American River Common Features 2016 Project
Sacramento River, Reach D, Contract 1
Front Street Stability Berm
Final Supplemental Environmental Assessment
Final Supplemental Initial Study

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US Army Corps of Engineers ®
Sacramento District

SAFCA
Sacramento Area Flood Control Agency

CENTRAL VALLEY FLOOD PROTECTION BOARD
PUBLIC SAFETY AND FLOOD MANAGEMENT
STATE OF CALIFORNIA

ACRONYMS AND ABBREVIATIONS

APE	area of potential effects
ARCF	American River Common Features
BACT	best available control technologies
BMP	best management practices
BSLMS	Beach-Stone Lakes Mitigation Site
CAA	Clean Water Act
CAAQS	California Ambient Air Quality Standards
CAR	Coordination Act Report
CARB	California Air Resources Board
CCCA	California Clean Air Act
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CESA	California Endangered Species Act
cfs	cubic feet per second
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
Corps	U.S. Army Corps of Engineers
CVFPB	Central Valley Flood Protection Board
CWA	Clean Water Act
dbA	A-weighted decibels
dbh	diameter at breast height
DPM	diesel particulate matter
DTSC	Department of Toxic Substance Control
DWR	California Department of Water Resources
EA	environmental assessment
EIR	environmental impact report
EIS	environmental impact statement
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	finding of no significant impact
FWCA	Fish and Wildlife Coordination Act
GEI	GEI Consultants, Inc.
GHG	greenhouse gases
GRR	General Revaluation Report
GWET	groundwater extraction and treatment system
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
JFP	Joint Federal Project
MBTA	Migratory Bird Treaty Act
MIAD	Mormon Island Auxiliary Dam
MND	mitigated negative declaration
N_2O	nitrous oxides

NAAQS	National Ambient Air Quality Standards
ND	Negative Declaration
NEPA	National Environmental Policy Act
NF_3	nitrogen trifluoride
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NPDES	national pollution discharge elimination system
NRHP	National Register of Historic Places
O_3	ozone
O&M	operations and maintenance
PA	programmatic agreement
PACR	Post Authorization Change Report
PAHS	polynuclear aromatic hydrocarbons
Pb	lead
PG&E	Pacific Gas & Electric
$PM_{2.5}$	fine particulate matter
PM_{10}	respirable particulate matter
RDC1	Reach D Contract 1
RM	river mile
ROD	Record of Decision
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
Sac Urban	Sacramento River Flood Control System Evaluation, Phase I, Sacramento Urban Area
SAFCA	Sacramento Area Flood Control Agency
SF_6	sulfur hexafluoride
SHRA	Sacramento Housing and Redevelopment Agency
SIP	state implementation plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SPRR	Southern Pacific Railroad
SRBPP	Sacramento River Bank Protection Project
SVAB	Sacramento Valley Air Basin
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
UAIC	United Auburn Indian Community
ULDC	urban levee design criteria
USEPA	U. S. Environmental Protection Agency
USFWS	U. S. Fish and Wildlife Service
VOC	volatile organic compounds
WCM	water control manual
WRDA	Water Resources Development Act
WRRDA	Water Resources Reform and Development Act

1.0 INTRODUCTION

1.1 Proposed Action

The U.S. Army Corps of Engineers, Sacramento District (Corps), Sacramento Area Flood Control Agency (SAFCA), and the Central Valley Flood Protection Board (CVFPB) propose to construct, as a part of the American River Common Features (ARCF) 2016 Project, a levee improvement consisting of an approximately 400 foot long stability berm against the landside slope of the Sacramento River east levee in Sacramento, California. This portion of the ARCF 2016 Project is referred to as the Reach D Contract 1 (RDC1) Stability Berm project.

The Corps has determined that the levee system along the Sacramento River does not meet the current federal standards for flood protection, due to seepage and slope stability. Seepage is occurring beneath and through segments of the levee system, creating a significant risk to the stability and reliability of the levee system throughout the Sacramento area. In the RDC1 Stability Berm project area, the Corps, CVFPB, and SAFCA have documented that through-seepage conditions and steep landside levee slopes make this levee segment susceptible to failure during high water events. Through-seepage is seepage through a levee embankment that can occur during periods of high river stages. If unaddressed, through-seepage can destabilize the levee prism and eventually lead to levee failure. The purpose of the RDC1 Stability Berm is to reinforce the Sacramento River east levee along this vulnerable 400-foot reach in order to reinforce the levee slope and significantly reduce seepage through the levee in the downtown Sacramento area.

1.2 Project Location

The RDC1 Stability Berm project area is located along the east bank of the Sacramento River, adjacent to Front Street, just north of U Street, immediately west of Interstate 5, and north of U.S. Highway 50 in the downtown area of the city of Sacramento (Figure 1). The site consists of four parcels with two landowners, and was previously used as a lumber yard. Wall remnants, fences, and paved areas are still present at the site. The northern segment of the project area previously housed a vehicle storage and refueling area, a cardboard box company, a lumber and pulp product mill, and a river discharge for heating and cooling systems for State buildings. The State no longer discharges water at this location, however a remnant concrete headwall structure from the discharge is still present on the waterside of the levee, along with an abandoned 30-inch diameter pipeline that penetrates the levee. The southern parcel is currently used as a City of Sacramento materials stockpile site and as the primary staging area for the Old Sacramento horses and carriages. The Sacramento River east levee in this reach supports both the Sacramento River Bike Trail and the California Railroad Museum's Excursion Train on its crown.

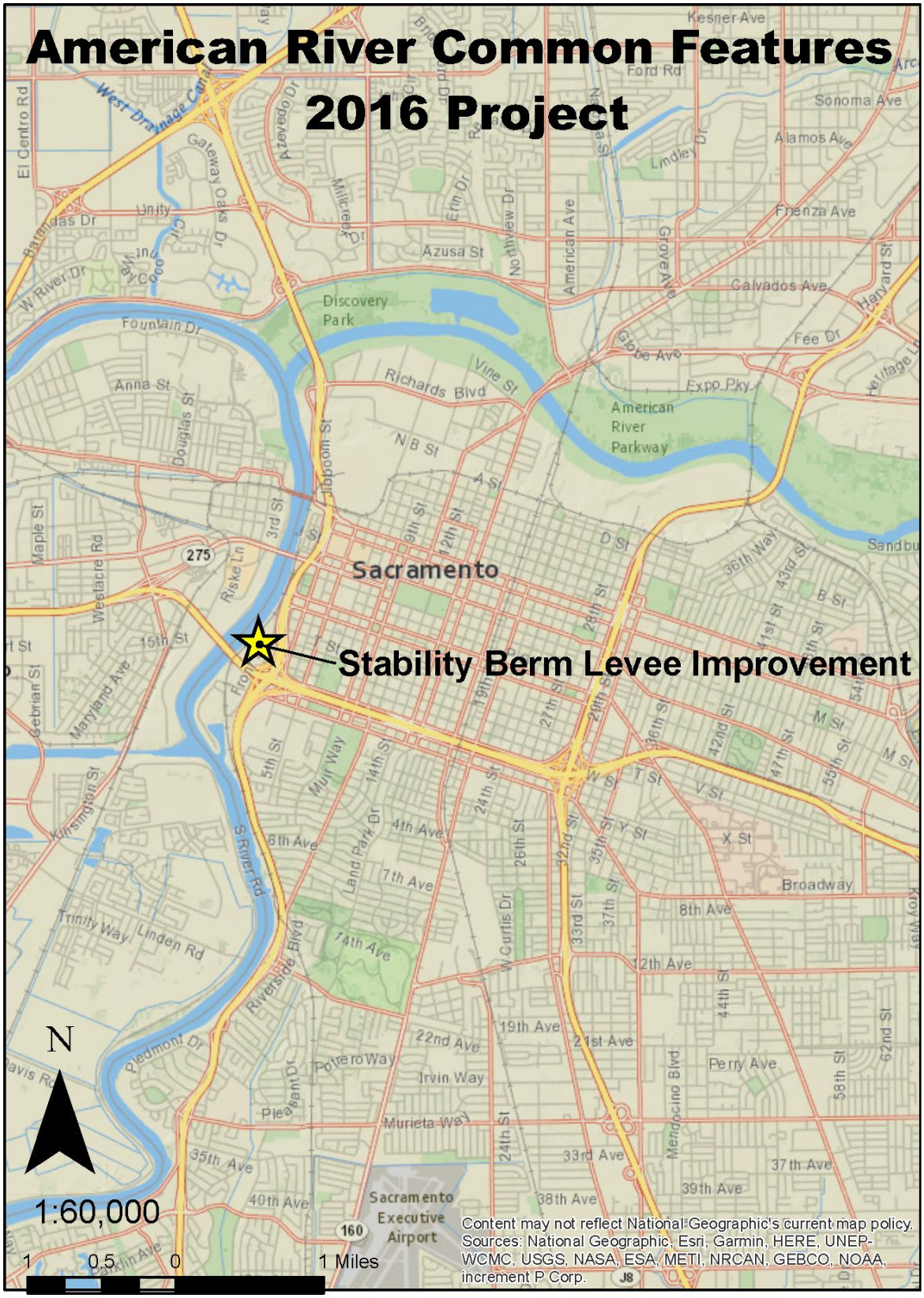

Figure 1. RDC1 Stability Berm Project Location.

1.3 Background and Need for Action

Following the 1986 flood, and the associated severe impacts to Sacramento's levee system, Congress directed the Corps to investigate additional means to reduce flood risk to the city of Sacramento. The Corps completed this investigation in 1991, recommending construction of Auburn Dam and levee improvements downstream of Folsom Dam. Congress directed the Corps to conduct supplemental analysis of the flood management options considered in the 1991 study. The resulting Supplemental Information Report, American River Watershed Project, California (March 1996) recommended a similar alternative, with Auburn Dam and downstream levee work (Corps, 1996). It considered, but did not advance, additional alternatives for Folsom Dam improvements and a stepped release plan for Folsom Dam. All three alternatives were accompanied by downstream levee improvements.

Congress recognized that levee improvements were "common" to all candidate plans in the report and that there was a Federal interest in participating in these "common features". Thus, the ARCF Project was authorized in the Water Resources Development Act of 1996, Pub. L. No. 104-303, § 101(a)(1), 110 Stat. 3658, 3662-3663 (1996) (WRDA 1996), and the decision about construction of Auburn Dam was deferred. Major construction components for the ARCF Project in the WRDA 1996 authorization included construction of seepage remediation along approximately 22 miles of American River levees, and levee strengthening and the raising of 12 miles of the Sacramento River levee in the Natomas Basin.

The ARCF Project was modified by the Water Resources Development Act of 1999, Pub. L. No. 106-53, § 366, 113 Stat. 269, 319-320 (1999) (WRDA 1999), to include additional levee improvements to safely convey an emergency release of 160,000 cubic feet per second (cfs) from Folsom Dam. These improvements included construction of seepage remediation and levee raises along four stretches of the American River, and construction of levee strengthening features and raising of 5.5 miles of the Natomas Cross Canal levee in Natomas. Additional construction components for both WRDA 1996 and WRDA 1999 were authorized and have been constructed by the Corps. However, the Natomas Basin features authorized in WRDA 1996 and WRDA 1999 were deferred and later reassessed in the Natomas Post Authorization Change Report (PACR). The Natomas PACR was authorized in the Water Resources Reform and Development Act (WRRDA) of 2014, Pub. L. No. 113-121, § 7002, 128 Stat. 1193, 1366 (2014), and the associated levee improvements, referred to as the ARCF, Natomas Basin Project, are currently under construction.

Additionally, following the flood of 1986, significant seepage occurred on the Sacramento River levees from Verona (upstream end of Natomas) at river mile (RM) 79 to Freeport at RM 45.5 and on both the north and south banks of the American River levees. Seepage on the Sacramento River was so extensive that soon after the 1986 flood event, Congress funded levee improvements as part of the Sacramento River System Evaluation, Phase I, Sacramento Urban Area (Sac Urban). The Sac Urban Project constructed shallow seepage cutoff walls from Powerline Road in Natomas at approximately RM 64 downstream to Freeport. At the time, seepage through the levees was considered to be the only significant seepage problem affecting the levees in the Sacramento area.

After construction of the Sac Urban project, the Sacramento Valley experienced another flood event in 1997. The seepage from this event led to a geotechnical evaluation of levees in the vicinity of the city of Sacramento, which showed that deep underseepage was of concern. Considerable seepage occurred on the Sacramento River as well as on the American River. Seepage on the American River was expected because levee improvements had yet to be constructed. However, the significant seepage on the Sacramento River in reaches where levees had been improved as part of the Sac Urban project exposed that deep underseepage was a significant concern in this area, a conclusion later confirmed by the Levee Seepage Task Force in 2003.

While the reevaluation study was beginning for the ARCF Project, the Folsom Dam Post Authorization Change Report (PACR) was being completed by the Sacramento District. The results of the PACR, and of the follow-on Economic Reevaluation Report for Folsom Dam improvements, showed that additional levee improvements were needed on the American River and on the Sacramento River below their confluence in order to capture the benefits of the Folsom Dam projects. The levee problems identified in these reports consisted primarily of the potential for erosion on the American River and seepage, stability, erosion, and height concerns on the Sacramento River below its confluence with the American River. These findings pointed to a need for additional reevaluation in the two remaining basins comprising the city of Sacramento: American River North and American River South. The ARCF GRR was completed in December 2015, and the Record of Decision (ROD) for the EIS/EIR was signed in August 2016. Congress authorized the reevaluated ARCF Project in the Water Resources Development Act (WRDA) of 2016.

The Corps' non-Federal partner, SAFCA, reviewed, investigated, and conducted analyses to determine the scope of the required improvements on the Sacramento River to meet Federal Emergency Management Agency (FEMA) and State urban levee design criteria (ULDC) standards as a potential early implementation action under their Levee Accreditation Program prior to the authorization of the ARCF GRR. Under this evaluation, SAFCA initiated design on the seepage and stability improvements to the Sacramento River east levee. However, since the Corps has now received authorization and appropriations from Congress, it is moving forward as the lead implementation agency for these improvements rather than SAFCA.

In July 2018, Congress granted the Corps 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 the Corps to implement the much-needed levee improvements as quickly as possible. Although most environmental effects were addressed in the ARCF GRR EIS/EIR, impacts associated with some of the work, including the RDC1 Stability Berm, were identified as a part of SAFCA's later assessment, and therefore were not assessed in the ARCF GRR EIS/EIR. Supplemental NEPA and CEQA analyses would be conducted, as needed, for any actions or effects that were not previously addressed in the ARCF GRR EIS/EIR.

1.4 Authority

The American River Common Features Project was authorized by Section 106(a)(1) of WRDA 1996, Pub. L. No. 104-303 § 106(a)(1), 110 Stat. 3658, 3662-3663 (1996), as amended by Section 130 of the Energy and Water Development and Related Agencies Appropriation Act of 2008, Pub. L. No. 110-161, § 130, 121 Stat. 1844, 1947 (2007). Additional authority was provided in Section 366 of WRDA of 1999. WRDA 1999, Pub. L. No. 106-53, § 366, 113 Stat. 269, 319-320 (1999).

The proposed RDC1 Stability Berm would address seepage and stability risks to the Sacramento River east levee identified in the interim general reevaluation study of the American River Common Features (ARCF) Project, which was authorized by WRDA 2016, Pub. L. No. 114-322 § 1322, 130 Stat. 1707.

1.5 Purpose and Need for the Environmental Assessment/Initial Study

The proposed RDC1 Stability Berm would reduce the risk of a levee failure in the project reach from flooding the downtown Sacramento area. In this reach, the levee embankment consists of silty gravel, poorly-graded sand with silt, and silty sand. The levee foundation is made of an inter-bedded silty sand and silt blanket underlain by a sand and gravel aquifer. There are no previously constructed levee repairs or improvements at this site.

While the crown of the levee along this levee reach is wide enough to accommodate both a paved bike trail and two railroad tracks, the slope is steep, typically measuring at a ratio 1.8 Horizontal:1Vertical (1.8H:1V) on the landside and 1.6H:1V on the waterside. This steepness, particularly in the case of a levee constructed with unsuitable materials over a porous foundation, significantly increases the risk of instability. Through-seepage also increases the instability of the levee, as does the location of the project area, which is low ground between landside berms both upstream and downstream of the project area (Figure 2). Constructing a stability berm would fill this gap and strengthen the levee in the project area. If this levee reach is not addressed, the Sacramento River east levee would remain at risk of failure from through-seepage, and downtown Sacramento, including Interstate 5 and the California State Capitol, could be significantly damaged during a future flood event.

Figure 2. RDC1 Project Area Upstream Existing Berm.

This Supplemental Final Environmental Assessment/Initial Study (EA/IS) describes the existing environmental conditions in the proposed RDC1 Stability Berm's project area, evaluates the anticipated environmental effects of the alternatives on these conditions, and identifies measures to avoid or reduce any adverse environmental effects to a less-than-significant level where practicable. This Final EA/IS has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) and the guidelines for implementation of the California Environmental Quality Act (CEQA). This Final EA/IS, in combination with the ARCF GRR EIS/EIR (Corps, 2016), which it supplements, fully discloses the potential environmental effects of the project to the public and provided an opportunity for the public to review and comment on the proposed action. A 30-day public review period ended on January 28, 2019. Public comments and responses to their comments have been incorporated as part of the Final EA in the appendix entitled Responses to Public Comments.

1.6 Previous Environmental Documentation

- May 1988, Sacramento River Flood Control System Evaluation, Initial Appraisal Report – Sacramento Urban Area. Phase I. U.S. Army Corps of Engineers, Sacramento District.

- December 1991, American River Watershed Investigation California Feasibility Report: Part I—Main Report and Part II—Environmental Impact Statement/Environmental Impact Report;
- December 1991, American River Watershed Investigation California Feasibility Report, Volume 2, Appendix G: Section 404 Evaluation;
- March 1996, Supplemental Information Report, American River Watershed Project, California: Part I—Main Report and Part II—Final Supplemental Environmental Impact Statement (FSEIS)/Environmental Impact Report;
- June 27, 1996, Chief's Report on FSEIS, signed by Acting Chief of Engineers, Major General Pat M. Stevens; and July 1, 1997, ROD on FSEIS, signed by Director of Civil Works, Major General Russell L. Furman;
- November 2008, Final Environmental Impact Statement for 408 Permission and 404 Permit to Sacramento Area Flood Control Agency for the Natomas Levee Improvement Project, Sacramento CA. Prepared by EDAW/AECOM, Sacramento, CA;
- October 2010, Final Environmental Impact Statement on the Natomas Levee Improvement Project Phase 4b Landside Improvement Project, Sacramento CA, prepared by AECOM, Sacramento, CA;
- December 2015 (revised May 2016), American River Watershed Common Features General Reevaluation Report, Final Environmental Impact Statement/Environmental Impact Report;
- 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.

1.7 Decisions Required

The Corps' District Engineer must decide whether the proposed project qualifies for a Finding of No Significant Impact (FONSI) under NEPA, or whether an Environmental Impact Statement (EIS) must be prepared to analyze potentially significant environmental impacts. In addition, the CVFPB must decide if the RDC1 Stability Berm qualifies for a Negative Declaration (ND) or Mitigated Negative Declaration (MND) under CEQA, meaning that after taking into consideration proposed mitigation measures, the project's adverse environmental effects would not be significant, or whether an Environmental Impact Report (EIR) must be prepared due to potentially significant environmental impacts.

2.0 ALTERNATIVES

2.1 Alternatives Not Considered in Detail

Alternatives that were eliminated from detailed consideration for the overall ARCF 2016 project were described in detail in the ARCF GRR EIS/EIR (Corps, 2016). For the proposed RDC1 Stability Berm site, alternatives for potential consideration included addressing seepage through a cutoff wall or jet grouting. Additionally, the levee could have been degraded, and a new levee constructed with appropriate materials to mitigate the problems. The cutoff wall and levee replacement alternatives were eliminated because both options would have required degrading the levee and removing of the railroad tracks and bike trail during construction. Although jet grouting would not require degrading the levee or removing the railroad tracks, it would significantly disrupt train operations and force closure of the bike trail during construction. The stability berm alternative minimized adverse impacts to these recreational features on the crown of the levee and thus was selected for assessment as the proposed action.

2.2 Alternative 1 – No Action

NEPA requires the analysis of a "no action" alternative that illustrates project conditions if the proposed action is not taken. Under the No Action Alternative, the RDC1 Stability Berm would not be constructed. As a result, this segment of the levee would remain susceptible to through-seepage and instability and would continue to be a weak spot in the system. Levee failure at this location could lead to catastrophic flooding of downtown Sacramento, including the State Capitol and Interstate 5, a major transportation artery less than 200 yards from the levee. Numerous Federal, State, and local government offices, residences, and businesses lie within the potential flood inundation area. Damage to infrastructure, utility systems, government function, and commercial and residential interests would be significant.

2.3 Alternative 2 – Drained Stability Berm Construction (Proposed Action)

This section describes the features, construction details, staging, borrow and disposal sites, and construction schedule necessary to build the RDC1 Stability Berm. In addition, long-term operations and maintenance (O&M) requirements are described below. Existing conditions and the analysis of environmental effects follow in Section 3.

2.3.1 Features of Proposed Project

The Sacramento River east levee does not currently meet Corps criteria for seepage and slope stability. To reduce the risk of levee failure due to seepage, a stability berm would be constructed against the landside slope to control through-seepage and slope stability (Figure 3). The berm would be constructed by trimming the landside slope of the levee to the design excavation lines and by placing an engineered fill section with internal drainage against the

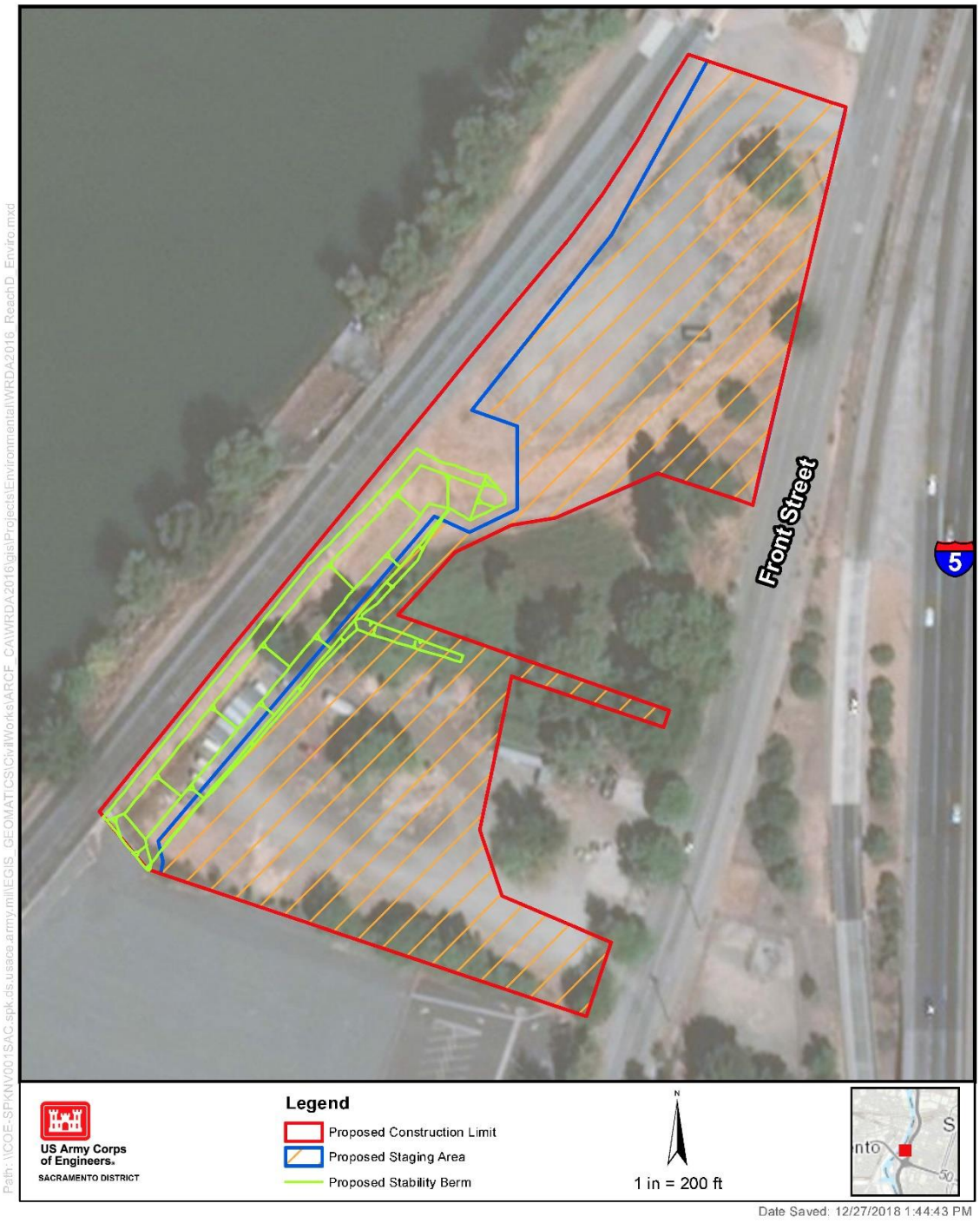

Figure 3. Alternative 2 – Drained Stability Berm Construction (Proposed Action).

landside slope. The northern end of the site would require additional excavation due to its slightly higher toe elevation and to provide reasonably uniform drainage along the 400-foot length of the berm.

2.3.2 Construction Details

The stability berm is expected to be approximately 400 feet along the landside slope of the levee, with a base width of 20 feet, a top width of 12 feet, and an average height of 16 feet. The construction limit for the berm and adjacent staging area extends approximately 900 feet along the levee alignment and 170 to 450 feet laterally. Roughly 2,500 cubic yards of existing levee material would be removed during excavation, with 1,500 cubic yards of drainage aggregate and 3,000 cubic yards of berm fill required for stability berm construction. The drainage aggregate would be purchased by the contractor from commercial sources. It is anticipated that some berm fill would come from excavation, however, the balance of the borrow material would be acquired from a licensed commercial facility or from another source approved in writing by the Corps prior to use.

Construction would include the following activities and processes:

- Set up temporary construction access and staging areas on designated areas of the site.
- Protect trees and structures that are not removed.
- Clear and grub work area, including, but not limited to, the following actions:
    - Remove trees and vegetation growing on the landside levee toe and within and immediately adjacent to the berm footprint.
    - Clear grass, brush, and debris from the existing ditch that drains the site to the east.
    - Removal of the existing fence and posts along the landside toe and drainage ditch.
    - Removal of existing wooden utility pole and pavement along landside levee toe by the construction contractor.
    - Temporary removal of the existing railroad switch lever which protrudes into the work area above the berm by the construction contractor.
- Strip levee landside slope and berm foundation; dispose of striping's at an off-site disposal location.
- Perform shallow excavation to shape the slope and berm foundation to the design lines and to develop a shallow drainage swale parallel to the berm toe. Stockpile excavated soil that meets Corps specifications for reuse as berm fill. Dispose of soil that does not meet specifications at an off-site disposal location.

- Remove a portion of an abandoned 30-inch diameter outfall pipe if encountered in the limits of excavation. Plug and cap remaining pipe ends.
- Import additional borrow material for berm and aggregate for drainage layer construction.
- Place and compact of the stability berm fill.
- Seed and place erosion protection measures on the levee landside slope, drainage swale, and other disturbed areas.
- Reinstall railroad switch lever.
- Install new fence landside of the berm toe.

Site Access and Staging

The RDC1 Stability Berm project area is accessed via Front Street, which is immediately adjacent to the site. Haul trucks, construction equipment and construction workers would likely access Front street from either Interstate 5, the Capital City Freeway, or Highway 50. From any of these highways, surface streets would be taken to arrive at the project site. The construction contractor would be required to coordinate their final haul route with the City of Sacramento and obtain required hauling permits prior to initiating construction activities.

A staging area for equipment and materials is proposed for the parcels north of and immediately adjacent to the site. These parcels are owned by the City of Sacramento and California Department of Parks and Recreation. During construction, access to the site would only be permitted from the landside of the levee.

Site Preparation

Prior to the start of construction, the RDC1 Stability Berm project area would be enclosed by a temporary fence to limit entry into the site and ensure site safety and security. Two existing, abandoned wooden utility poles would be removed and disposed of prior to any construction activity. Additionally, an existing railroad switch lever would be removed by the contractor before construction can begin.

Before the general site grading would begin, approximately 3 to 6 inches of surface material would be stripped along the stability berm alignment to remove vegetation, organic soil, and any debris. This vegetation and debris would be disposed of at an approved commercial disposal site, while the topsoil would be stockpiled for application on the finished site. Deeper stripping may be required to ensure all roots are removed. To the greatest extent possible, existing trees would be protected in place, but approximately four non-native trees of heaven (*Ailanthus altissima*) and two black willows (*Salix nigra*) would need to be removed at the northern end of the construction footprint.

Restoration and Cleanup

After construction is complete, a permanent fence would be installed along the toe of the stability berm and the railroad switch would be reinstalled by the contractor. The staging areas, landside levee slope, and any other bare earth areas would be reseeded with native grasses and forbs to promote revegetation and minimize soil erosion. Any roads or other access areas damaged by construction activities would be fully repaired and restored to its preconstruction condition. All trash, excess construction materials, and construction equipment would be removed and the site would be left in a safe and clean condition.

Borrow and Disposal Sites

Borrow material would be acquired both onsite and from an outside source by the contractor and must meet the requirements established in the plans and specifications by the Corps. The contractor is responsible for selecting a disposal site located outside the construction limits. This site would have current permits for operation, meet the required environmental standards, and be approved in writing by the Corps.

Construction Workers and Schedule

The contractor is estimated to need between 10 to 20 construction workers onsite each day during construction operations. All workers would access the site by regional and local roadways and would park in the proposed staging areas. Construction hours would comply with the City 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 would take place outside of the construction exemption times without permission applied for and given by the City of Sacramento. Construction is expected to begin in June 2019 and would take 6 to 12 weeks to complete.

2.3.3 Operations and Maintenance

Once construction is complete, the site would be turned over to the non-Federal partners, who would be responsible for the long term operation and maintenance (O&M) of the site, including repair, rehabilitation, and replacement of all project features. Regular O&M activities include mowing, herbicide application, rodent control, and inspecting the levee. Long-term O&M of the RDC1 Stability Berm would not require additional measures beyond those required for the Sacramento River levees. The local maintaining agency for the project area is currently the City of Sacramento, and it is likely that the CVFPB and SAFCA would return the project to the City for long term maintenance.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the environmental resources in the project area and potential environmental impacts of the alternatives considered.

3.1 Resources Not Considered in Detail

Some resources were eliminated from further analysis in this EA/IS because effects were negligible, or because the proposed action would not create additional impacts to the resources beyond the scope of those addressed regionally within the ARCF GRR EIS/EIR (Corps, 2016). The RDC1 Stability Berm was not identified in the ARCF GRR EIS/EIR as part of the recommended plan and was later identified by SAFCA for implementation, as described in Section 1.3 above. Accordingly, site specific resource conditions are detailed below because they were not described in the ARCF GRR EIS/EIR.

3.1.1 Fisheries

All construction activities would occur on the landside of the levee. The contractor would not be permitted to use the levee crown or affect waterside vegetation that provides shaded riverine aquatic habitat for fish species in the Sacramento River. Additionally, since the crown of the levee is broad enough to accommodate a bike trail and two railroad tracks, any trees that could be affected by construction are far enough from the river that they would not provide additional benefits to fish species. The contractor would be responsible for implementing best management practices (BMPs) in compliance with their National Pollutant Discharge Elimination System (NPDES) Construction General Permit and its associated Stormwater Pollution Prevention Plan (SWPPP), which would reduce or eliminate the possibility of sediment runoff entering the landside drainage system and ultimately the Sacramento River. As a result, the proposed action would have no effects to fisheries and no further analysis is required.

3.1.2 Special Status Species

The RDC1 Stability Berm project area includes no habitat onsite suitable for State or Federally listed species protected under the California Endangered Species Act (CESA) and Endangered Species Act (ESA) respectively and, and no listed species are known to occur in the project area. As described above, the project would not affect fish species, including listed fish species. There are no elderberry shrubs on site, the host plant for the threatened Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*), therefore no effects to the Valley Elderberry Longhorn Beetle are anticipated. Other than the Sacramento River, there are no aquatic features in the project area and no connectivity to rice fields or emergent marsh, therefore the project area contains no habitat suitable for the threatened Giant Garter Snake (*Thamnophis gigas*).

Additionally, while there are trees on site, including trees that would be affected by the proposed action, these trees provide limited cover habitat within the riparian corridor and thus are unlikely to be used by the threatened Western yellow-billed cuckoo (*Coccyzus americanus*), which prefers wide, dense riparian corridors.

In spring 2018, preliminary nesting raptor and migratory bird surveys occurred in the project area to determine if any species were likely to be present on the site, such as the State-listed Swainson's hawk (*Buteo swainsoni*) and White-tailed kite (*Elanus leucurus*), or birds protected under the Migratory Bird Treaty Act (MBTA). No nests were identified during the surveys within a ½ mile of the RDC1 Stability Berm project area, therefore it is also unlikely that nesting birds would be present during construction.

On the basis of this analysis the Corps anticipates that the proposed action would have no effect on special status species. Additional raptor and migratory bird surveys would be conducted in spring 2019 to verify the presence or absence of these species prior to the start of construction. If nesting birds are identified within ½ mile of the project area, coordination with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) would occur to ensure that appropriate avoidance and minimization measures are implemented.

3.1.3 Public Utilities

As a part of the design process, engineers conducted an assessment of the RDC1 project area to determine the presence of underground utility lines that have the potential to be affected by the proposed action. The assessment determined that there are no known utility lines in the RDC1 Stability Berm project area except at the entrance of the staging area, where there are overhead transmission lines. These lines are high enough and would not be affected by any equipment or vehicles entering the staging area. Nonetheless, temporary signage would be installed to notify contractor and avoid impacts to the lines. Additionally, since the project only incorporates a limited amount of excavation, it is not anticipated that any unanticipated utilities would be found during project construction. The construction contractor would follow standard procedures for further identifying underground utilities in the project area to confirm the site conditions. There are abandoned cement water pipes within the construction footprint. If underground utilities are identified by the utility providers or the City of Sacramento, the contractor would coordinate any necessary BMPs that would need to be implemented. Based on current site data and available information, no effects to other public utilities are anticipated during construction.

3.1.4 Socioeconomics and Environmental Justice

The RDC1 Stability Berm project area is currently zoned for industrial use and is separated from downtown Sacramento by Interstate 5, West Sacramento by the Sacramento River, and other residential areas to the south by the Highway 50/Pioneer Bridge. The closest permanent residences to the project area are single family homes located on 3rd Street in downtown Sacramento, which are approximately ¼ mile east of the project area, with I-5 as a

barrier in between. Because of the site's geographic location the proposed action would not adversely affect any minority or low income neighborhoods.

Small numbers of homeless individuals sometimes camp on the property due north 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 would be active near the project area during construction is speculative. Such a group could be temporarily disturbed during construction by noise and air pollutant emissions. No practical mitigation measures exist, but the mobility of these camps would provide a remedy.

3.2 Resources Considered in Detail

Adverse effects to air quality, climate, cultural artifacts, hazardous waste, recreation, traffic, environmental aesthetics, land use, vegetation and wildlife, and water quality could occur if the proposed project is built. As a result, these subjects are discussed in detail below. Note that in many cases, the regulatory setting and methodology of assessment are incorporated by reference from the ARCF GRR EIS/EIR (Corps, 2016).

3.2.1 Air Quality

Section 3.11 of the ARCF GRR EIS/EIR adequately describes the regulatory setting and analytical methodology for this resource.

Existing Conditions

The RDC1 Stability Berm project area is located in Sacramento County, which is in the Sacramento Valley Air Basin (SVAB), within the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The study area is located at the southern end of the Sacramento Valley, which has a Mediterranean climate characterized by hot, dry summers and mild, rainy winters. Summer high temperatures are hot, often exceeding 100 degrees Fahrenheit (°F). Winter temperatures are cool to cold, with minimum temperatures often dropping into the high 30s. Most of the precipitation occurs as rainfall during winter storms. The rare occurrence of precipitation during summer is in the form of convective rain showers. Also characteristic of the SVAB are winters with periods of dense and persistent low-level fog that are most prevalent between storms. Prevailing wind speeds are moderate.

The topographic features giving shape to the SVAB include the Coast Range to the west, the Sierra Nevada to the east, and the Cascade Range to the north. These mountain ranges channel winds through the SVAB, but also inhibit the dispersion of pollutant emissions. Ozone pollution presents a serious problem when an inversion layer traps pollutants close to the ground, causing unhealthy air quality levels. Vehicles and other mobile sources, including trucks, locomotives, buses, motorcycles, agricultural equipment, and construction equipment cause about 70 percent of the region's air pollution problems during the summer (SMAQMD 2010).

May through October is ozone season in the SVAB. This period is characterized by poor air movement in the mornings and the arrival of the Delta breeze from the southwest in the afternoons. Typically, the Delta breeze transports air pollutants northward out of the SVAB; however, a phenomenon known as the Schultz Eddy prevents this from occurring during approximately half of the time between July and September. The Schultz Eddy causes the wind pattern to shift southward, causing air pollutants that have moved to the northern end of the Sacramento Valley to be blown back toward the south before leaving the valley. This phenomenon exacerbates concentrations of air pollutants in the area and contributes to violations of the ambient air quality standards (Solano County, 2008).

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 (NO_X).

For these criteria pollutants, NAAQS and the California Ambient Air Quality Standards (CAAQS) were established to protect public health and welfare. The standards create a margin of safety protecting the public from adverse health impacts caused by exposure to air pollution. The U.S. Environmental Protection Agency (USEPA) is responsible for enforcing the NAAQS, primarily through their review of the State Implementation Plans (SIPs) for each state. 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". Areas that are noncompliant are "non-attainment" areas. The State and Federal attainment status for the SVAB are shown in Table 1 below.

Table 1. State and Federal Attainment Status.

Criteria Pollutant	Averaging Time	Federal Status	State Status
O_3	1 hour 8 hour	N/A Non-Attainment –Severe	Non-Attainment – Serious Non-Attainment – Serious
PM_{10}	24 hour Annual	Attainment N/A	Non-Attainment Non-Attainment
$PM_{2.5}$	24 hour Annual	Non-Attainment N/A	N/A Non-Attainment
CO	1 hour 8 hour	Attainment Attainment	Attainment Attainment
NO_2	1 hour Annual	N/A Attainment	Attainment N/A
SO_2	3 hour 24 hour Annual	Attainment Attainment Attainment	N/A Attainment N/A
Pb	30 day Quarter	N/A Attainment	Attainment N/A

Source: SMAQMD, 2017
N/A (Not Applicable); State or Federal Standard does not exist.

Due to the non-attainment designations for the SVAB discussed above, 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.

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 the USEPA 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.

Toxic Air Contaminants/Hazardous Air Pollutants

A Toxic Air Contaminant (TAC) is defined by California law as an air pollutant that "may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." The USEPA refers to TACs as Hazardous Air Pollutants. TACs can be emitted from stationary or mobile sources. Ten TACs have been identified through ambient air quality data as posing the greatest health risk in California. Direct exposure to these pollutants has caused cancer, birth defects, damage to the brain and nervous system, and respiratory disorders. TACs do not have ambient air quality standards because no safe levels of TACs have been determined. Instead, TAC impacts are evaluated by calculating the health risks associated with exposure.

TACs relevant to the project were determined based on SMAQMD guidance and the project area conditions. The only TACs that could occur due to this project is diesel particulate matter (DPM) DPM differs from other TACs in that it is not a single substance, but rather a complex mixture of gases, vapors, and particles, many of which are known human carcinogens. Most researchers believe that diesel exhaust particles contribute most of the risk because the particles in the exhaust carry many harmful organics and metals. Unlike other TACs, no ambient monitoring data are available for DPM because no routine measurement method currently exists (DWR, 2017). Additionally, asbestos could be found in abandoned concrete pipes at the construction site and become a concern if fibers become airborne. The subcontractor would be required to monitor airborne asbestos with the proper equipment if its presence is determined prior to pipe-related work.

Asbestos Pollution

Composed of long silky fibers, asbestos contains hundreds of thousands of smaller fibers. On occasion, these fibers are subdivided further into microscopic filaments that would float in the air for several hours. These fibers could easily penetrate body tissues and could cause disabling and fatal diseases on humans. Asbestos that is tightly bound with another material, such as Portland cement, is considered non-friable and would only release fibers if cut, broken, drilled, sanded, or machined. Workers could be seriously affected by being exposed to asbestos fibers if proper precautions are not taken during the handling of and physical

disturbance/demolition to the cement outfall pipes found at the site. The most dangerous exposure is inhaling airborne fibers. Exposure could cause disabling respiratory disease and types of cancer like mesothelioma (lining of the chest cavity) and lung cancer (U.S. Department of Labor, 1995).

OSHA sets out several provisions where the contractor is required to comply with the asbestos standard. The agency has established strict exposure limits and guidelines for exposure monitoring, medical surveillance, record keeping, regulated areas, and communication of hazards.

Permissible Exposure Limits (PELs)

Time-Weighted Average (TWA) - The contractor would ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter of (1 f/cc) as averaged over an 8-hour TWA day.

Excursion Limit (ELT) - The contractor would ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (0.1 f/cc) as averaged over a sampling period of 30 minutes.

OSHA has adopted the term "excursion limit" to refer to the short-term permissible exposure limit to be consistent with the terminology used by the American Conference of Governmental Industrial Hygienists (ACGIH).

If asbestos is found in the 30-inch outfall pipes, the Contractor will be required to comply with the SMAQMD's Rule 902 to reduce potential adverse effects on humans and the surrounding wildlife resources found in the area.

Avoidance and Minimization Measures

- Contractor is required to be certified to monitor airborne asbestos.
- Use of a subcontractor qualified with certification in handling asbestos.
- The contractor will be required to prepare and submit an Asbestos Management Plan to USACE's Contracting Officer.
- Training and education of workers.
- Workers wear appropriate respiratory protection.
- The pipe would be continuously sprayed with water.
- General hygiene requirements for handling pipes with asbestos, including personal decontamination.

Sensitive Receptors

In the RDC1 project area, the primary sensitive receptors would be local homeless residents camping in the area, users of the bike trail on the top of the levee, and any wildlife in the area. There are no schools, hospitals, or senior facilities in the vicinity of the project area.

Environmental Effects

Significance Criteria

For this analysis, an effect was considered significant if it would:

- Conflict with, or obstruct implementation of, the applicable air quality plan;
- Violate any air quality standard or substantial contribution to existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area under NAAQS and CAAQS;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.
- Exceed federal general conformity *de minimis* thresholds

Alternative 1 – No Action

Under this alternative, the Corps would not construct the RDC1 Stability Berm, therefore no air pollutant emissions would occur as a result of construction. The ambient air quality conditions in the project area would remain consistent with current conditions. However, if a high-water event were to occur and the levee were to fail, there would be impacts to air quality from flood fighting, emergency repair, as well as effects from odors and other toxins present in the floodwaters.

Alternative 2 – Proposed Action

Air quality emissions would be generated by heavy equipment constructing the RDC1 Stability Berm, and the hauling of material from the borrow source to the project area. There would be no operational emissions associated with the proposed action. The total emissions for the proposed action are shown in Table 2. Appendix C includes the full air quality emissions modeling results. As shown in Table 2, the emissions resulting from the proposed action are relatively minor and would not exceed or even approach the federal general conformity or SMAQMD daily thresholds.

In addition to the emissions associated with construction equipment and trucks, there would be an increase in fugitive dust in the area due to the earth moving associated with construction. Additionally, DPM would be generated by construction equipment. The assessment of health risks associated with exposure to diesel exhaust typically is associated with chronic exposure, in which a 70-year exposure period is often assumed. However, while cancer can result from exposure periods of less than 70 years, acute exposure periods (i.e., exposure periods of 2 to 3 years) to diesel exhaust are not anticipated to result in an increased health risk, as health risks associated with exposure to diesel exhaust are typically seen in exposures periods that are chronic. Because construction activities for RDC1 are expected to only last 6 to 12 weeks, effects associated with DPM exposure would be less than significant.

Table 2. Emissions Estimates for the Proposed Action.

Pollutant	lbs./day	CEQA Significance Threshold	Tons/year	General Conformity *de minimis* Thresholds in Tons/year
ROG	0.79	N/A	0.02	25
CO	11.40	N/A	0.25	100
Kn_{ox}	6.76	85 lbs/day	0.15	25
PM_{10}	2.97	0. If all feasible BMPs are applied, then 80 pounds/day and 14.6 tons/year	0.07	100
$PM_{2.5}$	0.74	0. If all feasible BMPs are applied, then 82 pounds/day and 15 tons/year	0.02	100

Notes: Under CEQA, CO is not considered a pollutant of concern by SMAQMD, because construction activities are not likely to generate a substantial quantity of CO (SMAQMD, 2018)
* California Ambient Air Quality Standard
** ROG, CO, and NOx are ozone precursors
*** Road Construction Emissions Model 8.1.0
ppm parts per million

Additionally, BMPs would be implemented to further reduce emissions to the greatest extent practicable. These minimization measures described below would further reduce criteria pollutant emissions, DPM emissions, and fugitive dust associated with construction activities. As a result dust and equipment emissions would be minor and there would be no significant impacts to air quality in the region due to construction of the RDC1 Stability Berm.

Exhaust Enhanced Control

SMAQMD also requires the use of its Exhaust Enhanced Control Practices to reduce or minimize effects on air quality. These practices are listed below:

1. The contractor would 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 would include the horsepower rating, engine model year, and projected hours of use for each piece of equipment.

- The contractor would provide the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

- This information would be submitted at least 4 business days prior to the use of subject heavy-duty off-road equipment.

- The District's Equipment List Form can be used to submit this information.

- The inventory would be updated and submitted monthly throughout the duration of the project; an exception being that an inventory would not be required for any 30-day period in which no construction activity occurs.

2. The contractor would provide a plan for approval by the lead agency and District 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, would achieve a project wide fleet-average 20 percent NO_x reduction and 45 percent particulate reduction compared to the most recent CARB fleet average.

- This plan would be submitted in conjunction with equipment inventory.

- Acceptable options for reducing emissions could include use of late model engines, low-emission diesel products, alternate fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.

- The District's Construction Mitigation Calculator could be used to identify an equipment fleet that achieves this reduction.

3. The contractor would ensure that emissions from all off-road diesel powered equipment used on the project site does not exceed 40 percent opacity for more than three minutes in any one hour.

- Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) would be repaired immediately.

- Non-compliant equipment would be documented and a summary provided to the lead agency and District monthly.

- A visual survey of all in-operation equipment would be made at least weekly.

- A monthly summary of the visual survey results would be submitted throughout the duration of the project, except that the monthly summary would not be required for any 30-day period in which no construction activity occurs. The monthly summary would include the quantity and type of vehicles surveyed, as well as the dates of each survey.

4. The District and/or other officials could conduct periodic site inspections to determine compliance.

Avoidance and Minimization Measures

Although the project would not exceed significance criteria, the Corps would still implement the following measures to reduce emissions associated with the project:

- Implement, at minimum, SMAQMD's Basic Construction Emission Control Practices (SMAQMD, 2015). Consider implementing SMAQMD's Enhanced Construction Emission Control Practices.
- Water exposed soil with adequate frequency to minimize fugitive dust.
- Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 mph.
- Treat site access locations to a distance of 100 feet from the paved road with a 6 to 12-inch layer of wood chips, mulch, or gravel to reduce generation of road dust and road dust carryout onto public roads.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the District shall also be visible to ensure compliance.
- The Corps would encourage its construction contractors to use construction equipment outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emissions control device used by the Contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
- The Corps would encourage its construction contractor to use Tier 4 equipment for construction to further reduce potential emissions.

3.2.2 Climate Change

Section 3.12 of the ARCF GRR Final EIS/EIR adequately describes the regulatory setting and methodology for this resource.

Existing Conditions

This section addresses the impacts of GHG emissions associated with implementation of the RDC1 stability berm on global climate change. Emissions of GHGs are a concern because all GHGs and GHG emissions contribute, on a cumulative basis, to global climate change. Global climate change has the potential to result in sea level rise (which may result in flooding of low-lying areas), to affect rainfall and snowfall levels (which may lead to changes in water supply and runoff), to affect temperatures and habitats (which in turn may affect biological and agricultural resources), and to result in many other adverse effects.

Global warming is the name given to the increase in the average temperature of the Earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered by a vast majority of the scientific community to be unequivocal, based on observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level (IPCC, 2014).

The Intergovernmental Panel on Climate Change (IPCC) concludes that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from preindustrial times to 1950 and had a small cooling effect afterward. However, since 1950, increasing GHG concentrations resulting from human activity such as fossil fuel burning and deforestation have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries. Since 2007, no scientific body of national or international standing has maintained a dissenting opinion (DWR, 2017).

Increases in GHG concentrations in the Earth's atmosphere are thought to be the main cause of human-induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the Earth and is reradiated back into space as infrared radiation. Some GHGs occur naturally and are necessary for keeping the Earth's surface habitable. However, increases in the concentrations of these gases in the atmosphere above natural levels during the last 100 years have increased the amount of infrared radiation that is trapped in the lower atmosphere, intensifying the natural greenhouse effect and resulting in increased global average temperatures.

Warming of the Earth's atmosphere and oceans affects global and local climate systems. Observational evidence from all continents and most oceans shows that many natural systems are being affected by regional climate changes, in addition to temperature increases (IPCC, 2014). Based on growing evidence, there is high confidence that the following effects on hydrologic systems are occurring:

(1) increased runoff and earlier spring peak discharge in many glacier- and snow-fed rivers; and (2) warming of lakes and rivers in many regions, with effects on thermal structure and water quality (IPCC, 2014).

With respect to California's water resources, the most important effects of global warming have been changes to the water cycle and sea level rise. Over the past century, the precipitation mix between snow and rain has shifted in favor of more rainfall and less snow (Mote and Sharp, 2016; USGCRP, 2017), and snowpack in the Sierra Nevada is melting earlier in the spring (Kapnick and Hall, 2009). The average early-spring snowpack in the Sierra Nevada has decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage (Mote and Sharp, 2016). These changes have major implications for water supply, flooding, aquatic ecosystems, energy generation, and recreation throughout the state.

Greenhouse Gas Emissions

As defined in Section 38505(g) of the California Health and Safety Code, the principal GHGs of concern are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). With the exception of NF_3, these are the same gases named in the USEPA's Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act. Each of the principal GHGs has a long atmospheric lifetime (one year to several thousand years) and is globally well mixed. In addition, the potential heat trapping ability of each of these gases varies significantly from one another. On a 100-year timescale, methane is about 25 times as potent as CO_2, nitrous oxide is about 298 times as potent as CO_2, and sulfur hexafluoride is about 22,800 times more potent than CO_2 (IPCC, 2007). Conventionally, GHGs have been reported as CO_2 equivalents (CO_2e). CO_2e takes into account the relative potency of non-CO_2 GHGs and converts their quantities to an equivalent amount of CO_2 so that all emissions can be reported as a single quantity.

The primary human-made processes that release these gases include: (1) the burning of fossil fuels for transportation, heating, and electricity generation; (2) agricultural practices that release methane, such as livestock grazing and crop residue decomposition; and (3) industrial processes that release smaller amounts of high global warming potential gases, such as SF_6, perfluorocarbons, and hydrofluorocarbons. Deforestation and land cover conversion have also been identified as contributing to global warming by reducing the Earth's capacity to remove CO_2 from the air and altering the Earth's surface reflectance. The major sources of GHGs that are relevant to the RDC1 project are transportation sources and construction emissions. These are discussed in greater detail below.

Construction emissions are generated when materials and workers are transported to and from construction sites and when machinery is used for construction activities such as trenching, grading, dredging, paving, and building. Emissions from construction activities are generated for shorter periods than operational emissions; however, GHGs remain in the atmosphere for hundreds of years or more, so once released, they contribute to global climate change unless they are removed through absorption by the oceans or by terrestrial sequestration.

Environmental Effects

Significance Criteria

On August 1, 2016, the Council on Environmental Quality (CEQ) issued final guidance on considering GHG emissions and climate change in NEPA analyses. Fundamental to this guidance are the recommendations that when addressing climate change, agencies should consider:

1) The potential effects of a proposed action on climate change as indicated by assessing GHG emissions; and,

2) The effects of climate change on a proposed action and its environmental impacts.

For this analysis, an effect pertaining to climate change was analyzed based on professional judgment, final NEPA guidance from the CEQ, and State CEQA Guidelines Appendix G (14 CCR 15000 et seq.). An effect is considered significant if it would:

- Conflict with an applicable plan adopted for reducing GHG emissions.

SMAQMD has local jurisdiction over the Project area. In October 2014, the SMAQMD adopted a resolution that recommends GHG thresholds of significance as follows:

- Construction phase of projects: 1,000 metric tons of CO_2e per year
- Operational phase of land development projects: 1,100 metric tons of CO_2e per year; and,
- Stationary source projects: 10,000 direct metric tons of CO_2e per year.

The 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.

Alternative 1 – No Action

Under the No Action Alternative, the RDC1 stability berm would not be constructed, and global climate change could expose this reach of the Sacramento River levee to increased rainfall runoff and flood flows in the Sacramento River. Without levee improvements, the risk of levee failure due to through-seepage and subsequent flooding of the downtown Sacramento area remains high. If a catastrophic flood were to occur, emergency flood fighting and clean-up actions would require the use of a considerable amount of heavy construction equipment. The use of equipment in this scenario would likely generate GHG emissions above the stated

thresholds. Furthermore, no BMPs to manage GHG emissions would be in place, due to the emergency nature of the flood fight activities. Each of these effects could be significant.

Alternative 2 – Proposed Action

Construction of the RDC1 Stability Berm would result in GHG emissions due to fuel combustion from on-site construction vehicles, as well as indirect emissions from the electricity used to operate machinery. In addition to construction vehicles, there would be GHG emissions from the workforce vehicles. Workers would commute from their homes to the construction site and park in one of the staging areas.

The air quality modeling discussed previously also assesses the estimated GHG emissions that would result from the proposed construction activities. Table 3 shows the results of the GHG, which determined that the proposed Project would not reach the significance threshold of 1,000 metric tons of CO_2e per year for project construction, as described above.

Table 3. Estimated Greenhouse Gas Emissions from the Proposed Action.

GHG	Pounds Per Day	Metric Tons per Year
CO_2	7,542.17	165.93
CH_4	0.47	0.01
N_2O	0.21	0.00
TOTAL CO_2e	7,616.13	167.55

* Road Construction Emissions Model 8.1.0

While emissions associated with this alternative would not reach GHG thresholds, these emissions would still contribute to the overall global cumulative GHG emissions. As a result, during implementation of the proposed action, the Corps would implement avoidance and minimization measures, as discussed below, to reduce GHG emissions to the greatest extent feasible.

Avoidance and Minimization Measures

The avoidance and minimization measures discussed in the Air Quality section above would reduce GHG emissions as well and would be implemented to reduce emissions to the greatest extent feasible. In addition, the following measures would also be implemented to the extent feasible to minimize GHG emissions:

- Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.
- Recycle at least 75 percent of construction waste and demolition debris.
- Purchase at least 20 percent of the building materials and imported soil from sources within 100 miles of the project site.

3.2.3 Cultural Resources

Section 3.9 of the ARCF GRR EIS/EIR describes the environmental setting, regulatory setting, and methodology for cultural resources, including the historical and cultural context and baseline for the area.

Existing Conditions

The Corps conducted SHPO and Native American consultation, including issuing a letter that identified the RDC1 Stability Berm project's area of potential effects (APE). GEI Consultants, Inc. (GEI), working under contract to SAFCA and in coordination with the Corps, conducted an investigation of cultural resources within the APE. The investigation consisted of a review of previous documentation, pre-field research, historical society consultation, field surveys, a built environment resources assessment, a geoarchaeological sensitivity assessment and geoarchaeological excavation, and coordination and consultation with interested Native American Tribes.

Much of the APE along the Sacramento River consists largely of fill material used in the construction and maintenance of the levee. Archival research conducted by GEI historians was not able to conclusively determine the source material for the levee fill. On the landside of the levee, much of the area near the RDC1 Stability Berm project area had been landscaped or altered by modern development.

On April 27, 2018, a records search was conducted at the NCIC by GEI archaeologist Jesse Martinez, MA, RPA, for the RDC1 Stability Berm project area. A 0.25-mile search radius surrounding the APE for this portion of the proposed project was included in the records search. The records search identified two previous investigations that extended through or encompassed a portion of the proposed project APE; the two reports in total covered approximately 50 percent of the current proposed project APE in the Reach D Stability Berm Area. Two previously reported resources are mapped within the Reach D Stability Berm APE; The Southern Pacific R Street Railroad and the Walnut Grove Branch Line of the Southern Pacific Railroad (SPRR).

As a result of excavation of three archaeological trenches and monitoring of an additional six geotechnical trenches in the Reach D Stability Berm project APE, no archaeological materials were identified. Based on the findings, the Reach D Stability Berm portion of the APE appears to have low sensitivity for the presence of buried archaeological deposits within the proposed depth of project disturbance.

Environmental Effects

Significance Criteria

An alternative would be considered to have a significant adverse effect on cultural resources if it diminishes the integrity of the resource's locations, design, setting, materials, workmanship, feeling, or association to the extent that the resource could no longer convey its historic significance. Types of adverse effects can include: physical destruction, damage, or alteration; alteration of the character of the setting; introduction of elements that diminish setting, feeling, or association; neglect; and transfer, lease, or sale.

Alternative 1 - No Action

Under the No Action Alternative no cultural resources would be impacted. However, a failure of the levee could result in damages to historic and prehistoric resources, which are assumed to be significant. The degree of damages to cultural resources is speculative due to uncertainties regarding the extent and duration of a flood event.

Alternative 2 – Proposed Action

The proposed project would be conducted in accordance with the Programmatic Agreement (PA) for the American River Common Features Project, executed on September 10, 2015. As discussed above, a records search was completed on April 27, 2018 and two previously recorded resources were identified in the RDC1 Stability Berm's APE.

An intensive survey and a geoarchaeological assessment of the sensitivity of the RDC1 Stability Berm's APE were also conducted on June 11, 2018. During this work, three historic-era (more than 45 years old) built environment resources were observed in the APE. These include a segment of the Sacramento River east levee (Levee Unit 117), a segment of the Walnut Grove Branch Line of the Southern Pacific Railroad Company (SPRR), and a concrete headwall. The levee (Levee Unit 117) appears to meet NRHP criteria within the context of flood management in the Sacramento Valley and is therefore considered to be a Historic Property. The Walnut Grove Branch Line of the SPRR has previously been determined to be eligible for the NRHP and is also considered a Historic Property.

Letters were sent to potentially interested Native American tribes and the State Historic Preservation Office (SHPO) on June 1, 2018, described the proposed project APE for the ARCF 2016 Project. Letters to Tribes that had identified sacred sites on the NAHC sacred lands file included a request for information about those sacred sites. On June 12, 2018, the Corps received an email from Mechoopda Tribe indicating that the Tribe did not require consultation and had no comments at this time. The Tribe requested to be contacted in the event of a discovery of cultural resources in the proposed project APE. The Corps sent an email to Mechoopda Tribe acknowledging their request to be notified in the event of a discovery.

The United Auburn Indian Community (UAIC) provided a confidential map illustrating an area of concern which encompassed the entire RDC1 Stability Berm APE. This area of concern was not characterized as an archaeological site, but rather as an area identified by the UAIC with an elevated sensitivity for the presence of resources important to the UAIC. Native American consultation is ongoing, in accordance with the requirements of the PA.

Copies of the Draft Inventory Report for the RDC1 Stability Berm APE were provided by mail to the SHPO and potentially interested Native American tribes in November 2018. Based on the results of the cultural resource inventory of the RDC1 Stability Berm APE, the Corps proposed a finding of No Adverse Effect to Historic Properties. The SHPO tentatively concurred with this finding on 28 December 2018. No comments were received regarding the Draft Inventory Report, and no changes were made between the Draft and Final Inventory Reports.

The Final Inventory Report would be provided to SHPO for their concurrence on the finding of No Adverse Effect.

Avoidance and Minimization Measures

The Walnut Grove Branch Line of the SPRR segment is eligible for the NRHP and is therefore considered a Historic Property. The proposed project would temporarily remove an existing railroad switch lever during construction activities. The switch lever would be reinstalled upon completion of the proposed project in order to maintain the integrity of the Historic Property.

Procedures for the discovery of previously unknown Historic Properties are provided in Stipulation IX of the PA and shall be followed in order to minimize any effects to Historic Properties that may be encountered during construction activities.

3.2.4 Hazardous Wastes and Materials

Section 3.17 of the ARCF GRR Final EIS/EIR describes the regulatory setting and methodology for this resource.

Existing Conditions

Both the proposed action site and the adjacent paved lot have been the subjects of clean-up efforts by the California Department of Toxic Substances Control (DTSC). The proposed project site, known by DTSC as the Sacramento Housing and Redevelopment Agency (SHRA) site, was previously the site of vehicle storage and refueling, a cardboard box company, and the site of lumber and wood products manufacturing. As a result of the past usage, the site has been under the jurisdiction of DTSC for the clean-up of polynuclear aromatic hydrocarbons (PAHS), total petroleum hydrocarbons (fuel), and volatile organic compounds (8260B VOCS). The paved site directly to the south of the proposed action site, known to DTSC as the Pacific Gas & Electric (PG&E) Sacramento Site, was previously a manufactured gas plant and has been treated for the contaminants benzene, ethylbenzene, PAHS, toluene, and xylenes. The proposed project site currently has a ground water extraction and treatment system (GWET) and associated monitoring wells.

Environmental Effects

Significance Criteria

The proposed action was determined to result in a significant impact related to hazards and hazardous materials if they would do 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.

Alternative 1 – No Action

Under the No Action Alternative, the Corps would not construct the RDC1 Stability Berm and therefore the proposed project site conditions would remain the same. The Sacramento area, including downtown Sacramento and the State Capital, would remain at risk of flooding. If a high water event were to occur, the levee would remain susceptible to failure from through-seepage. Should the levee fail and the site and downtown Sacramento be flooded, hazardous materials, including those in the PG&E Sacramento Site, could enter the floodwaters and spread the hazardous materials throughout the flooded area. It is speculative to assume the scope of this potential effect during and after a flood, but it is assumed that this adverse effect would be significant.

Alternative 2 – Proposed Action

SAFCA investigated the conditions of the SHRA DTSC site in the project area as a part of their preliminary design effort for the Sacramento River east levee. The study, which was conducted by Geosyntec Consultants Inc., determined that the project area has land use restrictions due to the site conditions and is undergoing operations, maintenance, and monitoring. These ongoing monitoring operations include the GWET and associated monitoring wells. There were two soil excavation actions on the site in 2002 to remove contaminated soils from the site (Geosyntec, 2017)

Geosyntec conducted soil testing at the proposed project site and consulted with DTSC and the City of Sacramento in July 2017. The soil tests indicated that the excavation actions removed the contamination from the site, and the soil proposed for excavation by the project primarily consists of new fill from 2002. As a result of the lack of contamination on the site, DTSC indicated that a soil management plan was not required for implementation of the proposed project (Geosyntec, 2017). Geosyntec's memorandum documenting this consultation is included in Appendix B.

Avoidance and Minimization Measures

SAFCA's study and associated consultation indicates that construction of the RDC1 Stability Berm would cause no effects from hazardous and toxic wastes, and no mitigation would be required.

3.2.5 Recreation

Section 3.14 of the ARCF GRR Final EIS/EIR describes the regulatory setting and methodology for this resource.

Existing Conditions

The regulatory setting and methodology were addressed satisfactorily in the 2015 ARCF GRR Final EIS/EIR.

The proposed action site is along Front Street in Sacramento. The Sacramento River east levee adjacent to the stability berm site has multiple recreation facilities on its crown, including the Sacramento Southern Railroad Excursion Train and the Sacramento River Bike Trail. The Sacramento River through this reach is widely used for recreational boating and tourism. Riverboat tours depart from Old Sacramento just upstream of the project area daily, and there are local boat launches for recreational boating are just upstream in West Sacramento and at Discovery Park and just downstream at Miller Park. Other recreational facilities near the site include Pioneer Landing Park and the Artistic Fountain, the Riverfront Promenade, and the California Automobile Museum.

Environmental Effects

Significance Criteria

Effects on recreation would be considered significant if implementation of the proposed action would result in any of the following:

- 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.

Alternative 1 – No Action

Under the No Action Alternative, the Corps would not construct the RDC1 Stability Berm and the Sacramento River east levee would remain susceptible to through-seepage. As a result there would be no construction in the project area and no effects to recreation from construction activities. However, if a flood event were to occur and the levee were to fail, significant damage to the recreation facilities located on the levee crown could result reducing recreational opportunities in the area. The temporal and physical scope of this effect could be significant.

Alternative 2 – Proposed Action

Public access to the California Automobile Museum, Pioneer Landing Park, the Artistic Fountain, the Riverfront Promenade, the Sacramento River Bike Trail, or the Sacramento River is not expected to be impacted by the proposed activity. However, the Sacramento River Bike Trail, Pioneer Landing Park, the Artistic Fountain, and the southern end of the Riverfront Promenade are in close proximity to the project area. While access to these facilities would not be limited during construction, the recreational experience would likely be diminished during construction due to other resource impacts such as noise, aesthetics, and air pollutant emissions. Effects associated with those resources are addressed elsewhere in this document, and while these effects would degrade the recreational experience, the impact would be limited and temporary in nature and would be less than significant.

The proposed action would require closure of the staging spur for the Sacramento Southern Railroad, a second railroad track on the landside of the levee crown, for approximately 6 to 12 weeks while the stability berm is constructed. Closing the staging spur would not require closure of the main rail line and would not impact operation of the Sacramento Southern Railroad Excursion Train.

Avoidance and Minimization Measures

In order to minimize potential adverse effects to recreationists, the Corps would provide public information, including on-site signage and public notification of the proposed project to the public and to operators of the affected recreation facilities. To reduce the effect of the closure of the railroad staging spur, the Corps would coordinate with California State Parks at least 30 days prior to the start of construction to work through any adjustments that the State Parks would need to make to avoid use of the staging spur. Additionally, after construction is complete, the Corps would coordinate with California State Parks to repair any construction related damage to the staging spur of the railroad to pre-project conditions. With this coordination implemented, effects to recreation would be less than significant.

3.2.6 Traffic

Section 3.10 of the ARCF GRR Final EIS/EIR describes the regulatory setting and methodology for this resource.

Existing Conditions

All pertinent traffic laws, regulations and conditions were adequately covered in the 2015 ARCF GRR Final EIS/EIR, however, the proposed action site was not specifically discussed. This proposed project location is accessed by a public street, Front Street, in Sacramento. Although the proposed project is within a largely commercial area, the lots adjacent to it and directly across the street are vacant. The closest businesses that could be impacted by

construction-related traffic are the PG&E facility at 2001 Front Street, the Front Street Animal Shelter, and the California Automobile Museum.

Environmental Effects

Significance Criteria

The proposed action would result in a significant effect related to transportation and circulation if they would:

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

Alternative 1 – No Action

Under the No Action Alternative, the Corps would not construct the RDC1 Stability Berm and the Sacramento River east levee would remain susceptible to through-seepage in the project area. As a result, no increase in traffic volumes along Front Street associated with hauling of material for the stability berm or workers accessing the site would occur. However, if the levee were to fail during a flood event, roads and freeways in the area would flood, disrupting motor vehicle access and circulation. Rail lines running along the levee could also be seriously damaged or destroyed. Adverse effects on motor vehicle and rail transportation could be significant.

Alternative 2 – Proposed Action

Construction of the RDC1 Stability Berm would result in an increase in traffic on Front Street from haul trucks and equipment entering and leaving the project area. In addition worker commute vehicles would create an increase in daily traffic along Front Street. All vehicles would be required to park in the identified staging areas to prevent or reduce congestion for normal daily traffic along Front Street. Heavy construction equipment could cause damage to Front Street and any other local roadways that could be used to access Front Street from the freeways. Any damage to city streets that occurs during construction would be repaired to pre-project conditions following the completion of construction by the contractor.

In addition to Front Street, these vehicles would likely access the area from either Interstate 5, Interstate 80, or Highway 50. The freeways surrounding downtown Sacramento are highly utilized, particularly during morning and evening commute hours, but also provide significant capacity for both private and commercial vehicles, including large trucks.

A short-term increase in area traffic caused by contractors' vehicles during the period of project construction would be unlikely to significantly degrade service on area freeways and surface streets, and with implementation of the avoidance and minimization measures enumerated below, adverse effects to motor vehicle traffic caused by the project would be less than significant.

Avoidance and Minimization Measures

In order to ensure that the use of area roadways by contractors' vehicles and trucks would not cause significant adverse effects to motor vehicle traffic, the following measures would be implemented during construction:

- The construction contractor would notify and consult with emergency service providers to maintain emergency access and facilitate the passage of emergency vehicles on city streets.
- The construction contractor would assess damage to roadways its vehicles cause during construction and would repair all potholes, fractures, or other damages.
- The construction contractor would provide adequate parking for construction trucks, equipment, and construction workers within the designated staging areas throughout the construction period. If inadequate space for parking is available at a given work site, the construction contractor would provide an off-site staging area and, as needed, coordinate the daily transport of construction vehicles, equipment, and personnel to and from the work site.
- Construction contractors would follow the standard construction specifications of the City of Sacramento and obtain the appropriate encroachment permits, as required. The conditions of the permit would be incorporated into the construction contract and would be enforced by the City of Sacramento.

3.2.7 Aesthetics

Section 3.15 of the ARCF Final EIS/EIR describes the regulatory setting and methodology for this resource.

Existing Conditions

The vicinity of the RDC1 Stability Berm project area consists primarily of industrial development, which degrades the visual character of the area alongside the Sacramento River in this reach. Near the project area is a City of Sacramento overflow wastewater treatment facility, rail lines, the California Automobile Museum, and aboveground diesel and gasoline fuel storage

tanks and associated pipelines operated by Chevron and Union 76. The visual quality in this area is low due to the presence of large human-made structures (such as tall white fuel storage tanks), buildings, trains, pavement, fencing, overhead power lines, and other elements associated with industrial development that represent a lack of vividness, intactness, and unity. The viewer sensitivity is also considered low since this area is generally viewed only from the various industrial facilities and by a relatively small number of employees.

The project area itself is also visually degraded. The land is a disturbed lot used for storage of equipment and staging of horse stalls and carriages. The existing condition is currently further degraded due to the recent fire that occurred on the site in September 2018, which scorched the majority of the project area and destroyed much of the vegetation adjacent to the project area.

Environmental Effects

Significance Criteria

The proposed action would result in a potentially significant impact to visual resources if it would:

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

Alternative 1 – No Action

Under the No Action alternative, the Corps would not construct the RDC1 Stability Berm and the Sacramento River east levee would remain susceptible to through-seepage. No change in the visual condition of the project area from construction of the proposed action would occur. If the levee were to breach as a consequence of a flood, the visual condition of the project area would be severely degraded by flood fighting activities, and impacts from floodwaters. While the temporal scope of this impact cannot be defined, it can be assumed to be significant.

Alternative 2 – Proposed Action

Construction of the RDC1 Stability Berm would add a new flood control feature and would alter the current appearance of the site. However, the existing condition of the site is highly degraded and final grooming and re-seeding of the site after project construction is likely to improve its aesthetic appeal. . The stability berm would include an engineered slope that would require regular maintenance to ensure the berm functions properly in a flood event. Such maintenance would also improve the appearance of the levee over present conditions.

Additionally, since there is high land similar to the configuration of the stability berm on either side of the project area, the stability berm would fit more naturally into the visual contours of the area than the existing slope, also contributing to an improvement in the area's aesthetic appeal. As a result none of the significance criteria enumerated above would be expected to apply to the site after project construction and therefore no mitigation would be required.

In addition to the permanent impact created by construction of the berm, there would also be temporary effects to aesthetics during construction activities. Construction of the berm would require the presence and use of heavy construction equipment, haul trucks, worker vehicles, and the placement and compaction of material to form the stability berm. The site would look highly disturbed during and immediately following construction. This would be visually disturbing for anyone using the bike trail on the crown of the levee or riding the Sacramento Southern Railroad Excursion Train. However, recreationists on the river would not be able to see the construction activities since they would all be occurring on the landside of the levee. At the completion of construction, the contractor would be required to clean up any disturbance and reseed the site with native grasses. Once the grasses have established on the stability berm, the area would no longer be in a degraded visual state and the temporary impacts would have ceased. Since these impacts would be limited to the 6 to 12 week construction period, and would not result in a permanent, adverse effect, they are considered less than significant, with the implementation of the avoidance and minimization measures.

Avoidance and Minimization Measures

The following measures would be implemented to reduce the effects associated with aesthetics to less than significant:

- Following construction, the contractor would remove all wastes, equipment, and materials and return the site to a condition similar to the pre-project condition.
- Revegetate any disturbed area by hydroseeding the soil with native grass seed.

3.2.8 Land Use

Section 3.3 of the ARCF GRR Final EIS/EIR describes the regulatory setting and methodology for this resource.

Existing Conditions

The project area is currently owned by the City of Sacramento and California Department of Parks and Recreation. The property is zoned for industrial use, but the site is primarily used as storage for Old Sacramento, and as the staging area for the Old Sacramento horses and carriages. There is an existing land use plan for the area for future development, the Sacramento Docks Area Draft Specific Plan (City of Sacramento, 2008). The Docks Plan, while not finalized, did identify a number of land use policies and future development plans for the project area, including a mixed use residential development, extension of the Riverfront Promenade downstream to Miller Park, relocation of Pioneer Reservoir, and some new park space.

Environmental Effects

Significance Criteria

Effects to land use would be considered significant if they would result in any of the following:

- Conflict with any applicable land use plan, policy, or regulation;
- Conflict with approved Habitat Conservation Plans or Natural Community Conservation Plans;
- Physically divide an established community; or,
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Alternative 1 – No Action

Under the No Action alternative, the Corps would not construct the RDC1 stability berm and the Sacramento River east levee would remain susceptible to through-seepage. No change in land use in the project area related to the proposed action would occur.

Alternative 2 – Proposed Action

Construction of the RDC1 Stability Berm would result in a temporary effect to the current land use. The Old Sacramento horses and carriages would be relocated and would have to be staged elsewhere during the two month construction period. Coordination with the City on this relocation would be conducted during preconstruction real estate coordination and would not be considered a significant effect of the project. Following construction, the horse and carriage staging could continue on site, just beyond the footprint of the new stability berm. As a result, these temporary effects are less than significant, and no mitigation would be required.

Construction of the RDC1 stability berm would result in a permanent change to the landscape within the project area. The berm would be a flood control feature that would be subject to the responsibilities associated with the Corps' O&M manual for the site and would require a flood control easement. However, the zoning and current use of the area would not change due to the proposed action and the Docks Plan could still be implemented in the future. The Docks Plan identifies a number of improvements to the overall area necessary prior to development, including raising the full project area to an elevation consistent with the levee crown height. As a result, the presence of the stability berm would not be in conflict with this plan and the City of Sacramento could still implement their proposed redevelopment of the area. As a result, the change in land use from construction of the stability berm would be less than significant, and no mitigation would be required.

Avoidance and Minimization Measures

Because effects to land use from construction of the RDC1 stability berm would be less than significant, no mitigation would be required.

3.2.9 Noise

Section 3.13 of the ARCF GRR Final EIS/EIR describes the regulatory setting and methodology for this resource.

Existing Conditions

There are no nearby permanent, stationary sensitive receptors in close proximity to the proposed project. The California Auto Museum and Front Street Animal Shelter are both 500 feet or more from the proposed construction zone and are already impacted by traffic noise from Interstate 5 and Highway 50. The nearest permanent residences to the project area are approximately ¼ mile to the east, on 3rd Street in downtown Sacramento.

Temporary and mobile sensitive receptors present in the area include homeless people camping in the vicinity of the project area. Additionally, recreationists biking or walking on the Sacramento River Bike Trail would be considered temporary receptors. Any wildlife using the river corridor as nesting or resting habitat would also be sensitive receptors during project implementation.

The City of Sacramento exterior noise standard, as stated in the City's noise ordinance, is 55 A-weighted decibels (dBA) during the hours from 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).

Environmental Effects

Significance Criteria

Construction of the RDC1 Stability Berm would cause a significant adverse noise impact if construction activities resulted in any of the following:

- 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).
- Exposure of sensitive receptors or structures to groundborne vibration.

Alternative 1 – No Action

Under the No Action alternative, the Corps would not construct the RDC1 stability berm and the Sacramento River east levee would remain susceptible to through-seepage. No temporary change in noise conditions in the project area would occur and conditions would remain consistent with existing conditions.

Alternative 2 – Proposed Action

Construction of the RDC1 stability berm would result in noise generation from construction activities in the vicinity of the project area. This noise would be disturbing for sensitive receptors in and around the project area; however, all of these receptors are transient and capable of relocating themselves during project construction (wildlife, homeless camps, etc.). The closest permanent sensitive receptors, the residents in downtown Sacramento, are unlikely to be affected by project activities, as Interstate 5 runs between the project area and their homes, and likely presents a significantly greater ambient noise condition for those residents that would likely buffer any potential noise effects from construction activities. No construction activity is expected to cause significant ground vibration beyond, or within, the project area.

Because traffic flows on the Interstate 5 freeway create a permanently elevated level of ambient noise within the project area, and because project noise would be temporary and all construction activities would comply with the City of Sacramento Noise Ordinance and its construction work exemption, the project's adverse effects from noise would be less than significant.

Avoidance and Minimization Measures

Although effects from noise during construction of the RDC1 Stability Berm are less than significant, the following measures would still be implemented to further minimize noise levels during construction:

- 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.
- Construction equipment would be equipped with factory-installed muffling devices, and all equipment would be operated and maintained in good working order to minimize noise generation.

3.2.10 Vegetation and Wildlife

Section 3.6 of the ARCF GRR Final EIS/EIR describes the regulatory setting and the methodology for this resource.

Existing Conditions

The project area is primarily disturbed and provides only marginal, degraded habitat for common urban species like the California ground squirrel (*Spermophilus beecheyi*), Western grey squirrel (*Sciurus griseus*), and common birds, raccoons, possums, and other urbanized species due to the presence of stored materials and equipment for the city of Sacramento. The majority of the site consists of a dirt lot with limited grasses and some bushes and trees. On the north edge of the RDC1 Stability Berm footprint, the vegetation transitions into trees along the property line. These trees are primarily non-native tree of heaven (*Ailanthus altissima*), with some intermixed black willow (*Salix nigra*) and pine trees (*Pinus spp*.). The trees are covered with heavy vines such as Himalyan blackberry (*Rubus armeniacus*) and California wild grape (*Vitis californica*). Beyond the fenceline into the adjacent property, the site was, until recently, inaccessible due to thick blackberry shrubs and vines.

On September 25, 2018 a fire started in a nearby homeless camp and burned through the blackberry shrubs, effectively removing them from the project area. Trees along the fenceline bordering the two parcels were scorched, and most would recover from the blaze. The fire drastically changed the preconstruction site condition, as can be seen in Figures 4 and 5 below.

Figure 4. RDC1 Site Condition Before the Fire.

Figure 5. RDC1 Site Condition After the Fire.

Environmental Effects

Significance Criteria

Effects on vegetation and wildlife would be considered significant if the proposed action would result in any of the following:

- Substantial loss, degradation, or fragmentation of any natural communities or wildlife habitat.
- Substantial effects on a sensitive natural community, including federally protected wetlands and other waters of the U.S., as defined by Section 404 of the Clean Water Act.
- Substantial reduction in the quality or quantity of important habitat, or access to such habitat for wildlife species.
- Substantial conflict with the City of Sacramento Protection of Trees Ordinance.

Alternative 1 – No Action

Under the No Action alternative, the Corps would not construct the RDC1 Stability Berm and the Sacramento River east levee would remain susceptible to through-seepage. No effects to vegetation or wildlife in the project area due to project construction would occur. The site is expected to recover from the fire, with nonnative blackberry shrubs remaining its dominant flora.

However, if a flood event were to occur, and floodfighting were required in this area, significant adverse impacts to existing vegetation and any wildlife harboring there could result, including loss of trees and vegetation.

Alternative 2 – Proposed Action

Construction of the RDC1 Stability Berm would require the removal of six trees that are currently in conflict with the berm's footprint. Four of the six trees are non-native tree of heaven, with two being black willows. Additionally, four of the six trees are multi-trunk tree clusters. The combined canopy cover of these trees is 0.13 acre. The details of the trees are as follows:

1) Tree of heaven, single trunk, 12 inches diameter at breast height (dbh).
2) Tree of heaven, multi-trunk with 4 stems at 6, 8, 10, and 12 inches dbh.
3) Tree of heaven, multi-trunk with 5 stems, 4 stems at 10 inches dbh and 1 stem at 12 inches dbh.
4) Black willow, multi-trunk with 4 stems, 2 stems at 8 inches dbh, 1 stem each at 6 and 10 inches dbh.
5) Black willow, multi-trunk with 4 stems at 8, 10, 12, and 14 inches dbh.
6) Tree of heaven, single trunk, 12 inches dbh.

In addition to the tree removal, the site would be cleared and grubbed of grasses and small shrubby vegetation prior to construction, including the landside levee slope. Shrubby vegetation and tree stumps and roots would likely be chipped down and hauled out for off-site disposal. The stripped topsoil and grasses could be disposed of off-site, or could be staged onsite for reuse following construction. The trees being removed were not significantly affected by the fire on the site, and the majority of the trees that were affected are outside of the project's potential impact area.

While the tree removal is occurring in the city of Sacramento, a tree permit is not required due to an exemption included in the Tree Ordinance (Sacramento City Code 12.56.080 F). The exemption applies specifically to public agencies working on flood protection work on public properties. Since the Corps, CVFPB, and SAFCA are all public agencies, and the project area is public land owned by the City of Sacramento and California State Parks, this exemption applies to the project and no tree removal permit is required.

In 2015, during preparation of the ARCF GRR EIS/EIR, the Corps coordinated with the U.S. Fish and Wildlife Service (USFWS) under the Fish and Wildlife Coordination Act (legal reference) to consider potential effects to vegetation and wildlife from implementation of the overall ARCF 2016 project. On October 5, 2015, the USFWS issued a final Coordination Act Report to the Corps that provided recommendations to the Corps to mitigate adverse effects to vegetation and wildlife that occur from ARCF 2016 project implementation (USFWS File # 08ESMF00-20 13-CPA-0020). The effects associated with the removal of trees for construction of the RDC1 stability berm are covered under this Coordination Act Report (Appendix A).

With implementation of the USFWS recommendations, vegetation removal during construction of the proposed action would be less than significant. These recommendations would also minimize any potential adverse effects to wildlife species and vegetation removal to less than significant.

Following the completion of construction, the RDC1 Stability Berm would be incorporated into the Sacramento River Flood Management System, and thus would be maintained in accordance with typical O&M practices for the levee system. In order to maintain access and visibility for the City workers, the berm would be mowed regularly. This mowing would be consistent with current O&M practices and would not result in a significant adverse effect.

Avoidance, Minimization, and Mitigation Measures

The following recommendations from the USFWS Coordination Act Report would be implementation to minimize effects to vegetation and wildlife to less than significant.

- Woody vegetation that needs to be removed within the construction footprint should be removed during the non-nesting season (November to February) to avoid affecting active migratory bird nests.
- Avoid impacts to migratory birds nesting in trees adjacent to the project area by conducting pre-construction surveys for active nests along proposed haul roads, staging areas, and construction sites. Work around active nests should be avoided until the young have fledged. The following protocol from the CDFW for Swainson's hawk would be followed for the pre-construction survey for raptors:

  A focused survey for Swainson's hawk nests would be conducted by a qualified biologist during the nesting season (February 1 to August 31) to identify active nests within 0.25 mile of the project area. The survey would be conducted no less than 14 days and no more than 30 days prior to ***the*** *beginning of construction. If nesting Swainson's hawks are found within 0.25 mile of the project area, no construction would occur during the active nesting season of February 1 to August 31, or until the young have fledged (as determined by a qualified biologist), unless otherwise negotiated with the California Department of Fish and Wildlife.*

- Avoid future impacts to the site by ensuring all fill material is free of contaminants.
- Minimize project impacts by reseeding all disturbed areas, including staging areas, at the completion of construction with native forbs and grasses. Reseeding should be conducted just prior to the rainy season to enhance germination and plant establishment. The reseeding mix should include species beneficial for native pollinators.
- Minimize the impact of removal and trimming of all trees and shrubs by having these activities supervised and/or completed by a certified arborist.

- Compensate the loss of oak woodland, riparian forest, riparian scrub-scrub, and emergent wetland at a ratio of at least 2:1. The Corps has coordinated with USFWS and determined that the 2:1 ratio should be applied to habitat canopy acreage. The estimated habitat canopy acreage lost on the RDC1 Stability Berm site is 0.13 acre. As a result, the Corps would mitigate through the planting of 0.26 acre of native riparian woodland species, which would be incorporated into the forthcoming Beach-Stone Lakes Mitigation Site. The draft EA/IS for the Beach-Stone Lakes Mitigation Site would be available for public review in spring 2019.

3.2.11 Water Quality

Section 3.5 of the ARCF GRR Final EIS/EIR (Corps, 2016) describes the regulatory setting and the methodology for this resource.

Existing Conditions

The existing conditions for water quality in the Sacramento River watershed are thoroughly discussed in the EIS/EIR. The project area is located fully on the landside of the levee, and there are no surface water features in the impact area. There are curbs and stormwater drainage features along Front Street which drain to the river.

Environmental Effects

Significance Criteria

An effect to water quality from construction of the RDC1 Stability Berm would be considered significant if it 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.

Alternative 1 – No Action

Under the No Action alternative, the Corps would not construct the RDC1 Stability Berm and the Sacramento River east levee would remain susceptible to through-seepage. No adverse effects to water quality in the project area due to project construction would occur. However, in the event of levee failure and a consequent flood, there would likely be a significant degradation of water quality in the watershed including contaminants and wastes washed into floodwaters, creating hazardous water quality conditions within an indeterminate area for an indeterminate period.

Alternative 2 – Proposed Action

Construction of the RDC1 Stability Berm would not affect the Sacramento River, since all construction activities would be conducted on the landside of the levee. However turbid runoff water from earth-moving activities could enter the stormwater system along Front Street. By implementing appropriate avoidance and minimization measures during construction, including a site-specific Stormwater Pollution Prevention Plan (SWPPP), the impact of this adverse effect, if any, would be reduced to less than significant.

Since the proposed action involves only limited and shallow excavation work adverse effects to groundwater are unlikely. The risk of spills of fuels and oils occurring during equipment maintenance in the staging area would be reduced by implementation of appropriate avoidance and minimization measures detailed below. Accordingly no significant adverse impact to groundwater quality is expected.

Antidegradation Considerations:

All wastewater discharges would comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan.

As part it states:

- Any discharge of waste to high quality waters would apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water possible consistent with the maximum benefit to the people of the state.

- This information would be presented as an analysis, as measured by background concentrations and applicable water quality objectives.

Avoidance and Minimization Measures

Prior to construction, contractor would be required to prepare and implement a SWPPP The Contractor is not expected toobtain a National Pollution Discharge Elimination System permit and have to comply with all conditions of the permit. If it is needed, this plan would detail the construction activities to take place, Best Management Practices (BMPs) to be implemented to prevent any discharges of contaminated stormwater into waterways, and inspection and monitoring activities that would be conducted. By applying these requirements, effects on water quality due to the proposed action would be less than significant.

4.0 CUMULATIVE EFFECTS

NEPA and CEQA require the consideration of cumulative effects of the proposed action, combined with the effects of other projects. NEPA defines a cumulative effect as an effect on the environment consisting of the incremental effect of an action when combined with other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 C.F.R. § 1508.7). The CEQA Guidelines define cumulative effects as "two or more individual effects which, when considered together, compound or increase other environmental impacts" (C.C.R. Section 15355).

Cumulative environmental effects expected from the overall ARCF 2016 project were covered in Section 4.2 of the ARCF GRR EIS/EIR (Corps, 2016). The analysis in the EIS/EIR sets up a thorough methodology and defines a geographic scope for ARCF 2016 and is incorporated here by reference. The temporal scope for purposes of the RDC1 Stability Berm cumulative effects analysis would include past projects that continue to effect the project area in the summer of 2019, projects that are under construction in the summer of 2019, and future projects that are reasonably foreseeable that could impact the future operation of the RDC1 Stability Berm.

4.1 Past, Present, and Reasonably Foreseeable Future Projects

The ARCF GRR EIS/EIR established a number of other area projects that were considered in the cumulative effects analysis for the overall ARCF 2016 project. However, since the RDC1 Stability Berm project area is just a fraction of the overall ARCF 2016 project, the list below includes past, present and reasonably foreseeable future projects within a narrow geographic and temporal scope consistent with the small footprint of this action.

The cumulative effects resulting from other foreseeable seepage berm and bank erosion work of the larger project in the future would include the short-term increased electrical delivery needed for construction activities. These effects relating to future seepage berm/stability work could be adverse and require mitigation measures to reduce the effect, but other small reaches similar in size to this contract are not expected to be significant.

4.1.1 Lower American River Common Features Project

Based on congressional authorizations in WRDA 1996 and WRDA 1999, the Corps, 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 the construction of 26 miles of slurry walls on the 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.

4.1.2 American River Common Features, Natomas Basin Project

In 2007, the Natomas Levee Improvement Project was authorized as an early-implementation project initiated by SAFCA in order to provide flood protection to the Natomas Basin as quickly as possible. These projects consisted 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 the Corps 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, Natomas Basin Project. Construction on the early implementation project was completed in 2013, and included approximately 18 miles of levee improvements.

The remaining 24 miles of levee improvements under the ARCF Natomas Basin Project were authorized in the Water Resources Reform and Development Act of 2014. The Corps initiated construction in 2018 on the Natomas Cross Canal in Sutter County, and on the American River north levee adjacent to Discovery Park. Proposed improvement primarily involve constructing cutoff walls through the levees, or alternatively an adjacent levee in some reaches. Construction on the Natomas Basin Project is anticipated to continue through 2024.

4.1.3 Sacramento River Bank Protection Project

The Sacramento River Bank Protection Project (SRBPP) was authorized to protect the existing levees and flood control facilities of the Sacramento River Flood Control Project. The SRBPP was instituted in 1960 to be constructed in phases. Bank protection has generally been constructed on an annual basis. Phase I was constructed from 1963 to 1975, and consisted of 436,397 linear feet of bank protection. Phase II was authorized in 1974 and provided 405,000 linear feet of bank protection. The SRBPP directs the Corps to provide bank protection along the Sacramento River and its tributaries, including that portion of the lower American River bordered by Federal flood control project levees. Beginning in 1965, erosion control projects at twelve sites covering 16,141 linear feet of the south and north banks of the lower American River have been implemented. This is an ongoing project, and additional sites requiring maintenance would continue to be identified indefinitely until the remaining authority of 4,966 linear feet is exhausted over the next 3 years. WRDA 2007 authorized an additional 80,000 linear feet of bank protection to Phase II, which would be initiated upon approval of the SRBPP Post Authorization Change Report. Construction proposed for 2019 includes a site on the Feather River levee well to the north of the RDC1 project area.

4.1.4 West Sacramento GRR

The West Sacramento GRR study determined the Federal interest in reducing the flood risk within the West Sacramento project area. The purpose of the West Sacramento GRR is to bring the 50-miles of perimeter levees surrounding West Sacramento into compliance with applicable Federal and State standards for levees protecting urban areas. Proposed levee improvements would address: (1) seepage; (2) stability; (3) levee height; and (4) erosion concerns along the West Sacramento levee system. Measures to address these concerns would include: (1) seepage cutoff walls; (2) stability berms; (3) stability berms; (4) levee raises; (5) flood walls; (6) relief wells; (7) sheet pile walls; (8) jet grouting; and (9) bank protection. The GRR was authorized in WRDA 2016, and in the Fiscal Year 2019 work plan received initial funding to begin preconstruction design. However, under the West Sacramento Area Flood Control Agency's 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 Sacramento River in the northern portion of the city near the neighborhood of Bryte, and improvements to the south levee of the Sacramento Bypass. In addition, the Southport setback levee is currently under construction as part of a local effort, which includes all of the proposed levee improvements under the study to the Sacramento River on the West Sacramento south basin.

4.1.5 Folsom Dam Safety and Flood Damage Reduction Project

The Folsom Dam Safety and Flood Damage Reduction Project, referred to as the Joint Federal Project (JFP), 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 Folsom JFP was completed in fall 2017.

4.1.6 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 the 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 operational 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 to inform dam operation. 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 that implements the recommendations of the analysis.

It should be noted that the initial WCM Update effort would focus on additional operational capabilities created by the auxiliary spillway. The Water Control Manual would be further revised in the future to reflect the capabilities to be provided by the Folsom Dam Raise Project and ARCF 2016, as appropriate.

4.1.7 Folsom Dam Raise Project

Construction of the Folsom Dam Raise project would follow 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. Similar to the ARCF 2016 Project, the Folsom Dam Raise Project was fully funded by the Bipartisan Budget Act of 2018. Construction on the Folsom Dam Raise Project is scheduled to begin in 2019 with the Dike 8 construction, followed by Dike 7 in 2020, Dikes 1 through 3, the wing dams, and MIAD in 2021, and completing the project with Dikes 4 through 6 in 2022.

4.1.8 American River Common Features 2016 Project

The greater ARCF 2016 project is scheduled for construction from 2019 through 2024. The project would involve 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. 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, the Corps would widen the Sacramento Weir and Bypass. The project would also involve construction of a number of mitigation sites in the area.

In the summer of 2019, the first mitigation site is scheduled to be constructed concurrently with RDC1. SAFCA would lead construction on a riparian and woodland mitigation site referred to as the Beach-Stone Lakes Mitigation Site (BSLMS) adjacent to the Sacramento River and Morrison Creek near the southern limits of the ARCF 2016 project area. The BSLMS would incorporate mitigation for the impacts to trees associated with the RDC1 Stability Berm construction, as well as other construction actions planned for 2020 and 2021 along the Sacramento River east levee.

4.1.9 The Bridge District Redevelopment

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 the development of a well-planned, waterfront orientated urban district for the City of West Sacramento along the west bank of the Sacramento River. The transition from the industrial past to the vision of an urban mixed-use district is well underway.

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 just south of Raley Field along the Sacramento River. Ongoing development includes additional housing units that are currently under construction.

4.1.10 Sacramento Railyards Redevelopment

The Railyards property is located just north of Downtown and south of the River District. Once serving 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, 2018).

4.1.11 Street Bridge Replacement Project

The City of Sacramento and City of West Sacramento are partnering on replacement of the over 100 year old I Street Bridge. The I Street Bridge Replacement project would include construction of a new bridge upstream of the existing I Street Bridge. The new bridge would cross the Sacramento River between the Sacramento Railyards and the West Sacramento Washington planned developments and provide a new bicycle, pedestrian, and automobile crossing. The existing I Street Bridge would continue to be used by the railroad. The approach viaducts to the existing I Street Bridge would be demolished, which should result in better access to the water front in both cities. A draft EA/EIR was released for public review in the fall of 2017. Construction is not anticipated to begin until 2021.

4.2 Cumulative Effects Analysis

4.2.1 Air Quality

Air pollutant emissions from the proposed action would combine with other local construction projects scheduled for the summer of 2019 to create a cumulative effect, including the Natomas Basin Project, the multiple redevelopment projects, and the BSLMS. The incremental addition of each of these actions occurring simultaneously could contribute to emissions of pollutants that could exceed local threshold levels. However, the emissions associated with the RDC1 Stability Berm are comparatively low and would be minimized to the maximum extent practicable through adherence to best management practices. Additionally, each local project would be required to implement mitigation to reduce its emissions.

Any project that violates applicable air quality thresholds would be required to purchase offset credits to mitigate for its adverse impacts. Modeling shown in Section 3.2.1 above indicates that the incremental contribution of air pollutants from the RDC1 project would be extremely low. As a result, the project's cumulative effect on air quality would be less than significant, in light of its small scale, short duration, and implementation of the proposed avoidance and minimization measures enumerated in Section 3.2.1

4.2.2 Climate Change

It is unlikely that any single project by itself could have a significant impact on the environment with respect to GHGs. However, the cumulative effect of human activities has been linked to quantifiable changes in the composition of the atmosphere, which, in turn, have been shown to be the main cause of global climate change (IPCC 2014). Therefore, the analysis of the environmental effects of GHG emissions is inherently a cumulative impact issue. While the emissions of one single project would not cause global climate change, GHG emissions from multiple projects throughout the world are causing a cumulative effect with respect to global climate change.

Similar to air quality, the cumulative emissions associated with construction of RDC1, BSLMS, and the Natomas Basin project, in addition to local redevelopment actions could contribute to a local exceedance of the SMAQMD threshold for GHG emissions during the 2019 construction season. Each of these projects would be required to reduce its GHG emissions to the maximum extent practicable in accordance with State policies. Similarly, the RDC1 Stability Berm project would implement additional emission reduction measures as detailed in Sections 3.2.1 and 3.2.2 in order to minimize effects to the maximum extent practicable. The GHG emissions associated with this action are minimal, when compared to other sources contributing to the cumulative condition in the Sacramento region. As a result, with the implementation of the minimization measures, cumulative effects would be less than significant.

In addition, many of the related projects are flood risk management projects. By implementing these projects, the action agencies would be reducing potential future emissions associated with flood fighting and future emergency actions. The related projects could combine to reduce long-term potential GHG emissions in the Sacramento metropolitan area. As a result, the overall cumulative GHG emissions from these projects are considered to be less than significant.

4.2.3 Cultural Resources

Cumulative effects to cultural resources were adequately covered in the ARCF GRR EIS/EIR (Corps, 2016). The relevant new information for this EA/IS incorporates the temporal scope of the project, and identifies the projects being constructed concurrently with this action (i.e., the redevelopment projects, Natomas Basin Project, and BSLMS). The effects associated with these actions remain consistent with those described in the EIS/EIR, including cumulative effects associated with the described past and future projects.

4.2.4 Hazardous Wastes and Materials

The ARCF GRR EIS/EIR did not identify any potential cumulative effects to hazardous wastes from implementation of the overall project, in combination with other local projects. No new information has been identified to change this determination. Effects associated with hazardous wastes would be site-specific and would not combine with effects from other local projects to create a cumulative effect.

4.2.5 Recreation

The ARCF GRR EIS/EIR concluded that cumulative effects to recreation would only occur if two projects were constructing adjacent to each other, such as the ARCF 2016 project and the West Sacramento GRR. This is not anticipated to occur during the summer of 2019 when the RDC1 Stability Berm project would be under construction. Furthermore, the RDC1 project would not result in the closure of any recreation facilities, so there would be no cumulative effects to recreation that would result from this action.

4.2.6 Traffic

The ARCF GRR EIS/EIR did not identify any potential cumulative effects to traffic from implementation of the overall project, in combination with other local projects, since access and haul routes had not been identified at the time of the study. Of the identified local projects above, the only project that could potentially have a conflict with the RDC1 Stability Berm's haul traffic is any hauling associated with the Sacramento Railyards Redevelopment project, which is scheduled to potentially have two phases under construction in 2019: the new Kaiser Permanente campus, and a residential development.

The likely access route for the RDC1 Stability Berm would likely be via Highway 50 to Broadway to Front Street, and the likely access route for the Railyards is likely Interstate 5 to Richards Boulevard. The RDC1 Stability Berm's haul route is not likely to be used by the Railyards project, as it would require Railyards haul vehicles to access the area through Old Sacramento, which would not be an efficient transportation route. Similarly, if Corps construction vehicles used Interstate 5 to Richards Boulevard or J Street to access the project area, they would also need to either access through Old Sacramento or other more congested parts of downtown Sacramento. As a result, it is reasonable to assume that haul routes from these projects would not be in conflict with each other. Therefore, the Corps has determined that cumulative effects from these actions would be less than significant, with the implementation of the minimization measures discussed for the RDC1 Stability Berm project, including repairing any damage to local roadways.

4.2.7 Aesthetics

While the local projects identified above could cause a cumulative loss of visual quality during and after construction, none of these projects are in the same viewscape as the RDC1 Stability Berm. As a result, no adverse cumulative effects associated with implementation of the proposed action is anticipated.

4.2.8 Land Use

The ARCF GRR EIS/EIR did not identify any potential cumulative effects to land use from implementation of the overall project, in combination with other local projects. No new information has been identified to change this determination. Effects associated with land use would be site-specific and would not combine with effects from other local projects to create a cumulative effect.

4.2.9 Noise

The only projects assessed in the ARCF GRR EIS/EIR in close enough proximity to the RDC1 Stability Berm project to create a potentially adverse cumulative noise effect would be the West Sacramento GRR and the Bridge District redevelopment. However, the West Sacramento GRR would not be constructed adjacent to the RDC1 project area during the summer of 2019. The Bridge District redevelopment would likely be occurring in 2019, however, with both projects constructing during noise exemption hours, any cumulative effects would likely be less than significant. The additional local development projects identified in this EA/IS are not in sufficient proximity to the project area to contribute to a cumulative adverse noise effect.

4.2.10 Vegetation and Wildlife

Impacts to vegetation and wildlife associated with the RDC1 Stability Berm, including the removal of the six identified trees, are not likely to contribute with other local projects to create a cumulative effect. The trees being removed under this action are on the landside of the levee and only provide intermittent habitat for species using the riparian corridor. Additionally, since the trees are primarily invasive, removing them and mitigating with native tree species is a beneficial impact to the overall ecosystem. Other flood risk management actions, as discussed in the ARCF GRR EIS/EIR, including future ARCF 2016 project actions, would result in further vegetation removal. However, mitigation actions such as the BSLMS would offset these effects. As a result, and with the implementation of the minimization measures discussed in Section 3.2.10 above, any cumulative effects to vegetation and wildlife would be less than significant.

4.2.11 Water Quality

The ARCF GRR EIS/EIR identified potential cumulative effects to water quality resulting from the combined effects of waterside construction and related increased turbidity in the Sacramento River. Since the RDC1 Stability Berm involves only landside work, and since any potential impacts from stormwater runoff would be minimized through implementation of required permits and BMPs, the RDC1 Stability Berm would not contribute to a cumulative adverse effect to water quality.

5.0 COMPLIANCE WITH LAWS AND REGULATIONS

5.1 Federal Laws and Regulations

5.1.1 Clean Air Act of 1972, as amended (42 U.S.C. 7401, et seq.)

Full Compliance. The Clean Air Act established National Ambient Air Quality Standards (NAAQS) and requires state and local agencies to develop State Implementation Plans (SIPs) for areas that exceed the NAAQS. Table 1 shows the maximum levels of pollutants allowed to remain in compliance with CAA regulations in the SMAQMD and Table 2 illustrates the estimated emissions based on the SMAQMD Road Construction Emissions Model (see Section 3.2.1, above). This analysis shows minimal emissions caused by the proposed action, and the proposed action is within general conformity limits, therefore the RDC1 Stability Berm project would be in full compliance with the Clean Air Act and General Conformity Rule.

5.1.2 Clean Water Act of 1972, as amended (33 U.S.C. 1251, et seq.)

Full Compliance. The Clean Water Act is the primary federal law governing water pollution. The proposed action would not involve the placement of fill materials or construction within surface waters, local waterways, or any other Waters of the U.S., therefore, the project is in full compliance with Section 401 and 404 of the Clean Water Act. Prior to construction, the contractor would be required to obtain a NPDES permit for potential effects to storm water discharge, including preparation of a SWPPP. With the implementation of these permits, the RDC1 Stability Berm project would be in full compliance with the Clean Water Act.

5.1.3 Endangered Species Act of 1973, as amended (16 U.S.C. 1531, et seq.)

Full Compliance. There is no habitat for, or presence of, any federally listed species in the RDC1 project area, so no consultation was required. Because the project would not trigger any requirements under the ESA, full compliance is assured.

5.1.4 Fish and Wildlife Coordination Act of 1958, as amended (16 U.S.C. 661, et seq.)

Full Compliance. The Fish and Wildlife Coordination Act requires federal agencies implementing water resource projects to consult with USFWS, NMFS, and California Department of Fish and Wildlife (CDFW) to determine a project's impacts to fish and wildlife. The Federal agency is required to consider the resource agencies' recommendations for mitigation to be implemented to address project effects. In 2015, during preparation of the ARCF GRR EIS/EIR, the Corps coordinated with USFWS to consider potential effects to vegetation and wildlife from implementation of the overall ARCF 2016 project. On October 5, 2015, the USFWS issued a final Coordination Act Report to the Corps that provided mitigation recommendations to the Corps (USFWS File # 08ESMF00-20 13-CPA-0020). The Corps considered all recommendations and responded to them in the final ARCF GRR EIS/EIR. Recommendations from the Coordination Act Report are proposed for implementation to reduce effects associated with tree removal for the RDC1 Stability Berm construction. The proposed action would therefore be in full compliance with this Act.

5.1.5 Migratory Bird Treaty Act of 1936, as amended (16 U.S.C. 703, et seq.)

Full Compliance. The Migratory Bird Treaty Act (MBTA) protects migrating birds from harm due to Federal projects. Surveys for migratory birds were conducted in 2018, with no presence of nesting migratory birds found in the project area. Surveys would be conducted again in 2019 prior to any construction. If nesting migratory birds are found to be occupying the project area, the Corps, CVFPB, and SAFCA would coordinate with the CDFW to determine necessary avoidance and minimization measures to reduce these effects. The RDC1 Stability Berm project would therefore be in full compliance with this Act.

5.1.6 National Environmental Policy Act of 1969, as amended (42 U.S.C. 431, et seq.)

Full Compliance. NEPA applies to all federal actions that affect the natural and human environment, and requires the full disclosure of all potential effects associated with the proposed action. Comments received during the public review period would be considered and incorporated into the final EA/IS. The District Engineer would determine if the proposed action qualifies for a FONSI or if an EIS must be prepared. These actions would complete the Corps' compliance with this Act.

5.1.7 National Historic Preservation Act of 1966, as amended (54 U.S.C. 300101)

Full Compliance. Section 106 of the National Historic Preservation Act requires Federal agencies to take into account the effects of a proposed undertaking on that properties that have been determined to be eligible for, or included in, the National Register of Historic Places (NRHP).

Compliance with Section 106 for the overall ARCF 2016 project is achieved through a Programmatic Agreement, which was executed for the final ARCF GRR on September 10, 2015. The Programmatic Agreement stipulates the process for assessing effects and establishing mitigation for cultural and historic resources. With the execution of the Programmatic Agreement, the RDC1 Stability Berm project would therefore be in full compliance with the National Historic Preservation Act.

5.2 State and Local Laws and Regulations

5.2.1 California Clean Air Act of 1988, California Health and Safety Code § 40910, et seq.

Full Compliance. Section 3.2.1 of this document discusses the effects of the proposed Project on local and regional air quality. The CARB is responsible for the development, implementation, and enforcement of California's motor vehicle pollution control program, GHG statewide emissions and goals, and development and enforcement of GHG emission reduction rules. Section 202(a) of the California Clean Air Act (CCCA) requires projects to determine whether emission sources and emission levels significantly affect air quality based on Federal standards established by the USEPA and State standards set by CARB. SMAQMD has local jurisdiction over the Project area. The analysis in Section 3.2.1 shows that expected short-term Project-related emissions are not expected to exceed local thresholds of the CCCA as administered by SMAQMD or annual general conformity thresholds. Additionally, SMAQMD recommends that a lead CEQA agency consider a GHG emissions threshold of 1,100 metric tons/year. Although the Proposed Action would cause GHG emissions from its use of construction-related equipment, emissions are not expected to exceed local thresholds established by SMAQMD. Additional BMPs would be incorporated to reduce GHG emissions during construction, to the maximum extent feasible.

5.2.2 California Environmental Quality Act of 1970, California Public Resources Code § 21000-21177

Full Compliance. The CVFPB as the non-federal sponsor and CEQA lead agency, would undertake activities to ensure compliance with the requirements of this Act. CEQA requires the full disclosure of the environmental effects, potential mitigation, and environmental compliance of the Project. Adoption of this Final EA/IS and a MND by the CVFPB would provide full compliance with the requirements of CEQA.

5.2.3 California Endangered Species Act, 14 C.C.R. § 783-786.6

Full Compliance. This Act requires non-federal agencies to consider the potential adverse effects to State-listed species. As discussed in Section 3.2.1 of this document, activities associated with the Proposed Action are not anticipated to adversely impact any State-listed species, so no further action is required to achieve compliance with this Act.

5.2.4 California Fish and Game Code §3503

Full Compliance. Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nests of eggs of any bird. Section 3503.3 states that it is unlawful to take, possess, or destroy any raptors, including nests or eggs. As discussed in Section 3.2.10 of this document, activities associated with the proposed project are not anticipated to adversely impact nesting birds, raptors, or their eggs. Surveys for nesting and migratory birds were conducted in 2018, with no presence found in the project area. Surveys would be conducted again in 2019 prior to any construction. If nesting birds or raptors are found to be occupying the project area, the Corps, CVFPB, and SAFCA would coordinate with CDFW to determine necessary avoidance and minimization measures to reduce these effects.

5.2.5 Porter-Cologne Water Quality Control Act of 1970

Full Compliance. This Act requires that each of the State's nine Regional Water Quality Control Boards (RWQCBs) prepare and periodically update basin plans for water quality control. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCB's jurisdiction includes federally protected waters as well as areas that meet the definition of "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the State's boundaries. There are no waters within the RDC1 Stability Berm project area qualify as Waters of the State, so no further action is required to remain compliant with this Act.

5.2.6 City of Sacramento Tree Ordinances

Full Compliance. City of Sacramento Tree Ordinances. Ordinance No. 2016-0026 of the Sacramento City Code addresses the protection of trees within the City boundaries, including general protection of all trees on City property and specific protection of certain trees located on private property deemed Private Protected Trees. Per Section 12.56.080F, a tree permit is not required for a public agency that performs any flood protection work on public property or within a public easement that could cause injury to or the removal of a city tree or private protected tree. This exemption would apply to the RDC1 Stability Berm.

6.0 FINDINGS

This Final EA/IS evaluated the environmental effects of the proposed RDC1 Stability Berm. Potential adverse effects to the following resources were evaluated in detail: air quality, climate change, cultural resources, hazardous wastes and materials, recreation, traffic, aesthetics, land use, noise, vegetation and wildlife, and water quality.

Analysis provided in the Final EA/IS together with field visits and coordination with other agencies, indicates that the proposed project would have no significant long-term adverse effects on environmental resources. Short-term effects during construction would either be less than significant or would be minimized to less than significance using best management practices.

Based on this evaluation, the proposed project qualifies for a FONSI as described in 40 CFR 1508.13. A FONSI could be prepared when an action would not have a significant effect on the human environment, and for which, an environmental impact statement would not be prepared. Therefore, a final FONSI has been prepared and accompanies this EA.

Based on this evaluation, the proposed project meets the requirement of a mitigated negative declaration, which could be prepared when there is no substantial evidence that a project or any of its aspects could result in significant impacts to the environment (CEQA Guidelines Section 15070). Therefore, a final mitigated negative declaration has been prepared and accompanies this IS.

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