have no new significant effects to vegetation and wildlife. With implementation of avoidance, minimization measures and mitigation it would be less than significant.

3.6.3 Avoidance, Minimization and Mitigation Measures

With the avoidance and minimization measures outlined in section 3.3.3 of the 2016 FEIS/EIR and mitigation measures outlined in Section of 3.6 of the 2020 SREL FSEA/SEIR the proposed action would be less than significant.

3.7 Federal Special-Status Species

3.7.1 Existing Conditions

The environmental and regulatory framework described in Section 3.8 of the 2016 FEIS/EIR is applicable to the analysis in this SEA and is not repeated here.

3.7.2 Environmental Effects

No Action Alternative

Under the No Action Alternative, the project work described in Alternative 2 of the 2016 FEIS/EIR, SREL C1-3 SEAs and SR ERO C1 SEA is considered completed. This includes the estimated temporary and permanent, direct and indirect impacts to federally listed species resulting from the use of construction equipment, rock placement, levee degrade and rebuild, transportation of material, and installation of jet grout. The 2016 FEIS/EIR determined the project's effects on Federal Special Status Species Environmental would be less than significant with mitigation measures outlined in Section 3.5.6 of the FEIS/EIR and the project's Biological Opinions.

Proposed Action

The approximate 11.15 acres of delta smelt habitat impacts from rock placement will be mitigated for at a dedicated mitigation site or at a conservation bank. SR Erosion Contract 2, including the Proposed Action, would not cause impacts to valley elderberry longhorn beetle. Green sturgeon and salmon habitat overlap, and USACE is estimating approximately 30.86 acres of impact to this shared habitat from the construction proposed under SR Erosion Contract 2. Planting benches would be constructed and instream woody material would be installed below the ordinary high water mark of the SR to provide onsite mitigation, while remaining impacts would be offset by construction of a dedicated mitigation site, or purchase of an adequate number of appropriate credits at a conservation bank.

Access, haul routes and staging areas would be located on existing roadway, there would be no new impact to federally listed species.

The ARCF GRR FEIS/FEIR considered impacts to federally listed species from construction and operation of launchable rock trenches as the project's erosion protection method, not the launchable rock toe however, the effects of an actual launch would be very similar. 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. The launchable toe is not anticipated to have impacts greater or different to VELB or YBCU as the habitat would be disturbed with or without this construction method.

The 2016 FEIS/EIR considered impacts to federally listed species from standard erosion protection and launchable trenches. Tiebacks and Key-ins are another construction method to prevent erosion higher up on the bank in at risk areas. The tiebacks and key-ins are not anticipated to have greater or new impacts to VELB, YBCU, Salmonid, green sturgeon and delta smelt that was previously analyzed.

The cofferdams would be placed during the in-water work window outlined in the Biological Opinions issued by the National Marine Fisheries Service and the U.S. Fish and Wildlife Service, shown below in Table 7. Removal or replacement of the municipal drainage system, including installation of a cofferdam and dewatering at the installation site, could result in fish injury, mortality, and/or stranding within the cofferdam if protected fish species are present in the immediate work area during construction activities. With the limited locations, short duration of work and implementation of minimization measures the impacts to federally protected species would be less than significant with mitigation.

Barge Traffic was analyzed in the 2016 FEIS/EIR. The use of barges my impact fish by scaring them out of the area, disrupting normal habits by creating shaded areas, increasing noise and putting off exhaust and other chemicals associated with boats. However, the work will be completed within the fish work window when it is least likely for listed species to be present in the river and will not result in impacts to listed fish species.

3.7.3 Avoidance, Minimization and Mitigation Measures

The project includes measures to avoid and minimize adverse effects, including in-water work windows, worker awareness training, and development and implementation of a fish rescue plan as well as other conservation measures discussed above and in the 2016 FEIS/EIR, the U.S.

Fish and Wildlife Service (USFWS; 08ESMF00-2014-F-0518-R003) and National Marine Fisheries Service (NMFS; WCRO-2020-03082) Biological Opinions (BOs) for the Project. Additional information on compliance with the BOs is in section 4.1 and 4.3 below. The BO's can be found on our project website: sacleveeupgrades.com.

Screened pumps to dewater the area inside the cofferdam would be used in accordance with California Department of Fish and Wildlife (CDFW)'s fish screening criteria and in accordance with the NMFS Fish Screening Criteria for Anadromous Salmonids and the Addendum for Juvenile Fish Screen Criteria for Pump Intakes.

Table 7: Wildlife Work Windows

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
VELB		14th									1st	
Bird		14th							1st			
Bat			31st						1st			
Fish							1st			31st		

3.8 Fisheries (Non-listed Species)

3.8.1 Existing Conditions

The environmental and regulatory framework described in Section 3.7 of the 2016 FEIS/EIR is applicable to the analysis in this Supplemental EA/EIR and is not repeated here.

3.8.2 Environmental Effects

No Action Alternative

Under the No Action Alternative, the work described in Alternative 2 of the 2016 FEIS/EIR, SREL C1-3 SEA's and SR ERO C1 SEA is considered completed. This includes the project's estimated direct and indirect impacts to Non-federally protected species. The 2016 FEIS/EIR determined the project's environmental effects on Fisheries would be less than significant with mitigation measures outlined in Section 3.5.6 of the FEIS/EIR.

Proposed Action

Access, haul routes and staging areas will only be located on existing roadways or previously disturbed areas and will not be located below the OHWM of the Sacramento River. They will not have an additional significant effect on to fisheries.

The ARCF GRR FEIS/FEIR considered impacts to fish from construction of launchable rock trenches as the project's erosion protection method, not the launch of the rock toe. The effects of an actual launch would be very similar. 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. The launchable toe provides structure to hold a large planting bench that will provide more habitat for SRA and riparian vegetation than what a berm on the riverbank would be able to provide. Overall, there will be only minor impacts to fisheries resources from the Proposed Action.

Tiebacks and key-ins, which were not considered in the GRR FEIS/FEIR are now a part of the design and will be installed below the OHWM of the Sacramento River. They will be located in the same vicinity, and placed at the same time as other bank protection measures. . Since these new design features will be placed in approximately the same footprint, they are not anticipated to cause any additional direct, adverse effects to fish.

Cofferdam and dewatering could disrupt native fish by temporarily increasing noise and turbidity causing fish to move away from the area. If juvenile species move towards open water they could experience higher risks of predation. This risk would only be present during instillation and removal of sandbags used to form the cofferdam. With appropriate BMPs and minimization measures, these effects would only occur during the construction season, be less than significant.

Barge Traffic was analyzed in the 2016 FEIS/EIR, the use of barges my impact fish by scaring them out of the area, disrupting normal habits by creating shaded areas, increasing noise and putting off exhaust and other chemicals associated with boats. The Sacramento River is used by barges and other commercial and recreational boats year-round. Once construction is complete the amount of boating traffic will return to normal, therefore having additional barges in the river for a short period of time is anticipated to have minor effects on fish.

3.8.3 Avoidance, Minimization and Mitigation Measures

Minimization and mitigation measures for the use of cofferdams and dewatering are outlined above in Section 3.6, Federally Listed Species.

Table 8: Chapter 3 Effect Summary

Resource	No Action (GRR)	Proposed Action	Numerical Impact (if any)	Mitigation (GRR)	Mitigation (Proposed Action)
Air Quality	Less than Significant with Mitigation	No New Significant Effect	NOx Unmitigated tons/day - 13.69 PM2.5 Unmitigated tons/day - 0.85	Implementation of SMAQMD's Basic Construction Emission Control Practices and other BMPs, as listed in Section 3.11.6.	Section 3.8.3 of the ARCF SR Erosion C2 SEIR
Climate Change	Less than Significant with Mitigation	No New Significant Effect		Implementation of SMAQMD's Basic Construction Emission Control Practices and other BMPs, as listed in Section 3.12.6.	Section 3.9.3 of the ARCF SR Erosion C2 SEIR
Cultural Resources	Significant	No New Significant Effect		Preparation and implementation of a Programmatic Agreement, Historic Properties Management Plan, and Historic Properties Treatment Plans.	Section 3.7.3 of the ARCF SR Erosion C2 SEIR
Fisheries	Less than Significant with Mitigation	No New Significant Effect		Vegetation variance would allow waterside vegetation to remain on the Sacramento River. Bank protection sites and launchable rock trenches would be revegetated following construction. BMPs would be implemented to address turbidity and are discussed in Section 3.5.6.	Section 3.5.3 of the ARCF SR Erosion C2 SEIR
Hazardous Wastes and Materials	Less than Significant with Mitigation	No New Significant Effect		Borrow material would be tested prior to use to ensure that no contaminated soils are used for this project.	Section 3.13.3 of the ARCF SR Erosion C2 SEIR
Hydrology and Hydraulics	Less than Significant	No New Significant Effect		None Required	NA
Land Use	Less than Significant with Mitigation	No New Significant Effect		Complete	NA
Noise	Less than Significant with Mitigation	No New Significant Effect		Coordination with local residents, compliance with noise ordinances, and other BMPs, as listed in Section 3.13.6.	Section 3.10.3 of the ARCF SR Erosion C2 SEIR
Public Utilities and Service Systems	Less than Significant	No New Significant Effect		Notification of potential interruptions would be provided to the appropriate agencies and to landowners.	NA
Recreation	Significant	No New Significant Effect		Notification and coordination with recreation users and bike groups. Flaggers, signage, detours, and fencing to notify and control recreation access and traffic around construction sites.	Section 3.11.3 of the ARCF SR Erosion C2 SEIR
Socioeconomics, Population, and Environmental Justice	Less than Significant	No New Significant Effect		Federal Relocation Act compliance.	NA
Special Status Species	Less than Significant with Mitigation	No New Significant Effect	VELB - 0 acres YBCU - 2.44 acres Delta Smelt – 11.15 acres Salmon/Green Sturgeon – 30.86 acres	Mitigation per the terms of the Biological Opinions (Appendix J). Replace habitat for species either on-site or in close proximity to lost habitat. Implement BMPs discussed in Section 3.5.6 and conservation measures in the BOs during construction to prevent mortality. Implement green sturgeon modeling and monitoring to improve effects assessment, minimize construction impacts, and mitigate for lost benthic habitat per the terms of the BOs. Implement fish passage at the Sacramento Bypass and grade the widened Sacramento Bypass to reduce stranding potential.	Create or purchase mitigation credits at a appropriate ratios per the FWCAR and ESA BO's. Section 3.6.3 of the ARCF SR Erosion C2 SEIR
Transportation and Circulation	Significant	No New Significant Effect		Preparation of a Traffic Control and Road Management Plan and other BMPs listed in Section 3.10.6.	NA
Vegetation and Wildlife	Significant Short-term / Less than Significant with Mitigation long-term	No New Significant Effect	Riparian / YBCU - 2.44 acres	When possible, in-kind compensation would be planted on planting berms, on top of launchable rock trenches, or on other lands within the Parkway. A hydraulic evaluation will be conducted to determine whether mitigation could occur in the Sacramento Bypass. Additional mitigation sites are identified in Section 3.6.6.	Create or purchase mitigation credits at a 2:1 ratio per the FWCAR and ESA BO's. Section 3.4.3 of the ARCF SR Erosion C2 SEIR

Resource	No Action (GRR)	Proposed Action	Numerical Impact (if any)	Mitigation (GRR)	Mitigation (Proposed Action)
Visual Resources	Significant	No New Significant Effect		Trees would be planted after construction is completed on planting berms and on top of launchable rock trenches, however there would still be a temporal loss of vegetation. Disturbed areas would be reseeded with native grasses.	Section 3.12.3 of the ARCF SR Erosion C2 SEIR
Water Quality and Ground Water	Less than Significant with Mitigation	No New Significant Effect		Preparation of a Stormwater Pollution. Protection Plan, Spill Prevention Control and Countermeasures Plan, and a Bentonite Slurry Spill Contingency Plan. Implementation of BMPs listed in Section 3.5.6.	Section 3.3.3 of the ARCF SR Erosion C2 SEIR

Notes:

No Action - GRR
Proposed Action - This SEA
Numerical Impact of Proposed Action
Mitigation - GRR and SEIR sections included

4 Compliance with Federal Laws and Regulations

Certain Federal laws and regulations require issuance of permits before project implementation; other laws and regulations require agency consultation but may not require issuance of any authorization or entitlements before project implementation. For each of the laws and regulations addressed in this section, the description indicates either full or partial compliance; if partial compliance is indicated, full compliance will be achieved prior to issuance of a NEPA decision document. Each of the federal laws and regulations listed in Table 6 was discussed in the 2016 FEIS/EIR and other supplemental documents. Table 8 also references the document and section in which additional information may be found.

4.1 Endangered Species Act of 1973, as amended, 16 USC 1531, et seq

Biological Opinions (BO's) from USFWS and NMFS were received in May and March of 2021 respectively. The services concurred that the ARCF 2016 projects are not likely to jeopardize the continued existence of VELB, YBCU, Delta Smelt, GGS, Sacramento River winter-run Chinook salmon, Central Valley spring-run Chinook salmon, DPS North American green sturgeon, and California Central Valley steelhead or destroy or adversely modify their designated critical habitat. The minimization recommendations and terms and conditions in both BO's will be adhered to throughout the project. The Biological Opinions can be found on our project website: sacleveeupgrades.com.

Under the BO's, USACE is required to mitigate for impacts to listed species at different ratios. Estimated impacts to listed species habitat for the entirety of Contract 2 are: YBCU 2.44 acres of canopy to be removed, Delta Smelt (*Hypomesus transpacificus*) 11.15 acres between the mean low water and 3 meters below the mean low low, Green Sturgeon (*Acipenser mediostris*) and salmonids (*Oncorhynchus* spp.[1]) 30.86 acres between the OHWM and the edge of the construction footprint. There are no anticipated effects to valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*), project designs would avoid all elderberry shrubs in the area. Planting benches are providing approximately 3.00 acres of onsite mitigation.

[1] Listed salmonids present in the Proposed Action area include winter-run Chinook (*Oncorhynchus tshawytscha*) and steelhead (*O. mykiss*).

Table 9: Summary of Federal Laws and Regulations Discussed in Previous Documents

Act or Order	Section	Compliance
Endangered Species Act of 1973, as amended, 16 USC 1531, et seq	Section 4.2 of SREL C3 Section 3.7 of this SEA	Full Compliance
Fish and Wildlife Coordination Act of 1958, as amended, 16 USC 661, et seq	Section 5.0 of the 2016 FEIS/EIR Sect ion 3.6 of this SEA	Full Compliance
Magnuson-Stevens Fishery Conservation and Management Act	Section 4.10 of SREL C3 Section 3.7 of this SEA	Full Compliance
Migratory Bird Treaty Act of 1936, as amended, 16 USC 703 et seq	Section 4.11 of SREL C3	Full Compliance
Executive Order 13112, Invasive Species	Section 5.0 of the 2016 FEIS/EIR	Full Compliance
Executive Order 11988, Floodplain Management	Section 5.0 of the 2016 FEIS/EIR	Full Compliance
Clean Water Act of 1972, as amended (33 USC 1251 et seq.)	Section 5.0 of the 2016 FEIS/EIR Section 3.5 of this SEA	Full Compliance
Clean Air Act of 1963 as amended, 42 USC 7401, et seq	Section 5.0 of the 2016 FEIS/EIR Section 3.4 of this SEA	Partial Compliance
National Historic Preservation Act of 1966, as amended	Section 5.0 of the 2016 FEIS/EIR Section 3.9 of this SEA	Partial Compliance
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	Section 5.0 of the 2016 FEIS/EIR	Full Compliance
Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 USC 4601 et seq	Section 5.0 of the 2016 FEIS/EIR	Full Compliance

4.2 Fish and Wildlife Coordination Act of 1958, as amended, 16 USC 661, *et seq*

Project partners coordinated with USFWS in 2015 during the preparation of the 2016 FEIS/EIR. The final Coordination Act Report was provided to USACE on October 5, 2015, and its recommendations were considered and included as Appendix 1 of the 2016 FEIS/EIR. USACE continues to coordinate with NMFS and USFWS as project designs are refined, impacts to species are reduced and mitigation is pursued.

The Fish and Wildlife Coordination Act of 1958 (16 USC 661 *et seq*.), as amended, allows the USFWS to assess impacts of proposed projects on covered species and habitats, and make recommendations to reduce those impacts. The Coordination Act Report (CAR; USFWS # 08ESMF00-2013-CPA-0020) was included in the 2016 FEIS/EIR as Appendix A and

recommended that USACE compensate for the loss of oak woodland, riparian forest, riparian scrub-shrub and emergent wetland at a ratio of 2:1. The SR ERO C2 would have no effects to wetlands, nor oak woodlands. The impact to scrub-shrub riparian habitat is being included with forested riparian and is being accounted for as impacts to yellow-billed cuckoo (YBCU) (*Coccyzus americanus*) discussed in the Federal Special Status Species section above. Trees were counted by field crews which documented each tree over 6" and collected a GPS point. The Project Footprint was overlapped with this data to determine which trees would be impacted by the project. Of 445 trees within the Contract 2 footprint only 50 are being removed as a part of the Proposed Action. The ARCF project has been designed to comply with the recommendations contained in the Coordination Act Report. The CAR can be found on our project website: sacleveeupgrades.com.

4.3 Magnuson-Stevens Fishery Conservation and Management Act

The Sacramento River is designated as essential fish habitat (EFH) for salmon (winter, fall/late fall, and spring-run), steelhead, green sturgeon DPS, and delta smelt. The potential effects of the ARCF Project on EFH are being coordinated with the NFMS under the Magnuson-Stevens Act, and the USACE received EFH conservation recommendations from NMFS on September 9, 2015. On September 24, 2015, USACE transmitted a letter to NMFS responding to the recommendations from NMFS. As a result, the ARCF GRR project is in full compliance with the Magnuson-Stevens Act. Consultation was completed with NMFS on May 12, 2021 and the project, including the Proposed Action, is in full compliance.

4.4 Migratory Bird Treaty Act of 1936, as amended, 16 USC 703 et seq

If nesting migratory birds are found to be occupying the project area, USACE, CVFPB, and SAFCA will coordinate with the USFWS to determine necessary avoidance and minimization measures to reduce these effects.

4.5 Executive Order 13112, Invasive Species

The proposed action will hydroseed any temporarily disturbed area with a native seed mixture. Once the bank protection measures are in place the site will be planted with native vegetation and managed to prevent the establishment of non-native species for the first couple years.

4.6 Clean Water Act of 1972, as amended (33 USC 1251 et seq.)

Compliance with Clean Water Act of 1972, as amended (33 USC 1251 et seq.) The Proposed Action would place fill material within a traditionally navigable water of the U.S. Although USACE does not permit within agency, a 404(b)(1) evaluation was completed and is included in Appendix E of the 2016 FEIS/EIR. A sufficiency review of the 404(b)(1) will be prepared and included in the Final SEA to demonstrate compliance with Section 404 of the Clean Water Act[2] and Section 10 of the Rivers and Harbors Act[3]. Prior to construction, the contractor would be required to obtain a Construction General Permit (CWA Section 402; National Pollutant Discharge Elimination System (NPDES) permit) for potential effects to storm water discharge, including preparation of a Stormwater Pollution Prevention Plan (SWPPP). USACE is also

[2] The Clean Water Act regulates the discharge of dredged or fill material in waters of the United States, including wetlands.

[3] The Rivers and Harbors Acts regulates the placement of structures and fill within navigable waters and other work done above or below navigable waters.

required to obtain a 401 Water Quality Certification from the State. A programmatic Water Quality Certification (WQC) was issued on July 13, 2021 to USACE. A Report 3 would be submitted in compliance with the programmatic WQC and USACE would begin work when the State issues a Notice of Applicability (NOA). With the implementation of these permits, the Proposed Action would be in full compliance with the Clean Water Act.

4.7 Executive Order 11988, Floodplain Management

The proposed action will not be inducing the development of the floodplain. The work is intended to protect the existing life and property that are already present on the land side of the levee.

4.8 Executive Order 1990, Protection of Wetlands

The project area does not contain wetlands.

4.9 Clean Air Act of 1963 as amended, 42 USC 7401, *et seq*

For contract specific compliance with the Clean Air Act, the cumulative emissions of ARCF 2016 project elements being built in 2022 and 2023 will be 35.3 and 30.3 tons respectively, which exceeds the de minimis threshold in Sacramento and Yolo-Solano Air Quality Management Districts (SMAQMD). Therefore, the project partners are purchasing Nitrous Oxides (NOx) emission reduction credits for NOx exceedances from the air districts. With the purchase of these credits, and ongoing coordination with the local air resources boards, the Proposed Action will be in full compliance with General Conformity Rule and the Clean Air Act. The contractor selected to construct Contract 2 will be responsible for monitoring and reporting emissions to SMAQMD. For more information on local air district reporting requirements, see the 2016 FEIS/EIR Section 3.11.

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

The Proposed Action is an element of the ARCF 2016 project to reduce the flood risk to the Sacramento Area. The project area protects many neighborhoods on the East side of the river, none of these are considered to be low income or minority communities.

4.11 Farmland Protection Policy Act 7 USC 4201 et seq

Inapplicable. The project area does not contain agricultural lands.

4.12 National Historic Preservation Act of 1966, as amended

As of February 7, 2022. USACE has consulted with the California State Historic Preservation Officer (SHPO) and other parties and, as a result, has executed the *Programmatic Agreement among USACE and the California SHPO regarding the American River Common Features Project, Sacramento and Yolo Counties, California* (PA). Compliance with Section 106 of the National Historic Preservation Act (NHPA) is guided by the PA. The PA establishes the process USACE shall follow for compliance with Section 106 of the NHPA, taking into consideration the views of the signatory and concurring parties and interested Native American Tribes.

In accordance with the PA and the Historic Properties Management Plan (HPMP) for the ARCF 2016 Project, USACE initiated ongoing consultation with Native Americans who attach religious or cultural significance to potential historic properties that may be affected by the proposed

undertaking on November 8, 2021. A response was received from United Auburn Indian community (UAIC) regarding the culturally sensitive nature of the area. No further responses were received regarding potential resources within the APE.

In accordance with the PA, USACE consulted with the California SHPO, requesting comments on the delineation of the Area of Potential Effects (APE) on November 8, 2021. In a letter dated December 6, 2021, USACE received a response stating SHPO had no comment on the project's APE. Consultation is ongoing regarding identification and evaluation of historic properties, and the finding of effect for this Project phase, and would be completed prior to award of SRE Contract 2. Accordingly, the Proposed Action would comply with Section 106 of the NHPA.

Determinations of the specific measures to be implemented to resolve adverse effects to known Historic Properties would be made by USACE, in consultation with SHPO and Consulting Parties to the PA, as required by the PA and as described in detail in the HPMP for the ARCF Project. Should USACE make a finding of adverse effect to historic properties for SRE Contact 2, specific measures that are consistent with the PA and the HPMP would be addressed in a Historic Properties Treatment Plan. Other mitigation and minimization efforts that may be implemented are identified in the ARCF GRR EIS/EIR to address potential impacts to unknown cultural resources that could be discovered during construction.

4.13 Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, 42 USC 4601 et seq

All or portions of some parcels within the footprint of the proposed action will need to be acquired for project construction and ongoing operations and maintenance. USACE's partner Sacramento Area Flood Control Agency (SAFCA) is responsible for the LERRDS process for all of ARCF 2016, all property acquisitions will comply with the Act.

5 Coordination of the Supplemental EA

This Draft Supplemental EA will be circulated for 45 days (April 15 to May 29, 2022) and links to the documents sent to agencies, organizations, and individuals known to have a special interest in the ARCF Project and Contract 2 specifically. The Draft SEA will be published along with the Draft Supplemental Environmental Impact Report (DSEIR) prepared by GEI. Copies of the Draft Supplemental EA are posted on the USACE and the Central Valley Flood Protection Board (CVFPB) websites, sacleveeupgrades.com and http://cvfpb.ca.gov/public-notices, at the Sacramento Central Library and will be made available by mail upon request due to COVID-19 restrictions. A public notice will be posted in the Sacramento Bee and a virtual public meeting will be held to receive comments on the Draft SEA along with the DSEIR. Information about the date, time, and virtual meeting link for the meeting will be posted on the ARCF Project's website, www.sacleveeupgrades.com. The SEA was coordinated with all appropriate Federal, State, and local governmental agencies including USFWS, SHPO, CDFW, the Sacramento Area Flood Control Agency, and the California Department of Water Resources (DWR) prior to the finalization of this document.

6 Findings

This SEA evaluated the environmental effects of the Proposed Action on four resource areas in detail, in compliance with the requirements of NEPA. Its findings indicate that after the commitment of additional avoidance, minimization and mitigation measures detailed above, the Proposed Action is not anticipated to cause any new, significant short-term or long-term adverse effects not already considered in the 2016 FEIS/EIR and in SREL C1, C2 & C3 SEA/SEIR, Sacramento Weir SEIS/SEIR and SR ERO C1 SEA/SEIR. Accordingly, a draft FONSI has been prepared and is being circulated with this SEA

7 Report Preparers and Reviewers

This SEA was prepared by USACE, Planning Division, Sacramento District.

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APPENDIX A: AIR QUALITY MODELING RESULTS

APPENDIX B: BIOLOGICAL RESOURCES DATA

Appendix B-1: Land Cover Maps and Sensitive Biological Resources

Appendix B-2: Species Lists