Meeting of the Central Valley Flood Protection Board
December 20, 2013

Staff Report – Site R3A, L10, L7 and R7 Levee Improvement Project EA/IS

US Army Corps of Engineers (USACE)
American River Common Features Project, Sacramento County

BOARD ACTION

Consider Approval of Resolution No. 2013-28 to:

1. Adopt the Mitigated Negative Declaration, Findings, and Mitigation, Monitoring and Reporting Plan for the R3A, L10, L7 and R7 Levee Improvement Projects and delegate authority to the Executive Officer to execute the Notice of Determination;

2. Approve the R3A, L10, L7, R7 Levee Improvement Projects.

SPONSORS

The R3A, L10, R7 and L7 Levee Improvement Projects, part of the American River Common Features Project, is a cooperative effort between the US Army Corps of Engineers (USACE), the State of California (CVFPB), and the Sacramento Area Flood Control Agency (SAFCA).

LOCATION AND BACKGROUND

Site R3A is located along Business 80 (Capital City Freeway) across from the California Exposition Center. Site L10 is located along the south side of the American River at Howe Ave Bridge. Both Sites R7 and L7 are located at the H Street Bridge.

The American River Watershed Common Features Project was initially described in the Supplemental Information Report and was first authorized in Water Resources Development Act (WRDA) of 1996 and modified in WRDA 1999. The State authorized the American River Watershed Common Features Project in 1997 under California Water Code Sections 12670.10, 12670.14 and 12670.16. The American River Watershed Common Features, as modified by Water Development Act of 1996, is a cooperative effort among the US Army Corps of Engineers, the Central Valley Flood Protection Board and the Sacramento Area Flood Control Agency.

The American River Watershed Common Features Project, California, Lower American River Features as modified by WRDA 1996, Supplemental Environmental Impact Study/Environmental Impact Report (SEIS/EIR) was completed in 1996. The R3A, L10,

R7 and L7 portions of the SEIS/EIR are now being updated in this Environmental Assessment/Initial Study (EA/IS).

This EA/IS describes the existing environmental resources in the project area, evaluates the environmental effects of the alternatives on these resources, and identifies measures to avoid or reduce any effects to less than significant. This EA/IS has been prepared in accordance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

DESCRIPTION

For Site R3A, levee improvements will be made in two locations on the American River North levee on both sides of Business 80 (Capital City Freeway). The improvements will consist of extending the existing cutoff wall by approximately 75-feet on the upstream side of the Capital City Freeway and 67-feet downstream of the expressway. Extension of the existing cutoff wall will be accomplished using jet grouting.

For Site L10, levee improvements will be made on the American River levee on the south side of the American River at Howe Avenue. A 780 foot soil-cement cutoff wall will be installed under the Howe Avenue bridge. The new cutoff wall will be installed using jet grouting and will pass under the bridge, then ascend the levee on both sides of the bridge to a terminal point with the existing cutoff. In addition to that new cutoff wall, a low permeability soil blanket will be installed on the waterside slope and connecting with the new cutoff wall.

Site R7 is located at H Street Bridge. The existing levee is approximately 11 feet in height (as measured from the landside toe) with a crown width of approximately 10 to 15 feet in the levee section. There is an asphalt road on the levee crown on both sides of the H Street Bridge. There are unpaved dirt ramps on both sides of the bridge connecting the levee crown to an asphalt pedestrian path on the waterside of the levee, and an asphalt ramp down to a path on the landside that runs parallel to Fair Oaks Boulevard. The length of the "window" is approximately 151 feet and will be filled using jet grout.

Site L7 is directly across the river from Site R7. The existing left bank (west) levee of the American River at Site L7 is approximately 12 feet in height (as measured from the landside toe) with a crown width of approximately 18 to 20 feet in the levee section. There is an asphalt road on the levee crown on both sides of the H Street Bridge. There are unpaved dirt ramps on both sides of the bridge connecting the levee crown to an asphalt pedestrian path on the waterside of the levee, and an asphalt ramp down to a path on the landside that runs parallel to H Street. The length of the "window" is approximately 325 feet and will also be filled using jet grout.

Jet grout construction involves injecting fluids and binders into the soil at very high pressures. The process involves drilling a hole straight down into the levee to the desired depth, then injecting air, water, and grout into the hole through a high-pressure

nozzle. As the fluid is injected from the bottom to the top of the hole, the high pressure excavates the soil around the nozzle to a radius of four to six feet. The nozzle is rotated and lifted at a slow, smooth constant speed to achieve thorough mixing and consistent quality. The grout then solidifies to create a column of low permeability. Multiple columns constructed together create a wall through the levee that prevents seepage. The jet grout cutoff wall would extend 15 to 25 feet beyond the existing cutoff walls to provide an overlap.

After construction is completed, responsibility for the projects will be turned over to CVFPB, the non-Federal sponsor for the project. This would include operation, maintenance, repair, rehabilitation, and replacement of all project features. CVFPB would transfer these responsibilities to SAFCA, who would contract with ARFCD to operate and maintain the levees. Regular maintenance activities include mowing and spraying the levee slopes, controlling rodents, clearing the maintenance road, and inspecting the levee.

PROPOSED CEQA FINDINGS

This EA/IS evaluated the environmental effects of the proposed project of constructing levee improvements at Site R3A, L10, R7 and L7 on the American River in East Sacramento. Potential adverse effects to the following resources were evaluated in detail: recreation, special status species, vegetation and wildlife, air quality, climate change, water resources and quality, traffic and circulation, aesthetics, noise and vibration, cultural resources, and hazardous materials. Results of the EA/IS, field visits, and coordination with other agencies indicate that the proposed project would have no significant long-term effects on environmental resources. Short-term effects during construction would either be less than significant or mitigated to less than significance using BMPs and other mitigation measures.

The Central Valley Flood Protection Board, as the non-Federal sponsor, has evaluated this project under CEQA guidelines and has determined that although the project could have a significant impact on the environment, mitigation measures have been incorporated into the project that reduce these impacts to less than significant. A Mitigated Negative Declaration is attached to this document reflecting this determination

STAFF RECOMMENDATION

CVFPB Staff recommends that the board approve Resolution No. 2013-28 to adopt the Mitigated Negative Declaration, Findings and Mitigation, Monitoring and Reporting Plan; delegate authority to the Executive Officer to execute the Notice of Determination for the Sites R3A, L10, R7 and L7 Levee Improvement Projects; approve the Site R3A, L10, R7 and L7 Levee Improvement Projects.

LIST OF ATTACHMENTS

A. Resolution No. 2013-28: Site R3A, L10, R7, L7 Levee Improvement Projects
B. Environmental Assessment/Initial Study, Mitigated Negative Declaration, Finding of No Significant Impact
C. Mitigation, Monitoring and Reporting Plan
D. Notice of Determination

STATE OF CALIFORNIA
THE RESOURCES AGENCY
CENTRAL VALLEY FLOOD PROTECTION BOARD
RESOLUTION 2013-28
AMERICAN RIVER WATERSHED COMMON FEATURES PROJECT, CALIFORNIA
LOWER AMERICAN RIVER FEATURES AS MODIFIED BY WATER RESOUCES DEVELOPMENT ACT OF 1996
R3A, L10, R7, L7 LEVEE IMPROVEMENT ELEMENTS

WHEREAS, the Central Valley Flood Protection Board, (formerly known as The Reclamation Board) is the non-federal sponsor and California Environmental Quality Act (CEQA) lead agency for the American River Watershed Common Features Project, California, Lower American River Features as Modified by the Water Resources Development Act of 1996, Site R3A, L10, R7, L7 Levee Improvement Elements, (Projects) and the U.S. Army Corps of Engineers is the federal sponsors and lead agency under the National Environmental Policy Act (NEPA) and Sacramento Area Flood Control Agency is the local sponsor and responsible agency under CEQA; and

WHEREAS, Congress authorized levee improvements known as American River Watershed Common Features Project in the Water Resources Development Act (WRDA) of 1996, (Public Law 104-303); and

WHEREAS, the State authorized the American River Watershed Common Features Project in 1997 under California Water Code Sections 12670.10, 12670.14 and 12670.16; and

WHEREAS, in 1996 the USACE prepared and circulated a Supplemental Environmental Impact Statement/Supplemental Environmental Impact Report (SEIS/SEIR), and Environmental Assessments/Initial Studies with Findings of No Significant Impact and Mitigated Negative Declarations for American River Watershed Common Features Project, California, Lower American River Features as Modified by the Water Resources Development Act of 1996, (WRDA 1996 Project); and

WHEREAS, the Corps determined that one reach of the levee on the north bank of the American River could not pass 160,000 cfs; and

WHEREAS the work necessary to correct the deficiencies and the associated environmental impacts on the Lower American River near Sites R3A, L10, R7, L7 Levee Improvement Projects, have been further defined; and

WHEREAS a draft EA/IS and a draft Mitigated Negative Declaration for the Project were circulated for public review from July 26, 2013 to August 26, 2013; and

WHEREAS, comments on the draft EA/IS have been received and responses prepared and included in a Final EA/IS.

NOW, THEREFORE, BE IT RESOLVED that the Board

1. Has considered the Final EA/IS and finds that on the basis of the whole record, including comments received on the draft EA/IS, and mitigation measures that have been included in the Project, there is no substantial evidence that the proposed Project will have a significant effect on the environment, and that the Mitigated Negative Declaration reflects the independent judgment and analysis of the Board; and

2. Adopts the Mitigated Negative Declaration; and

3. Adopts the Mitigation, Monitoring and Reporting Plan; and

4. Approves the American River Watershed Common Features Project, California, Lower American River Features, R3A, L10, R7, L7 Levee Improvement Projects.

PASSED AND ADOPTED by vote of the Board on _____, 2013.

_____
William H. Edgar
President

_____
Jane Dolan
Secretary

FINAL
ENVIRONMENTAL ASSESSMENT/
INITIAL STUDY

AMERICAN RIVER COMMON FEATURES
WRDA 96 REMAINING SITES
SITES L7, L10, R3A, and R7

US Army Corps of Engineers

Central Valley Flood Protection Board

SAFCA Sacramento Area Flood Control Agency

Sacramento District
South Pacific Division

October 2013

Approved for public release, distribution is unlimited.

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B. Construction Emissions Estimates using the Road Construction Emissions Model, Version 7.1.2
C. U.S. Fish and Wildlife Service Coordination Act Report
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Acronyms and Abbreviations

ARFCD	American River Flood Control District
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CAP	criteria air pollutant
CAR	Coordination Act Report
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County Parks	Sacramento County Department of Regional Parks
CVFPB	Central Valley Flood Protection Board
cy	cubic yards
dB	decibels
dBA	A-weighted decibels
DRRP	Diesel Risk Reduction Plan
DWR	Department of Water Resources
EA/IS	Environmental Assessment/Initial Study
EFH	essential fish habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EM	Engineering Manual
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ºF	degrees Fahrenheit
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
HTRW	hazardous, toxic, and radioactive waste
Ldn	day-night sound level
NAAQS	National Ambient Air Quality Standards
NEMDC	Natomas East Main Drainage Canal
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOx	nitrogen oxide
OSHA	Occupational Safety and Health Administration

$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
psi	pounds per square inch
RM	river mile
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SABA	Sacramento Area Bicycle Advocates
SacDOT	Sacramento County Department of Transportation
SAFCA	Sacramento Area Flood Control Agency
SEIS/EIR	Supplemental Environmental Impact Statement/Environmental Impact Report
SFNA	Sacramento Federal Ozone Nonattainment Area
SHPO	State Historic Preservation Officer
SIR	Supplemental Information Report
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Metropolitan Utility District
SO	sulfur oxides
SPCP	Spill Prevention and Countermeasure Plan
SRA	shaded riverine aquatic
SRBPP	Sacramento River Bank Protection Project
SRCSD	Sacramento Regional County Sanitation District
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminants
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VELB	valley elderberry longhorn beetle
WRDA	Water Resources Development Act

1.0 PURPOSE AND NEED FOR ACTION

1.1 Proposed Action

The U.S. Army Corps of Engineers (USACE) and the non-Federal sponsors, the State Central Valley Flood Protection Board (CVFPB) and the Sacramento Area Flood Control Agency (SAFCA), propose to reduce the risk of flooding in the city of Sacramento and surrounding areas through the installation of seepage remediation features in the levee system. This action involves sites remaining from the Water Resources Development Act of 1996 (WRDA 96) congressional authorization for the American River Common Features Project.

At the time of the original construction between 2000 and 2002, use of conventional construction techniques was impeded by appurtenances, utilities, or other features in the levees. These sites were set aside for later analysis. Techniques have since been developed that make these sites feasible for construction. The WRDA 96 American River Common Features Remaining Sites Project involves constructing seepage remediation features at these "remaining sites" in order to complete the system of previously constructed cutoff walls (Plate 1).

Although all sites are included in the WRDA 96 authority, each site requires additional assessment in order for construction to be implemented. The scheduling and implementation of the remaining sites is based on considerations such as obtaining additional geotechnical data, complexity of design (based on the original reasons for excluding the site), real estate issues, and availability of funding. The proposed action discussed in this Environmental Assessment/Initial Study (EA/IS) is to construct cutoff walls at Sites L7, L10, R3A, and R7 in order to connect previously constructed segments of cutoff walls in the levee system along the American River in Sacramento, California.

The project design would reduce flood risk by meeting the requirements as defined by: (1) current design criteria used to certify levees as providing 100-year flood protection under regulations adopted by the Federal Emergency Management Agency (FEMA); (2) design criteria under the USACE Engineer Manual (EM) 1110-2-1913; and (3) current congressionally authorized project criteria in order to convey emergency releases from Folsom Dam of 160,000 cubic feet per second (cfs).

1.2 Location of the Project Areas

Four sites along the American River in Sacramento, California are proposed for construction (Plate 1):

- Site L7 is located near River Mile (RM) 07 on the left (west) bank of the American River at the Fair Oaks Boulevard/J Street Bridge (Plate 2). The site extends for approximately 350 linear feet.

- Site L10 is located near RM 08 on the left (south) bank of the American River at the Howe Avenue Bridge (Plate 3). The site extends for approximately 540 linear feet.

- Site R3A is located near RM 04 on the right (north) bank of the American River at the Business 80 Bridge (Plate 4). This site extends for approximately 325 linear feet.

- Site R7 is located near RM 07 on the right (east) side of the American River at the Fair Oaks Boulevard/J Street Bridge (Plate 5). The site extends for approximately 175 linear feet.

1.3 Background and Need for Action

The levees in the Lower American River basin were originally constructed by USACE between 1955 and 1956, coinciding with the construction of Folsom Dam. The levees were originally designed to contain a controlled flow of 115,000 cfs from Folsom Dam. After construction of the levees, the operations and maintenance was turned over to the State of California, who later turned over responsibility to SAFCA. Currently, on-site levee maintenance is performed by the American River Flood Control District (ARFCD) through further agreements with SAFCA.

Major storms in northern California caused record flood flows in 1986, 1995, 1997, 1998, and 2005 in the American River Basin. Outflows from Folsom Reservoir, together with high flows in the Sacramento River, caused water levels to rise above the safety margin for the levees protecting the Sacramento area. These major storms raised concerns over the adequacy of the existing flood management system, which led to a series of investigations into the need to provide additional protection for Sacramento.

In March 1996, USACE and CVFPB completed the Supplemental Information Report (SIR) and Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/EIR) for the American River Project. The SIR was undertaken to develop supplemental information to the American River Watershed Investigation, April 1991. The SIR evaluated an array of alternatives to provide increased flood risk management in the Sacramento area. The Chief of Engineers, in his June 27, 1996 report, deferred a decision on a comprehensive flood risk management plan. However, the Chief did recommend that the features common to all three proposed plans be authorized as the first component of a comprehensive flood risk management plan for the Sacramento area. These "common features" were authorized by Congress under WRDA 96.

Included among these "common features" was cutoff wall construction in order to stabilize about 24 miles of existing levees along the lower American River, as well as about one-half mile of the existing Garden Highway levees along the lower Sacramento River. USACE signed the Record of Decision on the Common Features Project on July 1, 1997. Additional National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) documents were prepared, as required, as each of these project features were refined. A summary of these previous environmental documents is included in Section 1.4. Subsequently, further modifications of the American River Common Features Project were authorized in WRDA 99.

The initial cutoff walls were constructed between 2000 and 2002. During project design, USACE determined that several logistical factors were complicating the contiguous cutoff wall installation, such as utilities or appurtenances through the levee, abutments, overpasses, and proximity of power distribution lines. These sites were set aside, and the remaining cutoff wall work was completed.

In 2002, USACE completed an inventory of "gaps" in the original cutoff wall project and reduced the inventory to 19 individual sites along the American and Sacramento Rivers. One site is located near RM 62 on the east bank of the Sacramento River, and the remaining 18 sites are located between RM 3 to RM 10 on the north bank of the American River and between RM 0.1 to RM 10 on the south bank of the American River. Although the sites were already evaluated in the 1996 SEIS/EIR, they were compiled under the title of the American River Common Features WRDA 96 Remaining Sites Project. Construction of Phase 1 (four sites) began in 2009 and was completed in 2012; Phase 2A (two sites) was completed in 2010. Sites L5A, L9, L9A, and R10 are anticipated to be completed by the end of 2013. Sites L7, L10, R3A, and R7 are currently in design and are proposed to begin construction in 2014.

The completion of the American River Common Features WRDA 96 Remaining Sites Project would provide a contiguous cutoff wall through the levee system along portions of the American and Sacramento Rivers in order to meet the current standard requirements in EM 1110-2-1913 for USACE levees and safely convey an emergency release of 160,000 cfs.

1.4 Previous Environmental Documents

This document focuses on the proposed construction of Sites L7, L10, R3A, and R7 as part of the WRDA 96 American River Common Features Remaining Sites Project. The following documents are relevant to the proposed action and are briefly described below:

- The American River Watershed Investigation, Feasibility Report and EIS/EIR, was issued in April 1991 and included the results of studies on flooding problems along the American and Sacramento Rivers in the greater Sacramento area.

- The American River Watershed Project, California, Final Supplemental Information Report and SEIS/EIR, was completed in March 1996 (1996 SEIS/EIR). This report supplemented the December 1991 Feasibility Report for the American River Watershed Investigation.

- The Streambank Protection for the Lower American River Final SEIS/EIR for the Sacramento River Bank Protection Project was completed February 1998. This document analyzed the impacts of bank protection on eroding sites within the American River Parkway.

- The EA/SEIR, American River Project, Lower American River Slurry Wall, North Bank, was completed in June 1998. This document updated environmental documentation and disclosed any changes since the 1996 SIR and SEIS/EIR. Staging areas and borrow and disposal sites were also addressed in this document.

- The EA/IS, American River (Common Features) Project, Lower American River Slurry Wall South Bank and Lower American River Flood Warning System Modification, was prepared in August 1999. This document updated environmental documentation and disclosed any changes since the 1996 SIR and SEIS/EIR with regard to cutoff wall construction along the north bank. Construction accesses, staging areas, and borrow and disposal sites were also addressed in this document.

- The EA/IS, American River Common Features Remaining Sites Project, Phase 1, was prepared in August 2009. This document assessed potential impacts and mitigation for the construction of cutoff walls at Sites R1, R5, R6, and L12 of the Remaining Sites project.

- The EA/IS, American River Common Features Remaining Sites Project, Phase 2A, was prepared in May 2010. This document assessed potential impacts and mitigation for the construction of cutoff walls at Sites R8 and L8 of the Remaining Sites project.

- The EA/IS, American River Common Features Remaining Sites Project, Site R10, was prepared in August 2012. This document assessed potential impacts and mitigation for the construction of jet grout cutoff walls at Site R10 of the Remaining Sites project.

1.5 Authority

The proposed levee work is part of the ongoing American River Watershed Common Features project. Authorization for the Remaining Sites project is provided by Section 101 of the Water Resources Development Act of 1996 (Public Law 104-303).

1.6 Purpose of this Document

This EA/IS: (1) describes the existing environmental resources in the project area; (2) evaluates the environmental effects of the alternatives on these resources; and (3) identifies measures to avoid or reduce any effects to less than significant. This EA/IS has been prepared in accordance with Council on Environmental Quality (CEQ) regulations that implement NEPA at 40 CFR Part 1500-1508 and USACE NEPA implementing regulations at ER-200-2 as well as CEQA.

1.7 Decisions Needed

The District Engineer, Commander of the Sacramento District, must decide whether or not the proposed levee work qualifies for a Finding of No Significant Impact (FONSI) under NEPA or whether an EIS must be prepared. Under NEPA, preparation of an EIS is triggered if a Federal action has the potential to "significantly affect the quality of the human environment," which is based on the context and intensity of each potential impact. Additionally, CVFPB must decide if the proposed action qualifies for a Mitigated Negative Declaration under CEQA or whether an EIR must be prepared. Under CEQA, an EIR must be prepared if there is "substantial evidence…that a project may have a significant effect on the environment." Significant effects are determined by the consideration of direct and indirect physical changes in

the environment that may be caused by the project (14 California Code of Regulations [CCR] § 15064[d]).

2.0 ALTERNATIVES

2.1 Alternatives Eliminated from Further Consideration

The topographic and metropolitan features of the project area limit alternative project options. The project areas are situated in a narrow corridor between the American River Parkway and Sacramento area businesses, residential areas, and other urban features. The purpose of the project is to improve flood risk management in these urban areas by improving the levees to meet current USACE standards.

Rather than strengthening the levees at these sites, other alternatives that could be considered include setting back the levees in order to widen the flood plain. This alternative is not a feasible option because of the current proximity of the levees to local residential and business areas. The Sacramento region is a highly developed, urbanized area with many residences and businesses immediately adjacent to the levee easements. The construction of setback levees would require the removal and relocation of thousands of structures; the acquisition of many acres of residential, commercial, and industrial lands; and the relocation of roads and other infrastructure. Additionally, prior cutoff wall construction precludes setback levees as a viable engineering solution.

Another option includes protecting the residential and commercial properties themselves to prevent flood damages. Considering the large numbers of residential commercial, and industrial structures in the floodplain, raising structures or removing them from the floodplain would not be economically feasible.

2.2 No Action Alternative

NEPA requires that the lead agency, USACE, analyze a "no action" alternative that establishes the benchmark to compare the effects of the action alternatives. CEQA guidelines require that decision makers compare the impacts of approving the proposed project with the impacts of not approving the proposed project (14 CCR § 15126.6[e]). CEQA also requires that the existing conditions at the time of writing are discussed, as well as what would reasonably be expected to occur in the foreseeable future.

In the reasonably foreseeable future, it is possible that DWR or SAFCA would pursue levee repairs without Federal funding. Under this projected future, levee repairs could be conducted under a different context. This future foreseeable alternative would be evaluated for environmental effects if and when this future project is proposed. Due to uncertainties in funding, authorization and other approvals it is unlikely that the construction of levee repairs would occur within a reasonable timeframe. Therefore, for the purpose of evaluating effects under the no action alternative, it must be assumed that a future project would not be implemented.

Assuming that no levee repair or strengthening would occur under the no-action alternative, the levees described in this document would not meet the current standard requirements in EM 1110-2-1913 for USACE levees and would not safely convey an emergency release of 160,000 cfs. The levees would continue to be operated and maintained by local levee maintenance districts. During flood events, these remaining sites would remain potential hazards for levee underseepage. Excessive underseepage could undermine the integrity of the levees, and could lead to emergency floodfighting activities to prevent flooding in the possible event of levee failure.

2.3 Proposed Levee Improvements

This section describes a discussion of features, construction details, staging and stockpile areas, borrow and disposal sites, construction workers and schedule, restoration and cleanup, and operation and maintenance for the proposed construction at Sites L7, L10, R3A, and R7. While the construction schedule of these four sites has not yet been finalized, the projected schedule anticipates Site R7 beginning mobilization for construction in the spring of 2014, Site L10 in the early summer of 2014, and Sites L7 and R3A in the late summer of 2014.

2.3.1 Site L7

Features

Site L7 is located near river mile (RM) 07 on the left (west) bank of the American River at the Fair Oaks Boulevard/J Street Bridge. The site extends for approximately 350 linear feet (Plate 2). The proposed repair work for this site involves constructing a cutoff wall along the waterside slope of the levee under the Fair Oaks Boulevard/J Street Bridge using jet grout construction techniques. After the cutoff wall is installed, a blanket made of low permeability material would be constructed under the bridge on the waterside slope of the levee to tie in the newly constructed cutoff wall into the existing cutoff wall. Construction-related activities would take place for approximately four months. Site L7 is anticipated to be constructed in the late summer and fall of 2014.

Construction Details

Jet Grout Construction. Jet grout construction involves injecting grout into the soil at very high pressures. The grout is a mixture of cement and water that would be mixed in a batch plant located in the staging area and transported through high-pressure hoses (8,000 pounds per square inch [psi]) to the location of construction. The jet grout process involves drilling a hole straight down into the levee to a depth of approximately 50 feet, then injecting grout into the hole through a high-pressure (8,000 psi) nozzle. As the grout is injected from the bottom to the top of the hole, the high pressure excavates the soil around the nozzle to a radius of 3 to 4 feet, mixing the soil within the levee with grout. The grout injection may be accompanied with air (100 psi) and water (6,000 psi) to assist the excavation of soil. The nozzle is rotated and lifted at a slow, smooth, constant speed to achieve thorough mixing and consistent quality. The grout then solidifies to create a column of low permeability. Multiple columns constructed together create a wall through the levee that prevents seepage. Soil that is displaced from the injection site would

be piped into drying beds or containment cells located in the staging area for later disposal. All four sites discussed in this document would use this type of cutoff wall construction.

Drying Beds/Containment Cells. During the jet grout construction process, soil that is displaced from the injection site would be piped into drying beds or containment cells located in the staging area for later disposal. Drying beds are pits excavated into the existing soil; raised berms would be created with the excavated soil to increase the containment level available in the drying beds. Alternatively, containment cells could be placed in the staging area in order to create above ground drying beds. Containment cells would be constructed with K-rails with earth fill around the outer perimeter of the K-rail. The drying ponds/containments cells would be lined with a landfill-grade liner to prevent any materials from seeping into the surrounding soil. Material that is piped into the drying beds/containment cells would be allowed to dry thoroughly before being removed from the staging area and transported to an appropriate disposal facility. All four sites discussed in this document would use drying beds or containment cells during jet grout construction.

Seepage Blanket. The construction of a cutoff wall under a bridge creates an offset gap between the existing cutoff wall in the levee and the lower elevation of the new cutoff wall. In order to bridge the gap, a seepage blanket would be constructed on the waterside slope of the levee. This seepage blanket would be constructed using either clay or a cement mixture that would form a low permeability barrier on the waterside slope of the levee in order to prevent seepage through the levee between the new cutoff wall and the existing cutoff wall. Riprap would also be placed on top of the seepage blanket to prevent erosion. Seepage blankets and riprap would be placed under the bridge on the waterside slope of Sites L7, L10, and R7.

Site-Specific Construction. The total length of cutoff wall to be installed at Site L7 is approximately 350 feet, including approximately 12 feet constructed beyond the existing cutoff walls to provide an overlap. Jet grout construction would take place under the Fair Oaks Boulevard/J Street Bridge and extend up the shoulders of the bridge embankment in order to tie in to the existing cutoff wall. The area directly under the bridge would be excavated to a depth of approximately 8 feet in order to create adequate overhead space to conduct the work. Additionally, a seepage blanket and approximately 500 cubic yards (cy) of riprap or other erosion control material would be installed on the levee slope directly under the bridge.

Construction at Site L7 would involve the temporary closure of the recreation trail under the Fair Oaks Boulevard/J Street Bridge and approximately 400 feet of the levee crown maintenance road on either side of the bridge for the duration of construction. Additionally, construction vehicles may be present along the Sacramento State recreational access ramp leading to the bridge on the upstream side of the site. Flaggers and other traffic control would be present for safety when construction vehicles are present on the Sacramento State recreational access ramp. Public outreach would be conducted prior to construction through mailings, public meetings, and Internet sites. Coordination with local bicycle groups, residents, businesses, and other interested groups would keep the public informed of the upcoming construction. Signs indicating the project location, duration of closures, and contact information would be posted at least two weeks prior to closures. Detour routes and closures are discussed further in Section

3.2.1, Recreation. Active construction areas, including the staging area, would be fenced off to limit access.

Access and Staging. The project area would be accessed from Camellia Avenue through the Seventh Day Adventist Church and/or through the Sacramento State recreational access ramp (Plate 2). The use of the Seventh Day Adventist Church would involve installing a new access gate and ramp leading onto the levee. The use of the Sacramento State recreational access ramp would require some trimming of ornamental trees to allow access from J Street onto the levee crown. Haul routes and traffic details are discussed further in Traffic and Circulation, Section 3.2.8.

At the time of this writing, the proposed staging area for Site L7 would be the same area as the staging area proposed for the construction of Site R7 (Plate 5). If the Site R7 staging area is used for the batch plant and drying bed area for Site L7, it would be necessary to pipe jet grout and waste material across the Fair Oaks Boulevard/J Street Bridge. If the staging area from Site R7 is used, the pipes crossing the bridge would be placed inside two steel conduits in order to protect the public and the environment from any potential leaks. The two conduits would be placed along the pedestrian walkway on the south side of the bridge, and would be stacked on top of each other to reduce the amount of space required. The conduits would be attached to the bridge railings with steel straps, and a barrier would be placed between the steel conduits and the pedestrian walkway (Plate 6). The proposed conduits are discussed further in Recreation (Section 3.2.1) and Water Resources and Quality (Section 3.2.7).

The possibility exists that the Scottish Rite Masonic Center parking lot and side lawn could be used as a staging area, pending real estate requirements. This proposed staging area is located at the corner of H Street and Camellia Avenue. Use of this staging area would require the construction of temporary pipes under Camellia Avenue in order to pipe materials (grout, air, water, and waste) between the batch plant and the construction site (Plate 2). Construction materials, equipment, topsoil, the batch plant, and excess material would be temporarily stored in the staging area during the construction period. It would also provide a parking location for construction workers. After completion of the project, all staging areas would be returned to pre-construction conditions. Due to the uncertainty of the staging areas associated with this project, this proposed staging area may or may not be used.

Site Preparation. Biological surveys for the presence of special status species would be conducted 3 to 4 months prior to construction. Two weeks prior to the onset of construction, additional biological surveys would be conducted in order to confirm the results from the previous surveys. If special status species are observed that may be affected by project activities, consultation with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) would be initiated. Before the start of construction, all trees and elderberry shrubs within the construction area would be tagged and a buffer zone would be established. Appropriate avoidance protocols would be used to protect all elderberry shrubs observed within 100 feet of construction. Potential effects to special status species, as well as avoidance, minimization, and mitigation measures are discussed further in Section 3.5.3.

Sediment control measures would be implemented to prevent any materials from migrating from the construction site to the surrounding areas. No liquids or other waste materials would be disposed of into the American River. Additional discussion of sediment control is described in Water Resources and Quality, Section 3.2.7.

Active construction areas, including the staging area, would be fenced off using chain-link fencing for safety and security. Recreationists, businesses, commuters, and other interested parties would be notified of the closures associated with the levee strengthening project. Signs describing the closures would be installed at least two weeks prior to the construction. These site preparation requirements are the same for Sites L7, R3A, and R7.

Construction Workers and Schedule. An estimated 10 to 20 workers would be onsite each day during construction. These workers would access the area via regional and local roadways and park their vehicles in the staging area. Construction times would be limited daily to the hours from 7:00 a.m. to 6:00 p.m. Monday through Saturday, and 9:00 a.m. to 6:00 p.m. on Sunday. Construction on Site L7 is anticipated to be conducted in the late summer and fall of 2014. The construction period is expected to last approximately 4 months.

Borrow and Disposal Sites. During construction, an estimated 17,000 cubic yards (cy) of jet grout spoil materials resulting from the construction would be transported to drying ponds/containment cells in the staging area. This material would be thoroughly dried prior to being transported off-site and disposed of by the contractor at a State-permitted disposal facility approved in writing by USACE. It is assumed that disposal sites for excess materials or spoils would be located within 15 to 20 miles of the project site because at least two different landfills are located within 20 miles of the project site.

Approximately 1,650 cy of additional material would be required for the seepage blanket and the reconstruction of the levee crown, as well as approximately 500 cy of riprap. Stockpiles of material temporarily stored in the staging area would be kept covered in order to prevent impacts on air quality and water quality. These and other best management practices (BMPs) are further described in the avoidance, minimization, and mitigation measures proposed under Air Quality (Section 3.2.5) and Water Resources and Quality (Section 3.2.7). Based on the availability of borrow sites within 15 to 20 miles of the project site, it is reasonable to assume that the material would be acquired from sites within 15 to 20 miles of the project site. The contractor is responsible for determining the location of borrow and disposal sites; however, they must be State permitted and approved in writing by USACE.

Restoration and Cleanup. Once the levee work is completed, all equipment and excess materials would be transported offsite via neighborhood streets and regional highways. Landscaped sod and ornamental vegetation would be replaced in-kind; other areas of exposed soil would be reseeded with native grasses to promote revegetation and minimize soil erosion. The construction areas, access ramps, and staging areas would be restored to pre-project conditions and reseeded as required. Finally, the work site and staging areas would be cleaned of all rubbish, and all parts of the work area would be left in a safe and neat condition suitable to the setting of the area. The procedures for restoration and clean-up are the same for Sites L7, L10, and R3A.

Operation and Maintenance. After construction is completed, responsibility for the project would be turned over to CVFPB, the non-Federal sponsor for the project. This would include operation, maintenance, repair, rehabilitation, and replacement of all project features. CVFPB would transfer these responsibilities to SAFCA, who would contract ARFCD to operate and maintain the levee. Regular maintenance activities include mowing and spraying the levee slopes, controlling rodents, clearing the maintenance road, and inspecting the levee. The procedures for operation and maintenance are the same for Sites L7, L10, R3A, and R7.

2.3.2 Site L10

Features

Site L10 is located near RM 08 on the left (south) bank of the American River at the Howe Avenue Bridge (Plate 3). The site extends for approximately 500 feet where the Howe Avenue Bridge crosses the American River levee. The construction period is expected to last approximately four months, including one month for a test-grout section. Site L10 is anticipated to be constructed during the summer and fall of 2014.

Construction Details

Jet Grout Construction. Site L10 is proposed to be constructed using jet grout. The jet grout construction for Site L10 would be consistent with Site L7. These details of this effort are described under "Jet Grout Construction" in Section 2.3.1.

Test-grout Section. For Sites L10, R3A, and R7, construction would begin with a small test-grout section using the same techniques as described in "Jet Grout Construction." This test section would be constructed prior to the start of full jet grout construction in order to determine the proper mix of cement for the jet grout construction. The test section would be conducted within the project footprint of the proposed cutoff wall in order to incorporate successful test columns into the overall effort. Test-grout construction would be conducted for approximately six days. After the section has cured for approximately 14 days, it would be tested over a 3 day time period using a drill-boring method in order to determine the strength and consistency of the jet grout construction.

Drying Beds/Containment Cells. Construction at Site L10 would involve the use of drying beds or containment cells to dry and dispose of waste generated by the jet grout construction process. The drying beds/containment cells for Site L10 would be consistent with Site L7. The details of this effort are described under "Drying Beds/Containment Cells" in Section 2.3.1.

Seepage Blanket. Site L10 would involve the construction of a seepage blanket on the waterside slope of the levee under the bridge. The seepage blanket for Site L10 would be consistent with Site L7. The details of this effort are described under "Seepage Blanket" in Section 2.3.1.

Site-Specific Construction Details. The jet grout cutoff wall at Site L10 would extend approximately 335 linear feet, including approximately 12 feet beyond the existing cutoff walls to provide an overlap. The test-grout section would take place on the levee crown adjacent to the Howe Avenue Bridge. The main portion of the jet grout construction would take place under the Howe Avenue Bridge and extend up the shoulders of the bridge embankment in order to tie in to the existing cutoff wall. The area directly under the bridge would be excavated to a depth of approximately 5 feet in order to create adequate overhead space to conduct the work. A seepage blanket would also be constructed on the waterside toe under the Howe Avenue Bridge, and rip-rap would be placed on top of the seepage blanket to prevent erosion. Additionally, approximately 175 feet of the existing levee upstream of the Howe Avenue Bridge would be reshaped to meet the current USACE standards.

Construction at Site L10 would involve the temporary closure of the recreational trail under the Howe Avenue Bridge for approximately four months. A temporary recreational access ramp would be constructed on the west side of the staging area in order to direct recreationists around the construction area. The detour route is further discussed in Recreation, Section 3.2.1.

Access and Staging. Construction vehicles would access Site L10 using the existing ramps leading from La Riviera Drive onto the levee. Haul routes and traffic details are discussed in Traffic and Circulation, Section 3.2.8.

The proposed staging area would be located on the landside toe of the levee in the area between the College Greens tennis courts and the residential areas located on the west side of the Howe Avenue Bridge (Plate 3). Construction materials, equipment, the batch plant, spoils and excess material would be stored in the staging area during the construction period. It would also provide a parking location for construction workers. Additionally, parking for construction workers would be available on La Riviera Drive adjacent to the staging area.

Site Preparation and Construction Methods. Biological surveys conducted at Site L10 identified two elderberry shrubs in poor health located in the proposed staging area under Howe Avenue Bridge. Prior to the onset of construction, these shrubs would be removed and transplanted into a mitigation site. Details pertaining to these shrubs are further described in Section 3.2.4, Special Status Species. Biological surveys for the presence of special status species would be conducted three to four months prior to construction. Two weeks prior to the onset of construction, additional biological surveys would be conducted in order to confirm the results from the previous surveys. If special status species are observed that may be affected by project activities, consultation with U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) would be initiated. Before the start of construction, all trees and shrubs within 100 feet of the construction area would be tagged and a buffer zone would be established. Appropriate avoidance protocols would be used to protect all elderberry shrubs observed within 100 feet of construction. Special status species effects, avoidance, minimization, and mitigation measures are discussed further in Section 3.2.4.

Sediment control measures would be implemented to prevent any materials from migrating from the construction site to the surrounding areas. No liquids would be disposed of

into the American River. Additional discussion of sediment control is described in Water Resources and Quality, Section 3.2.7.

Active construction areas, including the staging area, would be fenced off to limit access. Chain-link fencing would be installed around the project site for safety and security. A temporary recreational access ramp would be constructed on the west side of the staging area in order to direct recreationists around the construction area. Recreationists, businesses, commuters, and other interested parties would be notified of the detour and closures associated with the levee strengthening project. Signs describing the closures and the detour route would be installed at least two weeks prior to the construction.

Construction Workers and Schedule. An estimated 10 to 20 workers would be onsite each day during construction. These workers would access the area via regional and local roadways, and park their vehicles in the staging area. Construction times would be limited daily to the hours from 7:00 a.m. to 4:00 p.m., Monday through Saturday, and 9:00 a.m. to 4:00 p.m. on Sunday. Construction is anticipated to be conducted in the summer and fall of 2014. The duration of the construction period would last approximately four months, including one month for the test-grout section.

Borrow and Disposal Sites. During construction, an estimated 12,000 cy of jet grout spoil materials resulting from the construction would be transported to drying ponds/containment cells in the staging area. This material would be thoroughly dried prior to being transported off-site and disposed of by the contractor at a State-permitted disposal facility approved in writing by USACE. All non-useable material would be disposed of by the contractor at a State-permitted disposal facility approved in writing by USACE. At least two different landfills are located within 20 miles of the project site, so it is assumed that disposal sites for excess materials or spoils would be located within 15 to 20 miles of the project site.

Approximately 3,000 cy of soil, clay, cement, and riprap would be required for the seepage blanket and the reshaping of the levee crown. Stockpiles of material temporarily stored in the staging area would be kept covered in order to prevent impacts on air quality and water quality. These and other best management practices (BMPs) are further described in the avoidance, minimization, and mitigation measures proposed under Air Quality (Section 3.2.5) and Water Resources and Quality (Section 3.2.7). Based on the availability of borrow sites within 15 to 20 miles of the project site, it is reasonable to assume that the borrow material would be acquired from sites within 15 to 20 miles of the project site. The contractor is responsible for determining the location of borrow and disposal sites; however, they must be State permitted and approved in writing by USACE.

Restoration and Cleanup. The procedures for restoration and clean-up are the same for Sites L7, L10, and R3A. See the description of Restoration and Cleanup in Section 2.3.1 for details.

Operation and Maintenance. The procedures for operation and maintenance are the same for all sites. See the description of Operation and Maintenance in Section 2.3.1 for details.

2.3.3 Site R3A

Features

Site R3A extends for approximately 325 feet on the right (north) bank of the American River at the Business 80 Bridge near Cal Expo (Plate 4). Two separate segments of cutoff wall would be installed on both sides of the Business 80 Bridge using jet grout construction. Construction at Site R3A is anticipated to begin on August 1, 2014. The duration of the construction period would last approximately three months, including one month for the test-grout section.

Construction Details

Jet Grout Construction. Site R3A is proposed to be constructed using jet grout. The jet grout construction for Site R3A would be consistent with Site L7. These details of this effort are described under "Jet Grout Construction" in Section 2.3.1.

Test-grout Section. The initial portion of construction would involve a test-grout section conducted within the levee in order to determine the proper mix of cement for the jet grout construction. The test-grout section construction for Site R3A would be consistent with Site L10. The details of this effort are described under "Test-grout Section" in Section 2.3.2.

Drying Beds/Containment Cells. Construction at Site R3A would involve the use of drying beds or containment cells to dry and dispose of waste generated by the jet grout construction process. The drying beds/containment cells for Site R3A would be consistent with Site L7. The details of this effort are described under "Drying Beds/Containment Cells" in Section 2.3.1.

Site-Specific Construction Details. The construction of Site R3A would involve two separate jet grout cutoff wall sections on either side of the Business 80 Bridge. The cutoff wall would be approximately 70 feet long on the upstream side and approximately 80 feet long on the downstream side of the Business 80 Bridge. The cutoff wall sections would end approximately 10 feet from the edge of the pavement on both sides of the Business 80 Bridge.

Construction of the levee improvements at site R3A would require temporarily removing the levee crown and partially degrading the existing levee. Any removed material that could be used for the reconstruction of the levee would be temporarily stored in the staging area; all non-useable material would be disposed by the contractor at an approved site. Approximately 120 cy of additional material would be brought in for the reconstruction of the levee crown. Stockpiles of material would be kept covered in order to prevent impacts on air quality and water quality. These and other BMPs are further described in the avoidance, minimization, and mitigation measures proposed under Air Quality (Section 3.2.5) and Water Resources and Quality (Section 3.2.7).

Access and Staging. Site R3A would be accessed using Tribute Road from Exposition Boulevard. The access ramp leading to the American River Bike Trail from Tribute Road would

remain open; however, construction trucks would also use this ramp in order to access the construction site. Traffic control measures, such as flaggers and signs, would be used in order to maintain public safety. Haul routes and traffic details are discussed in Traffic and Circulation, Section 3.2.8.

The proposed staging area would be located near the Arden Sanitation Pumping Plant and Sump 152 on the Cal Expo grounds between Hurley Way and the American River Bike Trail (Plate 4). Construction materials, equipment, the batch plant, spoils and excess material would be stored in the staging area during the construction period. It would also provide a parking location for construction workers.

Site Preparation and Construction Methods. Site preparation methods would be the same for Sites L7, R3A, and R7. See the description of Site Preparation and Construction Methods in Section 2.3.1 for details.

Construction Workers and Schedule. An estimated 10 to 20 workers would be onsite each day during construction. These workers would access the area via regional and local roadways, and park their vehicles in the staging area. Construction times would be limited daily to the hours from 7:00 a.m. to 6:00 p.m., Monday through Saturday, and 9:00 a.m. to 6:00 p.m. on Sunday. Construction on Site R3A is anticipated to begin on August 1, 2014. The duration of the construction period would last approximately three months, including one month for the test-grout section.

Borrow and Disposal Sites. During construction, an estimated 7,600 cy of jet grout spoil materials resulting from the construction would be transported to drying ponds/containment cells in the staging area. This material would be thoroughly dried prior to transportation off-site. All non-useable material would be disposed of by the contractor at a State-permitted disposal facility approved in writing by USACE. At least two different landfills are located within 20 miles of the project site, so it is assumed that disposal sites for excess materials or spoils would be located within 10 to 15 miles of the project site.

The proposed construction at this site would require approximately 120 cy of borrow material. Stockpiles of material temporarily stored in the staging area would be kept covered in order to prevent impacts on air quality and water quality. These and other best management practices (BMPs) are further described in the avoidance, minimization, and mitigation measures proposed under Air Quality (Section 3.2.5) and Water Resources and Quality (Section 3.2.7). Based on the availability of borrow sites within 15 to 20 miles of the project site, it is reasonable to assume that the material would be acquired from sites within 10 to 15 miles of the project site. The contractor is responsible for determining the location of borrow and disposal sites; however, they must be approved by USACE.

Restoration and Cleanup. The procedures for restoration and clean-up are the same for Sites L7, L10, and R3A sites. See the description of Restoration and Cleanup in Section 2.3.1 for details.

Operation and Maintenance. The procedures for operation and maintenance are the same for all sites. See the description of Operation and Maintenance in Section 2.3.1 for details.

2.3.4 Site R7

Features

Site R7 extends for approximately 175 linear feet on the right (east) side of the American River between RM 06 and RM 07 at the Fair Oaks Boulevard/J Street Bridge (Plate 5). The proposed repair work for this site involves constructing a cutoff wall along the waterside slope of the levee under the Fair Oaks Boulevard/J Street Bridge using jet grout construction techniques. After the cutoff wall is installed, a blanket made of low permeability material would be constructed on the waterside slope of the levee to tie in the existing cutoff wall into the newly constructed cutoff wall. Approximately 390 cy of riprap would be placed on top of the seepage blanket for erosion control. Construction-related activities would take place for approximately four months, including one month for the test-grout section. The construction of Site R7 is anticipated to take place in the spring and summer of 2014.

Construction Details

Jet Grout Construction. Site R7 is proposed to be constructed using jet grout. The jet grout construction for Site R7 would be consistent with Site L7. These details of this effort are described under "Jet Grout Construction" in Section 2.3.1.

Test-grout Section. The initial portion of construction would involve a test-grout section conducted within the levee in order to determine the proper mix of cement for the jet grout construction. The test-grout section for Site R7 would be consistent with Site L10. The details of this effort are described under "Test-grout Section" in Section 2.3.2.

Drying Beds/ Containment Cells. Construction at Site R7 would involve the use of drying beds or containment cells to dry and dispose of waste generated by the jet grout construction process. The drying beds/containment cells for Site R7 would be consistent with Site L7. The details of this effort are described under "Drying Beds/Containment Cells" in Section 2.3.1.

Seepage Blanket. Site R7 would involve the construction of a seepage blanket on the waterside slope of the levee under the bridge. The seepage blanket for Site R7 would be consistent with Site L7. The details of this effort are described under "Seepage Blanket" in Section 2.3.1.

Site-Specific Construction Details. The jet grout cutoff wall at Site R7 is approximately 175 feet, including approximately 12 feet constructed beyond the existing cutoff walls to provide an overlap. The test-grout section would take place on the waterside toe on the levee crown on the downstream side of the project area and under the Fair Oaks Boulevard/J Street Bridge on the waterside toe of the levee. The area directly under the bridge would be excavated to a depth of approximately 10 feet in order to create adequate overhead space to conduct the work. The

Jedediah Smith Memorial Trail located adjacent to the waterside toe of the levee would not be affected during construction.

The main portion of the jet grout construction at Site R7 would involve some temporary closures and detours around the construction site. The Jedediah Smith Memorial Trail would be unaffected by the project; however, access to and from the Fair Oaks Boulevard/J Street Bridge from the levee maintenance road would undergo partial to full closures during construction. Detours and the approximate duration of full closures are discussed in Section 3.2.1, Recreation. Public outreach would be conducted prior to construction through mailings, public meetings, and Internet sites. Coordination with local bicycle groups, residents, businesses, and other interested groups would keep the public informed of the upcoming construction. Signs would be posted at least two weeks prior to mobilization for construction.

Access and Staging. Site R7 would be accessed either from Fair Oaks Boulevard or from the levee access point located at the end of Spanos Court. Haul routes and traffic details are discussed in Traffic and Circulation, Section 3.2.8.

The proposed staging area is located on the waterside toe of the levee upstream of the construction site (Plate 5). This area is located in a native grasses restoration area, and using this area for staging would require higher mitigation requirements than other areas. This patch would have to be removed and disposed of during construction set-up. Native grasses and restoration requirements are discussed in Section 3.2.2, Vegetation and Wildlife.

At the time of this writing, the proposed staging area for Site R7 would also be used during the construction of Site L7. If the Site R7 staging area was used for the batch plant and drying bed area for Site L7, it would be necessary to pipe jet grout and waste material across the Fair Oaks Boulevard/J Street Bridge. If the proposed Site R7 staging area is used during the construction of Site L7, the pipes crossing the bridge would be placed inside steel conduits in order to protect the public and the environment from any potential leaks. The two conduits would be placed along the pedestrian walkway on the south side of the bridge, and would be stacked on top of each other to reduce the amount of space required. The conduits would be attached to the bridge railings with steel straps, and a barrier would be placed between the steel conduits and the pedestrian walkway (Plate 6). The proposed conduit is further discussed in Recreation (Section 3.2.1) and Water Resources and Quality (Section 3.2.7).

Construction materials, equipment, topsoil, and excess material would be temporarily stored in the staging area during the construction period. It would also provide a parking location for construction workers.

Site Preparation and Construction Methods. Site preparation methods would be the same for Sites L7, R3A, and R7. See the description of Site Preparation and Construction Methods described in Section 2.3.1 for details.

Sediment control measures would be implemented to prevent any materials from migrating from the construction site to the surrounding areas. No liquids would be disposed of into the American River.

Construction Workers and Schedule. An estimated 10 to 20 workers would be onsite each day during construction. These workers would access the area via regional and local roadways and park their vehicles in the staging area. Construction times would be limited daily to the hours from 7:00 a.m. to 6:00 p.m., Monday through Saturday, and 9:00 a.m. to 6:00 p.m. on Sunday. Construction of site R7 is anticipated to begin in the spring of 2014. The duration of the construction period is expected to last approximately four months, including one month for the construction of the test-grout section.

Borrow and Disposal Sites. During construction, an estimated 17,000 cy of jet grout spoil materials resulting from the construction would be transported to drying ponds/containment cells in the staging area. This material would be thoroughly dried prior to being transported off-site and disposed of by the contractor at a State-permitted disposal facility approved in writing by USACE. It is assumed that disposal sites for excess materials or spoils would be located within 15 to 20 miles of the project site.

Approximately 1,290 cy of additional material would be brought in for the seepage blanket and the reconstruction of the levee crown, as well as approximately 390 cy of riprap. Stockpiles of material temporarily stored in the staging area would be kept covered in order to prevent impacts on air quality and water quality. These and other best management practices (BMPs) are described further in the avoidance, minimization, and mitigation measures proposed under Air Quality (Section 3.2.5) and Water Resources and Quality (Section 3.2.7). Based on the availability of borrow sites within 15 to 20 miles of the project site, it is reasonable to assume that the borrow material would be acquired from sites within 15 to 20 miles of the project site. The contractor is responsible for determining the location of borrow and disposal sites; however, they must be approved in writing by USACE.

Restoration and Cleanup. The restoration of the staging area would be required to meet standards established by the Sacramento County Department of Regional Parks (County Parks) in order to restore the existing the native vegetation mitigation site. The area would initially be hydroseeded with native grasses in order to prevent soil erosion. After the initial hydroseeding, plugs of native grasses and shrubs would be planted throughout the site per the specification indicated by County Parks. Irrigation lines would not be required if the plants are installed immediately following the construction period (prior to the rainy season); however, if restoration is delayed until the following spring, irrigation lines would be required to establish the grasses. Monitoring, maintenance, and revegetation, as required, would continue until the vegetation meets the requirements as described in the County Parks specs. Irrigation lines, if required, would be removed prior to the termination of the restoration contract. Additional requirements of the reestablishment of the native grasses are discussed in Section 3.2.2, Vegetation and Wildlife. The procedures for restoration and clean-up for the remainder of the R7 project area is described under "Restoration and Cleanup" in Section 2.3.1.

Operation and Maintenance. The procedures for operation and maintenance are the same for all sites. See the description of Operation and Maintenance in Section 2.3.1 for details.

3.0 AFFECTED ENVIRONMENT AND POTENTIAL ENVIRONMENTAL CONSEQUENCES

This section describes the environmental resources in the project area, as well as any effects of the alternatives on those resources. The section is arranged by environmental resources.

3.1 Environmental Resources Not Evaluated in Detail

Initial evaluation of the effects of the project indicated that there would likely be little to no effect on several resources. These resources are briefly discussed below to add to the overall understanding of the project area.

3.1.1 Climate

The climate of the area is characterized by cool, wet winters and hot, dry summers. The average yearly temperature for Sacramento is 61 degrees Fahrenheit (°F) with an average high of 74° F and an average low of 48° F. The hottest months are June through September and the coldest months are November through January (Weatherbase, 2011).

Most of the seasonal rainfall occurs in two or three of the winter months. Precipitation ranges from 16 to 20 inches on the valley floor. Annual precipitation occurs almost entirely during the winter storm season (November to April). The prevailing wind direction in the Lower American River basin is from the south and southeast from April to September and from the north from October to March.

Due to the small scale of the proposed project, there would be no effect on the climate in the project area; therefore, climate is not discussed in this document. Construction activities would emit airborne contaminants associated with climate change; these effects are addressed in Climate Change, Section 3.2.6.

3.1.2 Topography, Geology, and Soils

The lower American River area consists of low rolling foothills and flood plain areas near the confluence with the Sacramento River. The floor of the Sacramento Valley is generally flat and open with little natural relief. Flood control levees provide the only significant topographic relief in or near the project area. Geologic formations underlying the Sacramento Valley include igneous, metamorphic, and sedimentary rock types, which range in age from pre-cretaceous to recent. The valley is situated on vast alluvial deposits that have slowly accumulated over the last 100 million years. The materials have been derived from the surrounding uplands; transported by major streams; and deposited in successive clay, silt, sand, and gravel layers on the valley floor.

The lower American River area is part of the Great Valley Geomorphic province of California. The broad valley is filled with erosion debris that originates from the surrounding mountains. Most soils in the area are recent alluvial flood plain soils consisting of unconsolidated deposits of clay, silt, and sand that occur as flood plain deposits. Fresh alluvium

is deposited with each floodflow. Sedimentation rates in the American River basin and adjacent river basins are relatively low due to limited development, shallow soils, a low rate of upstream erosion, and numerous containment basins. Estimates of the annual sediment yield range from 0.1 to 0.3 acre-feet per square mile. In 1995, only about 2 percent of the reserved sediment storage space in the reservoir had been filled since the completion of Folsom Dam in 1955 (USACE, 1996).

The levee improvements would not change the topography or geography in the project area because the project would strengthen existing levees, rather than constructing new levees or other topographical changes. The removal or import of soil material for the levee construction would not affect the soil condition in the project area because soil would only be imported to or exported from the levee itself. Soil excavated from staging areas would be stockpiled for later reuse. Effects from soil erosion due to construction activities and proposed avoidance, minimization, and mitigation measures are addressed in Water Resources and Quality, Section 3.2.7.

3.1.3 Land Use and Socioeconomics

The project area is located within the Sacramento metropolitan area. The predominant land uses in the area include residential areas, commercial areas, industrial areas, and public land maintained by the County of Sacramento. The levees to be strengthened protect the neighboring areas from flooding and also serve as a buffer between the waterway and these land uses. The project would not result in any long-term changes in land use or socioeconomics in the area. Upon project completion, land use would remain the same as that identified prior to construction. The residential developments adjacent to the levee would remain the same, and the staging areas would be returned to pre-project uses after construction. The proposed action would not affect an established community or conflict with any applicable land use regulations.

As directed in Executive Order 12898 (Environmental Justice), all Federal agencies must identify and address adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. This project is in compliance with this executive order. The proposed project would not have a disproportionally adverse effect on any minority or low-income communities because the project would reduce the risk of levee failure and possible catastrophic flooding to the local community, and all nearby residents would benefit equally from the levee improvements. Additionally, the proposed project would not remove undergrowth or cover and is not anticipated to disturb homeless encampments.

3.2 Environmental Resources Evaluated in Detail

Initial evaluation of the effects of the project indicated that there could be an effect on several resources. Sections 3.2.1 through 3.2.13 describe the existing conditions, effects, and the proposed measures to avoid, reduce, minimize, mitigate, or compensate for any potential significant effects. In determining effects, the consequences of the proposed action are compared to the consequence of taking no action. Impacts are identified as direct, indirect, or cumulative. Cumulative impacts are addressed separately in Section 5, Cumulative Impacts. Effects are assessed for significance based on significance criteria. The significance criteria used

in this document are based on the checklist presented in Appendix G of the State CEQA Guidelines; factual or scientific information and data; and regulatory standards of Federal, State, and local agencies.

3.2.1 Recreation

Existing Conditions

Sites L7, L10, R3A and R7 are located along the left and right banks of the lower American River within the American River Parkway. The American River Parkway consists of a 5,000-acre regional park along the riparian corridor of the American River stretching from its confluence with the Sacramento River upstream to Folsom Lake. The Parkway is a valuable regional resource that attracts bicyclists, runners, walkers, horseback riders and rafters. The Sacramento County Department of Regional Parks (County Parks) is the agency with primary responsibility over the American River Parkway.

The Jedediah Smith Memorial Trail provides bicycle, pedestrian, and equestrian trails from Discovery Park to Folsom Lake, and is the primary recreational feature of the Parkway. The trail also connects with the Johnny Cash Folsom Prison Blues (Folsom Lake) Trail, the American River Bike Trail, the Sacramento River Trail, and Old Sacramento State Historic Park. Many people use it daily to commute by bicycle into downtown Sacramento.

Potential Environmental Effects

Basis of Significance. Effects to recreational resources are considered significant if construction would: (1) eliminate or severely restrict access to recreational facilities and resources; or (2) result in substantial long-term disruption of use of an existing recreation facility.

No Action Alternative. Under this alternative, the levee improvement project would not be constructed by USACE. The recreational trails and levee roads would remain open and would continue to be maintained by County Parks and ARFCD. However, recreational trails and access to the American River could be severely damaged in a flood event.

Proposed Levee Improvements. The construction of sites L7, L10, R3A and R7 would require the temporary closure of some portions of the American River Bike Trail and associated access points. Due to the uncertainty of the staging areas associated with this project, all potentially affected recreational trails and access points are discussed and evaluated fully under a worst case scenario basis. The actual construction most likely would not result in all of the impacts discussed below.

Site L7. The recreational trail located under the Fair Oaks Boulevard/J Street Bridge would be closed during the four month construction period. Access to the recreational trail leading from Sacramento State University to the Fair Oaks/J Street Bridge would remain open; however, construction vehicles may use the ramp to access the levee.

If the proposed multiple use staging area is used during the construction of Sites L7 and R7, pipes containing jet grout, air, water, and/or waste materials would be placed along the pedestrian walkway on the south side of the Fair Oaks Boulevard/J Street Bridge. The pipes would be placed as far to the side of the pedestrian walkway as possible; however, the walkway would be narrowed by approximately 12 inches. Bicyclists would be required to walk their bikes due to safety concerns.

Site L10. The recreational trail located under the Howe Avenue Bridge and the access points onto and off of the Howe Avenue Bridge would be temporarily closed during the four month construction period. Access from La Riviera Drive onto the recreational trail and the boat launch owned by County Parks would remain open; however, construction vehicles may use the ramp to access the levee.

Site R3A. The access ramp leading to the American River Bike Trail from Tribute Road would remain open; however, construction trucks would also use this ramp to access the construction site. The levee crown maintenance roads on either side of the Business 80 Bridge would be closed.

Site R7. The levee maintenance trail between Spanos Court and the construction site would be closed to recreation, and the access points leading from the Fair Oaks Boulevard/J Street Bridge to the American River Bike Trail would be closed intermittently during construction. If the proposed multiple use staging area is used, pipes containing jet grout, air, water, and/or waste materials would be placed along the pedestrian walkway on the south side of the Fair Oaks Boulevard/J Street Bridge. The pipes would be placed as far to the side of the pedestrian walkway as possible; however, the walkway would be narrowed by approximately 12 inches. Bicyclists would be required to walk their bikes due to safety concerns.

During construction, levee maintenance roads adjacent to the construction sites would be used as haul routes for trucks providing borrow material, resulting in the temporary closure of the levee maintenance roads to recreationists. The Jedediah Smith Memorial Trail would remain open during the entire construction period; however, access points from the levee onto the Fair Oaks Boulevard/J Street Bridge and the Howe Avenue Bridge could be restricted or closed. Traffic control would be necessary for negotiating construction truck entry to the levee crown along with recreationists entering the Parkway. Although no long term impacts to recreation resources are anticipated, short term effects associated with the temporary recreational trail access closures and restrictions could be considered potentially significant unless mitigated.

Avoidance, Minimization, and Mitigation Measures

Recreation trails and access points are anticipated to remain open during the majority of construction; however, there would be restrictions and some temporary closures. In order to reduce impacts to recreation, detour routes and temporary trails have been incorporated into the construction plans. Detour routes, temporary structures, and signs would be as follows.

Site L7. Recreationists traveling south under the J Street/Fair Oaks Boulevard Bridge would be detoured from Glenn Hall Park to Carlson Drive, connecting to either J Street or State

University Drive East. Recreationists traveling north from the levee crown to the J Street Boulevard/Fair Oaks Bridge would be detoured off the levee crown using the Sacramento State University recreational path onto J Street. A temporary bike lane would be created with K-rail or other protective barrier for the duration of construction (see Plate 2). Informational and detour signage would be posted a minimum of two weeks prior to site mobilization to inform the travelling public of the temporary closures and detours.

If the proposed multi-use staging area is used, jet grout materials would be piped along the pedestrian walkway on the south side of the Fair Oaks Boulevard/J Street Bridge. The pipes would be placed inside two steel conduits in order to protect the public and the environment from any potential leaks. The two conduits would be stacked on top of each other to reduce the amount of space required. The conduits would be attached to the bridge railings with steel straps, and a barrier would be placed between the steel conduits and the pedestrian walkway (Plate 6). The walkway is required to remain ADA compliant; however, bicyclists crossing the American River the Fair Oaks Boulevard/J Street Bridge would be required to walk their bikes due to safety concerns.

Site L10. Recreationists traveling on the American River Bike Trail would be temporarily detoured from the levee crown trail onto La Riviera Drive in order to avoid the construction area. On the west side of the construction site, a temporary access ramp would be constructed leading from La Riviera Drive back onto the bike trail. On the east side of the construction site, the main access point leading from La Riviera Drive into the Howe Avenue River Access would remain open; however, construction trucks would also use this ramp in order to access the construction site (Plate 3). Traffic control measures, such as signs and flaggers, would be used in order to maintain public safety. The recreation access across the American River would remain open; however, access to the bike trail would be partially restricted. Alternate routes include traveling along the Howe Avenue Bridge to La Riviera Drive or crossing the river at either the Guy West Bridge or the Watt Avenue Bridge. Information regarding the closures and detours would be posted at least two weeks prior to construction.

Site R3A. The Jedediah Smith Memorial Trail would not be affected by the construction of Site R3A. The access ramp leading to the Jedediah Smith Memorial Trail from Tribute Road would remain open; however, construction trucks would also use this ramp in order to access the construction site. Traffic control measures, such as flaggers and signs, would be implemented to maintain public safety.

Site R7. Recreationists travelling north-south on the Jedediah Smith Memorial Trail would not be affected by the construction of Site R7. Recreation would be restricted on the levee maintenance trail between Spanos Court and the construction area; however, the Campus Commons Golf Course access would remain open. Traffic control measures, such as flaggers and signs, would be implemented to maintain public safety.

Access to and from the Fair Oaks Boulevard/J Street Bridge would be intermittently closed when the construction would be taking place on the levee crown and/or adjacent to the access ramp from the bridge. During closures, recreationists traveling north to access the bridge would be detoured off the levee crown and on to the maintenance access ramp located to the east of the

bridge. Recreationists could then travel west onto the Fair Oaks Boulevard/J Street Bridge. Recreationists traveling south on the levee maintenance trail to access the bridge would be detoured off the levee crown at the Campus Commons Golf Course, travel south on Cadillac Drive, cross Fair Oaks Boulevard at the crosswalk and continue to travel west along the pedestrian walkway across the Fair Oaks Boulevard/J Street Bridge.

If the proposed multi-use staging area is used, bicyclists crossing the American River the Fair Oaks Boulevard/J Street Bridge would be required to walk their bikes due to safety concerns. Alternate routes include the Guy West Bridge, the Howe Avenue Bridge, and the Watt Avenue Bridge. Informational and detour signage would be posted a minimum of two weeks prior to site mobilization.

To further ensure public safety at all sites, warning and restricted access signs would be posted before and during construction. In areas where recreation traffic intersects with construction vehicles, traffic control measures, such as flaggers and signs, would be used to maintain public safety. Active construction areas, including staging areas, would be enclosed with security fencing. Public outreach would be conducted prior to construction through mailings, public meetings, and Internet sites. Coordination with local bicycle groups, residents, businesses, and other interested groups would keep the public informed of the upcoming construction. Any effects to recreation would be temporary, and the proposed avoidance, minimization, and mitigation measures would reduce impacts to less than significant. Therefore, no further mitigation measures would be required.

3.2.2 Vegetation and Wildlife

Existing Conditions

There are 3 different types of vegetation communities in the project area: ruderal herbaceous, ornamental landscaping, and riparian forest and scrub. Other terrestrial cover types include non-vegetated cover such as access roads, parking structures, buildings, and other developed areas. These communities and associated wildlife are described below. Sensitive native communities are considered native-diverse communities that are regionally uncommon or of special concern to Federal, State, and local resource agencies. The riparian forest and scrub habitat is considered a sensitive native community. Due to their local significance, native oak trees are separately addressed.

Ruderal Herbaceous. The ruderal herbaceous community is dominated by nonnative annual grasses such as ripgut brome (*Bromus diandrus*) and wild oat (*Avena fatua*), native grasses including purple needlegrass (*Nasella pulchra*) and creeping wild rye (*Leymus triticoides*), and forbs such as horsetail (*Equisetum* spp.). This community is located on the levee slopes and landside area between the levee and fences of the nearby residential homes. Areas of ruderal herbaceous community also occur in the waterside area between the levee and the American River. An area of special note is the native grass mitigation site located on the waterside toe of Site R7. This area was restored between 2006 and 2009 by the Sacramento Regional County Sanitation District (SRCSD) following the construction of the Arden Parallel

Force Main Project. This native vegetation restoration project achieved the 20 percent native cover performance standard prescribed by the project's mitigation measures.

Ruderal herbaceous communities provide cover, roosting habitat, and/or foraging habitat for resident and migratory birds (including raptors), small mammals, and reptiles. The ruderal herbaceous community within the project area is predominantly limited to the American River Parkway and levee slopes. The grasses occur as a result of restoration from previous levee projects, and are mowed as part of the maintenance program by ARFCD to reduce wildfire danger.

Ornamental Landscape. The ornamental landscape community is a nonnative community that occurs within the project area primarily near residential homes and business areas. Most of the vegetation in this community is nonnative vegetation used to landscape lawns, backyards, business grounds, and recreational fields. Vegetation type, height, and volume are managed by landowners and maintenance personnel. Some of this vegetation is trimmed by ARFCD during maintenance along the landside easement. This community provides nesting, cover, and/or foraging habitat for residential and migratory birds (including raptors), small mammals, and reptiles that have become adapted to urban areas.

Riparian Forest and Scrub. Riparian forest and scrub is a native community that occurs in the project area. This community consists of forested areas and underbrush habitat, including native and nonnative trees, shrubs, vines, and brush in a narrow band along the river. This community provides high quality habitat for birds, mammals, and reptiles as well as providing essential shaded riverine aquatic (SRA) habitat for fish species.

Native Oak Trees. The Sacramento County Ordinance, Chapter 19.12, Tree Preservation and Protection (Tree Preservation Ordinance), regulates the removal or disturbance of all species of oak trees native to Sacramento County. These species include valley oak, interior live oak, blue oak, oracle oak, and black oak. The Tree Preservation Ordinance applies to any native oak tree, as well as other species of trees in addition to oaks. Typically, only trees 6 inches in diameter at breast height or greater are protected (County of Sacramento Municipal Code, 9.12).

The City of Sacramento Protection of Trees Ordinance (City of Sacramento Municipal Code 12.56.060) protects trees of any size on public property, maintenance easements, or city streets from injury or destruction. Additionally, the City of Sacramento Heritage Tree Ordinance (City of Sacramento Municipal Code 12.64.020) protects trees of any species with a circumference of 100 inches or more; California native oak, buckeye, and sycamore trees with a circumference of 36 inches or more; and trees of any species with a circumference of 36 inches or more in a riparian zone.

Potential Environmental Effects

Basis of Significance. A project would significantly affect vegetation and wildlife if it would: (1) significantly reduce the amount of native vegetation and wildlife habitat in the project area to a point that native wildlife could not live or survive in the project area; or (2) permanently remove or disturb sensitive native communities.

No Action. Under the no action alternative, the levees in all sites would continue to be maintained by local levee maintenance districts. Maintenance activities typically include mowing and spraying the levee slopes to regulate vegetation growth. Under this alternative, the proposed project would not be constructed by USACE. There would be no change to the native vegetation or wildlife in the project area; however, a levee breach in the project area or emergency actions taken to prevent flooding in the possible event of levee failure may result in loss of vegetation.

Proposed Levee Improvements. Construction at Sites L7, L10, R3A, and R7 would involve jet grout construction techniques. While this technique minimizes impacts to the vegetation on and around the levee itself, the jet grout spoil material must be dried in the staging areas prior to removal and disposal. Due to the uncertainty of the staging areas associated with this project, all potentially affected vegetation associated with construction is discussed and evaluated fully under a worst case scenario basis. The actual construction most likely would not result in all of the impacts discussed below.

Site L7. The large cottonwood located on the waterside levee slope upstream from the Fair Oaks Boulevard/J Street Bridge would require trimming. The ornamental shrubs located adjacent to the access ramp leading from Sacramento State to the levee crown would require trimming in order to allow construction vehicles access to the levee crown. Some ornamental trees and shrubs in the parking facility associated with the Seventh Day Adventist Church and the Scottish Rite Masonic Center may require trimming. The use of the grassy area associated with the Scottish Rite Masonic Center would involve the removal of the landscaped grasses. There is an elderberry shrub located on the landside of the levee adjacent to the Seventh Day Adventist parking lot that would be protected in place. Impacts to elderberry shrubs are discussed in Special Status Species, Section 3.2.4.

Site L10. Two elderberry shrubs in poor health located in the proposed staging area under Howe Avenue Bridge would be removed and transplanted into a mitigation site. Details pertaining to these shrubs are described further in Section 3.2.4, Special Status Species. Other ruderal herbaceous vegetation on the levee slopes between the Howe Avenue Bridge and the La Riviera access point would be removed in preparation for the levee reshaping proposed for this site. Grasses would be removed from the staging area, and some trees overhanging the site would require trimming. All other shrubs and vegetation would be protected in place.

Site R3A. The landscaped grasses located in the staging area would be removed, and some of the trees overhanging the construction site may require trimming.

Site R7. Trees overhanging the levee access ramp located at Spanos Court would be trimmed. There are several large oak trees located in the proposed staging area on the waterside toe of the levee. These trees would be protected in place; however, some trimming may be necessary. The proposed waterside staging area also overlaps an area of the Parkway that was restored with native vegetation by SRCSD in 2006. If this area is used for staging, shrubs and trees would be protected in place; however, up to one acre of restored native grasses would be removed. There are two elderberry shrubs in the staging area and several elderberry shrubs

within 100 feet of the project area; these shrubs would be protected in place. Impacts to elderberry shrubs are discussed in Special Status Species, Section 3.2.4.

Construction activities may require minimal trimming of native oak and other large trees adjacent to the project areas. Temporary displacement of local wildlife populations due to noise and increased human presence is likely to occur during construction activities. The effects to vegetation and wildlife are temporary and would be less than significant once the avoidance, minimization, and mitigation measures described below are implemented.

Avoidance, Minimization, and Mitigation Measures

Some trees and shrubs might be removed as a part of this project. Trees and shrubs that must be removed as part of the project would be identified and removed between the months of November and February in order to reduce impacts to nesting birds. Trimming or removal would be conducted under the observation or direction of a qualified arborist. Trees that must be removed would either be replaced with like species or with native tree species, such as valley oaks and sycamores, which would enhance the quality of the environment.

Trees and shrubs within the construction footprint that would not be removed would be protected in place with temporary fencing placed one and a half times the dripline of each tree or shrub, when possible.

Grasses removed due to construction activities would be restored through reseeding. Landscaped ornamental grasses would be replaced in-kind; areas not associated with landscaping would be reseeded with native vegetation including California brome (*Bromus carinatus*), small fescue (*Vulpina microstachys*), and creeping wildrye (*Leymus triticoides*). Reseeded areas would be periodically monitored until 85 percent vegetation cover is achieved or until May 1 of the year following the reseeding. If hydroseeded areas do not reach the required amount of cover by May 1, additional erosion control may be required.

If the proposed staging area on the waterside toe of R7 is used, the restoration of the native vegetation mitigation site would be required. During mobilization and set-up activities, the first 12 inches of topsoil of the areas to be excavated would be segregated and stockpiled to the extent feasible in order to return the topsoil to the restoration site.

Upon the completion of the construction project, stockpiled soil would be replaced, reserving the stockpiled top soil to spread on top of the restoration site. Bare soil would be hydroseeded with a native vegetation mix including California brome (*Bromus carinatus*), small fescue (*Vulpina microstachys*), and creeping wildrye (*Leymus triticoides*). After the area has been hydroseeded and sufficient precipitation has provided soil moisture to a depth of 2 inches, plugs of native grasses consisting of approximately 90 percent creeping wild rye (*Leymus triticoides*) and 5 percent each Santa Barbara sedge (*Carex barbarae*) and slender sedge (*Carex praegracilis*) would be planted every 9 square feet throughout the site. Irrigation lines would not be required if the plants are installed during the rainy season (between November 15 and February 15); however, if restoration procedures are delayed until the following spring, irrigation lines would be required until the grasses are established. Monitoring and revegetation as

required would continue for three years or until native vegetation reaches 20 percent cover with less than 5 percent invasive non-native vegetative cover. Irrigation lines, if required, would be removed upon completion of the restoration procedures.

Effects associated with the trimming of trees and temporary removal of grasses would be less than significant after mitigation. If any further vegetation removal were to occur, mitigation measures would be coordinated with USFWS under the Fish and Wildlife Coordination Act. The final Coordination Act Report (CAR) is located in Appendix C. The mitigation measures would be conducted in or near the areas that the vegetation was removed. Avoidance, minimization, and mitigation measures would reduce impacts to less than significant.

3.2.3 Fisheries

Existing Conditions

The lower 23 miles of the American River, including backwaters and dredge ponds, support at least 41 fish species, half of which are game fish. The Federally- and State-endangered Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*), the Federally-threatened Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*), the Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*), and the Federally-threatened Central Valley steelhead (*Oncorhynchus mykiss*) are supported by the Sacramento and American River watersheds. Other notable species include the American shad, rainbow trout, striped bass, black bass, carp, Sacramento sucker, Sacramento splittail, and hardhead. The American River supports a mixed run of hatchery and naturally produced winter-run Chinook salmon. On average, tens of thousands of hatchery or naturally produced Chinook salmon return each year to spawn. In order to spawn successfully, many of these species require cold, clear water and sand or gravel in shallow riverbanks.

The project areas are within the essential fish habitat (EFH) for the spring-run and winter-run Chinook salmon and the Central Valley steelhead. The Magnuson-Stevens Fishery Conservation and Management Act requires consultation with the National Marine Fisheries Service (NMFS) if a project action would potentially affect EFH. EFH is defined in the Magnuson-Stevens Act as "…those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity." As required by the Act, NMFS implemented regulations to provide guidance regarding EFH designation. The regulations further clarify EFH by defining "waters" to include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrates" to include sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" to mean the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding or growth to maturity" to cover a species' full life cycle.

Potential Environmental Effects

Basis of Significance. An alternative would be considered to have a significant effect on fisheries resources if it would: (1) substantially interfere with the movement of any resident or

migratory fish; (2) permanently remove or diminish EFH; or (3) involve discharges of material into waterways that would pose a hazard to fish.

No Action. Under the no action alternative, the levee improvement project would not be constructed. Current levee maintenance, recreation, and public activity would not change. Fish would continue to be affected by localized fishing and other water-based recreational activities. However, the possible event of levee failure may result in severe discharges of hazardous material into waterways that may result in fish mortality, as well as the degradation and loss of EFH.

Proposed Levee Improvements. Construction would not directly interfere with fisheries, including aquatic areas, underlying substrates or associated biological communities. There would be no in-water work, no bank stabilization, and no removal of woody debris or SRA from the river. There is potential for fugitive dust and construction runoff to enter the American River, and the use of the waterside toe as a staging area could potentially affect fisheries if a high water event washed unstable soil into the river.

The possibility exists that the proposed staging area for Site R7 (Plate 5) could also be used during the construction of Site L7. If the Site R7 staging area was used for the batch plant and drying bed area, it would be necessary to pipe jet grout and waste material across the Fair Oaks Boulevard/J Street Bridge. If the proposed multiple use staging area is used, the pipes would be placed along the pedestrian walkway on the south side of the bridge (Plate 6). Although a breakage in the pipe is highly unlikely, any material spilled from the pipe while on the bridge would flow directly into the American River. If a large amount of material was spilled, the spilled material and following clean-up activities could affect EFH and fisheries.

Avoidance, Minimization, and Mitigation Measures

If material is piped over the American River, the pipelines would be placed in two steel conduits that would contain any potential leaks. The conduits would be placed along the recreational path on the south side of the Fair Oaks Boulevard/J Street Bridge. The jet grout system would be monitored for fluctuations in pressure (signifying a leak). Additionally, the jet grout system is equipped with an automatic shut-off system that would activate with large fluctuations in pressure. Any material that escapes from the pipeline into the steel conduits would flow into the staging areas where it would be contained and cleaned up. If any leaks occur from the pipes into the conduits, construction would stop until the pipes are repaired or replaced. Additional containment systems are under discussion. With these and other containment systems in place, the potential for material to flow into the American River would be minimized; therefore, the potential to affect EFH would be minimal.

No work would occur in a wet or aquatic environment and the work would be of limited duration; therefore, the proposed action is not expected to affect fishery or aquatic resources. The contractor would be required to develop and submit a Storm Water Pollution Prevention Plan (SWPPP) and a Spill Preventions and Countermeasure Plan (SPCP) prior to initiating construction activities to minimize the potential for soil or other contaminants to enter the river. The SWPPP and SPCP must be approved by USACE.

No materials would be discharged into the American River. Water trucks would be used for dust suppression along all areas of disturbed soil and along the haul routes; trucks would be monitored so over watering and runoff does not occur. The contractor would not be allowed to store fuels, lubricants, or other potential hazardous substances on site. If equipment is to be refueled on site, BMPs would be used to avoid and contain any spills. Any potential effects would be minimized through avoidance, minimization, and mitigation measures proposed under Air Quality (Section 3.2.5) and Water Quality and Resources (Section 3.2.7).

With these BMPs in place, this project is expected to have no effect on fisheries, fish habitat or EFH; therefore, impacts would be considered less than significant.

3.2.4 Special Status Species

Existing Conditions

Regulatory Setting. Certain special status species and their habitats are protected by Federal, State, or local laws and agency regulations. The Federal Endangered Species Act (ESA) of 1973, 16 U.S.C. § 1531 et seq., provides legal protection for plant and animal species in danger of extinction. This act is administered by USFWS and NMFS. The California Endangered Species Act (CESA) of 1977 parallels the Federal ESA and is administered by CDFW. Other special status species lack legal protection, but have been characterized as "sensitive" based on policies and expertise of agencies or private organizations, or policies adopted by local government. Special-status species are those that meet any of the following criteria:

- Listed or candidate for listing under the Federal ESA (50 CFR 17);
- Listed or candidate for listing under CESA;
- Nesting bird species and active nests of birds listed under the Migratory Bird Treaty Act;
- Species listed in the Bald and Golden Eagle Protection Act;
- Fully protected or protected species under State CDFW code;
- Wildlife species of special concern listed by the CDFW;
- Plant species listed as Rare under the California Native Plant Protection Act;
- Plant species listed by the California Native Plant Society;
- Species protected by local ordinances such as the Sacramento County Tree Preservation and Protection Ordinance, Chapter 19.12, the City of Sacramento Protection of Trees Ordinance, Chapter 12.56, and/or the City of Sacramento Heritage Tree Ordinance, Chapter 12.64;
- Species protected by goals and policies of local plans such as the American River Parkway Plan, which includes anadromous and resident fishes, as well as migratory and resident wildlife; and
- Essential Fish Habitat listed under the Magnuson-Stevens Act.

Special Status Species Evaluation. Lists of special status species and candidate species that may be affected by projects in the U.S. Geological Survey (USGS) quad East Sacramento were obtained on September 3, 2013, via the USFWS website and the California Natural Diversity Database (CNDDB). The USFWS and CNDDB lists are included in Appendix A. A total of 14 special status species were identified as occurring within the quadrangle East Sacramento; however, seven of those species are not known to occur or have habitat within the project areas. These species are not discussed further in this document. The following Federally- and State-listed species were identified as having the potential to occur in the vicinity of the project areas and could be affected by construction activities:

- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (VELB) (Federal Threatened) and critical habitat;
- White-tailed kite (*Elanus leucurus*) (CDFW Fully Protected);
- Swainson's hawk (*Buteo swainsoni*) (State Threatened);
- Cooper's hawk (*Accipiter cooperii*) (State Species of Concern);
- Bank swallow (*Riparia riparia*) (State Threatened);
- Central Valley steelhead (*Oncorhynchus mykiss*) (Federally Threatened) and critical habitat; and
- Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*) (Federally and State Endangered), Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*), and critical habitat.

Valley Elderberry Longhorn Beetle. The VELB is endemic to the riparian habitats in the Sacramento and San Joaquin Valleys where it resides on elderberry (*Sambucus* spp.) plants. The beetle's current distribution is patchy throughout the remaining riparian forests of the Central Valley from Redding to Bakersfield (USFWS, 1991). The beetle is a pith-boring species that depends on elderberry plants during its entire life cycle. Throughout its range, the beetle is estimated to inhabit approximately 20 percent of all suitable elderberry shrubs (USFWS, 1991).

The Parkway, with an abundance of elderberry shrubs in a well-connected corridor, provides high quality habitat for the VELB. During biological surveys conducted by USACE and USFWS biologists on March 13th, 2013, more than 30 elderberry shrubs were identified within 100 feet of the project areas. Results of the survey are outlined under "Potential Environmental Effects" below, as well as in Appendix A. It is assumed that many more elderberry shrubs exist in this section of the Parkway; however, only those shrubs located within the proposed project areas, staging areas, and 100 foot radius around the project areas and staging areas were surveyed. USFWS has recommended that a 100-foot buffer zone around elderberry shrubs be maintained to avoid indirect effects to the VELB.

White-tailed Kite. The white-tailed kite is a common to uncommon yearlong resident in coastal and valley lowlands and is rarely found away from agricultural areas. The white-tailed kite forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. Nests are made of loosely piled sticks and twigs; lined with grass, straw, or rootlets; and placed near the top of a dense oak, willow, or other tree stand usually 6 to 20 meters (20 to 100 feet) above

ground. Nests are located near open foraging areas in lowland grasslands, agricultural areas, wetlands, oak-woodland and savannah habitats, and riparian areas associated with open areas.

White-tailed kites are recorded as occurring in several locations along the American River, and the riparian habitat in the vicinity of the project area provides suitable nesting habitat for this species. Biological surveys would be conducted throughout the breeding season prior to any construction activities according to the CDFW Swainson's Hawk Survey Protocols.

The CNDDB recorded no sightings of white-tailed kites in the project area; however, surveys conducted in 2010 noted one nesting pair of white-tailed kites within ½ mile of Site L10. During biological surveys conducted in 2013, two white-tailed kites were observed perched within ¼ mile of Site L10. Biological surveys will continue to be conducted throughout the breeding season according to the CDFW Swainson's Hawk Survey Protocols.

*Swainson's Hawk***.** Swainson's hawks are uncommon breeding residents and migrants in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and the Mojave Desert. Swainson's hawks breed in California and over-winter in Mexico and South America. They usually arrive in the Central Valley between March 1 and April 1, and migrate south between September and October. Swainson's hawk nests usually occur in trees near the edges of riparian stands, in lone trees or groves of trees in agricultural fields, and in mature roadside trees.

Swainson's hawks are recorded as occurring in several locations along the American River, and the CNDDB records several sightings of Swainson's hawks in the project area. During biological surveys conducted in 2013, two Swainson's hawks were observed soaring within ½ mile of Site L10, and a pair of Swainson's hawks was observed near the project area of Site R3A. Biological surveys will continue to be conducted throughout the breeding season according to the CDFW Swainson's Hawk Survey Protocols.

Cooper's Hawk. Cooper's hawks nest in deciduous trees or conifers in crotches or cavities that are usually 20 to 50 feet off the ground. The nest is a stick platform lined with bark. Nests are usually placed in second growth coniferous stands or in the deciduous riparian areas that are closest to streams.

The CNDDB recorded no sightings of Cooper's hawks in the project area. During biological surveys conducted March 27, 2013, a female Cooper's hawk was observed perched within ½ mile of Site L10. Biological surveys will continue to be conducted throughout the breeding season according to the CDFW Swainson's Hawk Survey Protocols.

Red-shouldered Hawk. Red-shouldered hawks nest in dense riparian habitat with large trees; nests can be found between 20 and 80 feet above the ground. Red-shouldered hawks typically breed from February through July, with peak activity April and May. Red-shouldered hawks are protected under the Migratory Bird Treaty Act.

During biological surveys conducted in 2013, a red-shouldered hawk pair was observed nesting on the upstream side of the Howe Avenue Bridge adjacent to the L10 project area, and several other red-shouldered hawks were observed in the area (see map in Appendix A).

Biological surveys will continue to be conducted throughout the breeding season according to the CDFW Swainson's Hawk Survey Protocols.

Bank Swallow. Bank swallows nest in small burrows that they dig into riverbanks, primarily along the Sacramento and Feather Rivers (Garrison, 1999). At nesting colonies, they forage mostly within 200 meters (650 feet) of their nesting burrows, but this range can vary with distances to good foraging areas.

Bank swallows are recorded as occurring in a few locations along the American River. In 1986, the CNDDB recorded a colony of nesting bank swallows on the south bank of the American River, upstream from Cal Expo, approximately 1,000 feet from the Business 80 bridge (approximately 3,000 feet from Site R3A). No bank swallows were detected during biological surveys conducted February through April 2013. Additional surveys would be conducted prior to any construction activities.

Central Valley Steelhead. Central Valley steelhead and its critical habitat occur along the American and Sacramento Rivers. Peak spawning occurs from December to April in small streams and tributaries with cool, well-oxygenated water. Steelheads spawn most often in areas with water velocities of about 2 feet per second with gravel-sized material. Juveniles usually rear in freshwater from 1 to 3 years, and require water temperatures lower than 66°F. Naturally spawning stocks of Central Valley steelhead are known to occur in the Sacramento River, American River, and tributaries.

Sacramento River Winter-run Chinook Salmon. Sacramento River winter-run Chinook salmon and its critical habitat occur along the American and Sacramento Rivers. Winter-run salmon are distinguished from other runs of Chinook salmon in the American and Sacramento River watersheds by the timing of their upstream migration and spawning season. After maturing in the ocean, they return almost exclusively as 3-year olds to the river for spawning. Upstream migration extends from mid-November to mid-July. The bulk of the fish spawn in May and June in the main stem of the Sacramento River upstream from Red Bluff. Juvenile seaward migration begins in July and continues through December.

Central Valley Spring-Run Chinook Salmon. Central Valley spring-run Chinook salmon and its critical habitat occur along the American and Sacramento Rivers. Adult spring-run Chinook salmon enter the Delta from the Pacific Ocean beginning in January and enter natal streams from March to July (Myers *et al*., 1998). Typically, spring-run Chinook salmon use mid-to high-elevation streams that provide appropriate temperatures and sufficient flow, cover, and pool depth to allow over-summering during maturation.

Potential Environmental Effects

Basis of Significance. Adverse effects on special status species would be considered significant if an alternative would result in any of the following: (1) direct or indirect reduction in the growth, survival, or reproductive success of species listed or proposed for listing as threatened or endangered under the Federal or State Endangered Species Acts; (2) direct mortality, long-term habitat loss, or lowered reproduction success of Federally- or State-listed

threatened or endangered animal or plant species or candidates for Federal listing; (3) direct or indirect reduction in the growth, survival, or reproductive success of substantial populations of Federal species of concern, State-listed endangered or threatened species, or species of special concern or regionally important commercial or game species; or (4) an adverse effect on a species' designated critical habitat.

No-Action Alternative. Under the no action alternative, there would be no construction-related effects to existing special status species or critical habitat. The types of special status species and their associated habitats would remain the same. Current levee maintenance, recreation, and public activity would not change. The effects of these activities on special status species and their associated habitat would be the same; however, the possible event of levee failure may result in the loss of critical habitat, and special status species could be adversely affected.

Proposed Levee Improvements. The construction of the levee improvements would potentially result in direct and indirect effects to elderberry shrubs, the host plant of the VELB. Construction of the levee improvements could also result in direct and indirect effects to white-tailed kites, Swainson's hawks, Cooper's hawks, bank swallows, Central Valley steelhead, and Central Valley winter-run Chinook salmon.

Effects to Valley Elderberry Longhorn Beetle. The construction of the levee improvements would potentially result in direct and indirect effects to elderberry shrubs, the critical habitat of the VELB. Direct effects would include removal or damage to the plants during site preparation and construction activities. Indirect effects would include physical vibration and an increase in dust during operation of equipment and trucks during construction activities. These direct and indirect effects would be considered potentially significant if they cause adverse effects on elderberry shrubs and/or cause mortality or stress to VELB residing in the shrubs.

Biological surveys were conducted by DWR, USACE, and USFWS biologists on March 13, 2013. Survey results and maps are included in Appendix A; site specific details on elderberry shrubs are described below.

Site L7. One large elderberry shrub is located on the landside of the levee near the Seventh Day Adventist Church. The truck haul route would be constructed within 20 feet of the elderberry shrub, potentially causing indirect effects to the shrub and/or stress to VELB residing in the shrub. These effects would be reduced to less than significant by implementing the avoidance, minimization, and mitigation measures described below.

Site L10. As well as a large thicket of elderberry shrubs on the downstream end of the project area, there are three elderberry shrubs adjacent to the project area on the waterside toe of the levee. Additionally, two elderberry shrubs are located within the landside staging area located under the Howe Avenue Bridge. Through consultation with USFWS, it was determined that these shrubs should be transplanted into a mitigation site prior to construction in order to reduce impacts to VELB to less than significant. Compensation for the removal and transplanting of the 2 elderberry shrubs would require an additional 13 elderberry seedlings and

13 associated native trees or shrubs to be planted in a conservation site located downstream of Cal Expo or other approved conservation area along the American River Parkway. Correspondence relating to removing these shrubs and mitigation requirements are included in Appendix A.

Site R3A. There are several elderberry shrubs located on the waterside toe of the proposed project area. While no construction activities are proposed for that area, construction vehicles would pass less than 100 feet from the elderberry shrubs. Elderberry shrubs and VELB could be indirectly affected by vibration and dust. These effects would be reduced to less than significant by following the avoidance, minimization, and mitigation measures described below.

Site R7. There are more than 14 elderberry shrubs adjacent to the project area, including one large elderberry shrub located within the proposed staging area on the waterside toe. The construction at Site R7 is anticipated to begin on April 15, during the fly season of the VELB. Due to the small size of the staging area, it would not be feasible to adhere to the recommended 100 foot buffer zone around the elderberry shrubs located in the staging area. The elderberry shrub would be protected in place; however, the elderberry shrub and VELB could be indirectly affected by vibration and dust. These effects would be reduced to less than significant by implementing the avoidance, minimization, and mitigation measures described below.

Effects to White-tailed Kite, Swainson's Hawk, and Cooper's Hawk. Construction of the levee improvements would not directly affect white-tailed kites, Swainson's hawks, or Cooper's hawks. Indirect effects would include physical vibration, and presence of construction vehicles and workers. Construction activities in the vicinity of a nest have the potential to result in forced fledging or nest abandonment by adult hawks, potentially causing significant effects due to the direct mortality and/or reduction in the success of a listed species.

Effects to Bank Swallows. Construction of the levee improvements could potentially result in direct and/or indirect affects to bank swallows if this species begins nesting in or adjacent to the project area prior to construction. Construction activities in the vicinity of bank swallow nesting areas could cause destruction of nesting habitat, and direct mortality could be caused by the sloughing of the embankment due to vibration, potentially causing significant effects due to the direct mortality and/or reduction in the success of a listed species.

Effects to Central Valley Steelhead, Sacramento River Winter-Run Chinook Salmon, and Central Valley Spring-run Chinook Salmon. The American River is considered critical habitat for the Central Valley steelhead, Sacramento River winter-run Chinook salmon, and Central Valley spring-run Chinook salmon. Construction at Sites L7, L10, R3A, and R7 is not expected to adversely affect fish species or their associated habitats. There would be no in-water work, and no riverine habitat would be removed. There is potential for fugitive dust and construction runoff to enter the American River, indirectly affecting the critical habitat of listed fish species. Avoidance, minimization, and mitigation measures for water quality would be implemented to reduce impacts on EFH to less than significant at these sites.

Avoidance, Minimization, and Mitigation Measures

Prior to ground disturbance, all on-site construction personnel would be given instruction regarding the presence of sensitive species and the importance of avoiding these species and their habitats. Additional avoidance, minimization, and mitigation measures would follow the recommendations provided by USFWS under the Fish and Wildlife Coordination Act, including but not limited to:

- Avoid impacts to trees and shrubs. Any trees or shrubs removed would be replaced on-site with container plantings. These plantings would be monitored for 5 years or until they are established and self-sustaining.
- Avoid impacts to nesting migratory birds by conducting pre-construction surveys for active nests near the work areas. Work activity around active nests would be avoided until the young have fledged.
- Minimize project impacts by reseeding all disturbed areas at the completion of construction.
- Contact CDFW regarding possible effects of the project on State-listed species.

The USFWS Planning Aid Letter is included in Appendix C. These measures, as a requirement of ESA compliance, would reduce the effects on sensitive species to less than significant. Species-specific avoidance, minimization, and mitigation measures are described below.

Valley Elderberry Longhorn Beetle. On June 21, 2013, USACE initiated consultation with USFWS under Section 7 of the Endangered Species Act. USACE proposes to remove and transplant two elderberry shrubs located in the staging area of Site L10 to the compensation site located at Cal Expo. Compensation would require the planting of 13 elderberry seedlings and 13 associated native plants on 0.11 acres. Additionally, on August 8, 2013, USACE reinitiated consultation with USFWS in order to request that two elderberry shrubs located in the proposed staging area at Site R7 be protected in place with a 20 foot buffer zone between April 15, 2014 until the completion of construction.

Elderberry shrubs located on the waterside toe of Site L10, as well as elderberry shrubs located at Sites L7, R3A, and R7 would be protected in place. In order to avoid and minimize potential take of the VELB, the following measures taken from USFWS's "Conservation Guidelines for the Valley Elderberry Longhorn Beetle," July 1999, would be incorporated into the project:

- With the exception of the elderberry shrub located in the proposed staging area at Site R7, a minimum setback of 100 feet from the dripline of all elderberry shrubs would be established, if possible. If the 100 foot minimum buffer zone is not possible, USFWS recommends postponing disturbance activities until after June 15, the fly season of the VELB. After June 15, a minimum buffer zone of 20 feet would be required. This area would be fenced, flagged and maintained during construction.

- Environmental awareness training would be conducted for all workers before they begin work. The training would include status, the need to avoid adversely affecting the elderberry shrubs, avoidance areas and measures taken by the workers during construction, and contact information.

- Dust suppression measures would be used and a biological monitor would provide instruction on establishing the buffer zones for the shrubs.

- Signs would be placed every 50 feet along the edge of the elderberry buffer zones. The signs would include: "This area is the habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be readable from a distance of 20 feet and would be maintained during construction.

The proposed avoidance, minimization, and mitigation measures would reduce the effects on the VELB to less than significant.

White-tailed Kite, Swainson's Hawk, and Cooper's Hawk. Prior to the onset of construction, biological surveys for the presence of nesting raptors (white-tailed kites, Swainson's hawks, and Cooper's hawks) would be conducted within one-half mile of the proposed construction area. If a survey determines that a nesting pair is present, USACE would coordinate with CDFW and USFWS. To avoid potential effects to nesting raptors, CDFW typically requires the avoidance of nesting sites during construction activities and/or avoiding construction during the nesting season. If construction activities are determined to be necessary during the nesting season, then an on-site biologist/monitor experienced with raptor behavior would monitor the nest while construction-related activities are taking place. If raptors exhibit agitated behavior in response to construction-related activities, the biological monitor would have the authority to stop work and would consult with CDFW and USFWS to determine the best course of action necessary to avoid nest abandonment or take of individuals. The proposed avoidance, minimization, and mitigation measures would reduce the effects on white-tailed kites, Swainson's hawks, and Cooper's hawks to less than significant.

Bank Swallow. Prior to the onset of construction, biological surveys for the presence of bank swallows would be conducted within one-half mile of the proposed construction areas. Two weeks prior to the onset of construction, biological surveys would be conducted in order to confirm the results from the previous surveys. If a survey determines that a nesting colony is nearby, USACE would coordinate with CDFW and the proper avoidance and minimization measures would be implemented. With the implementation of CDFW's avoidance and minimization measures, there would be no effect on bank swallows.

Central Valley Steelhead, Central Valley Spring-run Chinook Salmon, and Sacramento River Winter-Run Chinook Salmon. The contractor would be required to develop and submit a SWPPP to minimize the potential for soil or other contaminants to enter the river. The contractor would also be required to develop and submit a SPCP prior to initiating construction activities. The SWPPP and SPCP must be approved by USACE. The proposed avoidance,

minimization, and mitigation measures would reduce the effects on the Central Valley steelhead, the Central Valley spring-run Chinook salmon, and the Sacramento River winter-run Chinook salmon to less than significant.

3.2.5 Air Quality

Existing Conditions

Regulatory Background. The Federal Clean Air Act establishes National Ambient Air Quality Standards (NAAQS) and delegates enforcement of these standards to the states, with direct oversight by the U.S. Environmental Protection Agency (EPA). In California, the California Air Resources Board (CARB) is the agency responsible for air quality regulation. The Sacramento area is included in the Sacramento Valley Air Basin. The air quality in the area is managed by the Sacramento Metropolitan Air Quality Management District (SMAQMD).

The California Clean Air Act established California Ambient Air Quality Standards (CAAQS). These standards are more stringent than Federal standards and include pollutants not listed in Federal standards. All Federal projects in California must comply with the stricter State air quality standards. The NAAQS and the CAAQS tables are available in Appendix B.

Ozone. The project area is in the Sacramento Federal Ozone Nonattainment Area (SFNA). The SFNA is subject to regulations, attainment goals, and standards of the U.S. and California EPA. On February 14, 2008, CARB, on behalf of the air districts in the Sacramento region, submitted a letter to EPA requesting a voluntary reclassification (increase severity) of the SFNA from a "serious" to a "severe" 8-hour ozone nonattainment area, with an extended attainment deadline of June 15, 2019, and additional mandatory requirements. On May 5, 2010, EPA approved the request effective June 4, 2010 (SMAQMD, 2011). The SFNA is thus designated a "severe" nonattainment area for the 8-hour NAAQS for ozone. The EPA General Conformity Regulation requires that "severe" designated nonattainment areas further reduce nitrogen oxide (NO_x) and reactive organic gas (ROG) thresholds to 25 tons per year rather than 100 tons per year.

Particulate Matter. "Particulate matter" is a term used for solid or liquid particles emitted into the air. Particulate matter less than 10 microns in diameter (PM_{10}) is small enough to be inhaled and can cause health problems in the respiratory system. According to the State and Federal 24-Hour Ambient Air Quality Standards, Sacramento County is designated as a nonattainment area for PM_{10}. Additionally, on October 16, 2006, the EPA promulgated a new 24-hour standard for particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). This change lowered the daily standard from 65µg/m3 to 35µg/m3 to protect the general public from short-term exposure to fine particulate matter. Sacramento does not meet the new standards (EPA, 2007). The California Clean Air Act of 1988 requires nonattainment areas to achieve and maintain the CAAQS by the earliest practicable date and local air districts to develop plans for attaining State ozone standards.

Toxic Air Contaminants. Under the Clean Air Act, toxic air contaminants (TACs) are airborne pollutants that may be expected to result in an increase in mortality, serious illness, or

may pose a present or potential hazard to human health. A chemical becomes a regulated TAC after it is assessed for its potential for human exposure, and evaluated for its health effects on humans by CARB's California Air Toxics Program or the EPA's National Air Toxics Assessment. TACs are not classified as criteria air pollutants (CAPs) and no ambient air quality standards have been established for them. The effects of various TACs are very diverse and their health impacts tend to be local rather than regional. Consequently, uniform standards for these pollutants have not been established.

Currently, the estimated risk from particulate matter emissions from diesel exhaust (diesel PM) is higher than the risk from all other TACs combined. In September 2000, CARB adopted the Diesel Risk Reduction Plan (DRRP), which recommends many control measures to reduce the risks associated with diesel PM and achieve a goal of 75 percent diesel PM reduction by 2010 and 85 percent by 2020. The key elements of the DRR Plan are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, to lower the sulfur content of diesel fuel, and implement advanced technology emission control devices on diesel engines (CARB, 2010).

On November 3, 1993, the EPA issued the General Conformity Rule, stating that Federal actions must not cause or contribute to any violation of a NAAQS or delay timely attainment of air quality standards for those areas designated as in nonattainment of Federal standards. A conformity determination is required for each pollutant where the total of direct and indirect emissions caused by a Federal action in a nonattainment area or maintenance area exceeds threshold levels listed in the rule (40 C.F.R. § 93.153). The Federal standards and local thresholds for short-term construction projects in Sacramento County are shown in Table 1.

Table 1. Air Emission Thresholds for Federal and Local Criteria Pollutants

Criteria Pollutant	Federal Standard (tons/year)	SMAQMD Threshold (lbs/day)
NO_x	25**	85
CO	100	*
SO	100	*
PM_{10}	100	*
ROG	25**	*

NO_x = nitrogen oxides
CO = carbon monoxide
SO = sulfur oxides
PM_{10} = particulate matter 10 micrometers or less
$PM_{2.5}$=particulate matter 2.5 micrometers or less
ROG = reactive organic gases
* = default to State standard (see California Ambient Air Quality Standards, Appendix B)
** = rates for "severe" Federal nonattainment areas [*Federal Register* (40 CFR), 1993]
Source: SMAQMD, 2011

Sources of Pollutants. There are many sources of air pollutants within the region. To estimate the sources and quantities of pollution, CARB, in cooperation with local air districts and industry, maintains an inventory of California emission sources (CARB, 2009). Table 2 shows the 2008 Estimated Annual Average Emissions as estimated for the SMAQMD (CARB, 2008).

Table 2. 2008 Estimated Annual Average Emissions (Tons per Year)

Stationary Sources	ROG	CO	NO_x	SO_x	PM	PM_{10}	$PM_{2.5}$
Fuel Combustion	0.3	3.7	3.6	0.1	0.4	0.4	0.4
Waste Disposal	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Cleaning and Surface Coatings	4.0	-	-	-	-	-	-
Petroleum Production and Marketing	2.5	0.0	0.0	-	-	-	-
Industrial Processes	0.9	0.3	0.2	0.1	2.3	1.1	0.5
TOTAL Stationary Sources	**8.1**	**4.1**	**3.9**	**0.1**	**2.7**	**1.5**	**0.9**
Area wide Sources							
Solvent Evaporation	13.2	-	-	-	0.0	0.0	0.0
Miscellaneous Processes	4.0	40.3	3.1	0.1	74.4	34.9	10.1
TOTAL Area wide Sources	**17.3**	**40.3**	**3.1**	**0.1**	**74.4**	**34.9**	**10.1**
Mobile Sources							
On-road Motor Vehicles	22.7	209.3	44.1	0.2	2.1	2.0	1.4
Other Mobile Vehicles	12.9	86.0	24.9	0.2	1.5	1.5	1.3
TOTAL Mobile Sources	**35.6**	**295.3**	**69.0**	**0.4**	**3.6**	**3.5**	**2.8**
GRAND TOTAL for SMAQMD	**61.0**	**339.6**	**76.0**	**0.6**	**80.7**	**44.4**	**13.8**

NO_x = nitrogen oxides
CO = carbon monoxide
SO_x = sulfur oxides
PM_{10} = particulate matter 10 micrometers or less
$PM_{2.5}$=particulate matter 2.5 micrometers or less
ROG = reactive organic gases
Note: Estimates are rounded.

Potential Environmental Effects

Basis of Significance. A project would significantly affect air quality if it would: (1) violate any ambient air quality standard; (2) contribute on a long-term basis to any existing or projected air quality violation; (3) expose sensitive receptors (such as schools, residences, or hospitals) to substantial pollutant concentrations; or (4) not conform to applicable Federal and State standards or local thresholds on a long-term basis.

No Action. Under the no action alternative, the project would not be constructed, and there would be no construction-related effects on air quality in the project area. Air quality would continue to be influenced by climatic and geographic conditions, local and regional emissions from vehicles and households, and local commercial and industrial land uses. Air quality is expected to improve in the future based on the stricter standards implemented by CARB and SMAQMD. The possible event of levee failure may temporarily increase the amount of vehicle emissions during flood-fighting activities, as well as increase the amount of vehicle emissions resulting from clean-up activities.

Proposed Levee Improvements. The proposed construction would not violate either NAAQS or CAAQS. Emissions associated with the project would be short-term during construction and the concentrations of pollutants would not be substantial. Combustion emissions would result from the use of construction equipment, truck haul trips to and from commercial sources and disposal sites, and worker vehicle trips to and from the work areas. Exhaust from these sources would contain ROG, CO, NO_x, PM_{10}, $PM_{2.5}$, and CO_2. Exhaust emissions would vary depending on the type of equipment, duration of use, and number of

construction workers and haul trips to and from the construction site. Fugitive dust would also be generated during disturbance of the ground surfaces during construction.

Construction activity can result in emissions of particulate matter from diesel exhaust (diesel PM). The use of off-road heavy-duty diesel equipment for site grading and excavation, paving, and other construction activities results in the generation of diesel PM emissions, which was identified as a TAC by CARB in 1998. SMAQMD has not established a quantitative threshold of significance for construction-related TAC emissions. Therefore, the SMAQMD recommends that lead agencies address this issue on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and its proximity to off-site receptors. Implementation of SMAQMD's Basic Construction Emission Control Practices would result in the reduction of diesel PM exhaust emissions in addition to CAP emissions, particularly the measures to minimize engine idling time and maintain construction equipment in proper working condition and according to manufacturer's specifications.

The updated Road Construction Emissions Model, Version 7.1.2 (September 2012), was used instead of the Urban Emissions Model, Version 7.5, as the Road Construction Model applies to linear construction activities such as levee construction and repair activities. The road construction model was used to estimate project emission rates for ROG, CO, NO_x, PM_{10}, $PM_{2.5}$, and CO_2. The estimated equipment to be used, volume of material to be moved, and disturbance acreages were compiled to determine the data to input into the emissions model and are included in Appendix B. The emission calculations are based on standard vehicle emission rates built into the model. The emissions were calculated separately for the work at Sites L7, L10, R3A, and R7. Details and results of the calculations for each site are provided in Appendix B, and the estimations for all sites are totaled in Table 3.

Table 3. Estimated Air Emissions for Sites L7, L10, R3A, and R7 (lbs/day)

	ROG	CO	NOx	PM_{10}	$PM_{2.5}$	CO_2
Site L7	5.7	33.7	55.6	12.9	4.7	7,443.2
Site L10	6.2	33.9	58.0	13.3	5.0	7,207.4
Site R3A	6.4	34.4	54.8	13.3	5.0	7,197.9
Site R7	6.7	36.2	62.8	23.5	7.3	7,706.6
Total emissions (lbs/day)	**25.0**	**138.2**	**231.2**	**63.0**	**22.0**	**29,555.1**

ROG = reactive organic gases
NOx = nitrogen oxides
CO = carbon monoxide
PM = particulate matter
CO_2 = carbon dioxide
Note: Estimates rounded.

Due to the regional nature of the project, air emissions estimations for Sites L7, L10, R3A, and R7 have been combined to determine compliance with standards, thresholds, and significance of effects. The estimated combined emissions are shown in Table 4.

Table 4. Combined Estimated Air Emissions for All Sites

	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$	CO_2
Total emissions (lbs/day)	**25.0**	**138.2**	**231.2**	**63.0**	**22.0**	**29,555.1**
SMAQMD thresholds (lbs/day)	N/A	N/A	85	N/A	N/A	N/A
Total tons (construction project)	**0.8**	**4.5**	**7.2**	**2.0**	**0.6**	**902.0**
Federal standards (tons/year)	25	100	25	100	N/A	N/A

ROG = reactive organic gases
NO_x = nitrogen oxides
CO = carbon monoxide
PM = particulate matter
CO_2 = carbon dioxide
Note: Estimates rounded.
Source: SMAQMD, 2011

Table 4 summarizes the combined estimated emissions for the project and compares them to the Federal standards and local thresholds. The results show that the combined projects would not exceed Federal standards; however, NO_x emissions would exceed the SMAQMD threshold of 85 pounds per day. Implementation of the standard construction mitigation measures as recommended by SMAQMD (Appendix B) would reduce the NO_x emissions by 20 percent and the PM_{10} emissions by 45 percent. These standard mitigation measures would reduce the effects on air quality from the construction of the project to less than significant.

Avoidance, Minimization, and Mitigation Measures

Combustion emissions would result from the use of construction equipment, truck haul trips to and from the borrow sites, and worker vehicle trips to and from the construction sites. The contractor would submit a list of vehicles to be used in the construction project for approval by USACE and SMAQMD. SMAQMD would approve the list only if the total fleet emissions would meet a 20 percent reduction in NO_x and a 45 percent reduction in PM_{10} in comparison to the state fleet emissions average. In order to achieve the required reductions in emissions, the following BMPs would be followed, in addition to the SMAQMD Guidance for Construction GHG Emissions Reductions (Appendix B):

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

- Use diesel-fueled equipment manufactured in 2003 or later, or retrofit equipment manufactured prior to 2003 with diesel oxidation catalysts; use low-emission diesel products, alternative fuels, after-treatment products, and/or other options as they become available.

- Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) would be repaired immediately, and USACE and SMAQMD would be notified within 48 hours of identification of non-compliant equipment.

- Any remaining emissions over the NO_x threshold would be reduced to zero through the payment of a mitigation fee. The cost of reducing one ton of NO_x as of July 1, 2013, is

$17,460 ($8.73/lb). The contractor would be responsible for payment of any required mitigation and administrative fees.

At least 48 hours prior to the use of heavy-duty off-road equipment, the contractor would provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager, and on-site foreman. SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Details of the full mitigation program are located in Appendix B.

In order to reduce fugitive dust and other particulate matter, the SMAQMD Enhanced Fugitive Dust PM Dust Control Practices (Appendix B) would be used, as well as the following BMPs:

- During construction, implement all appropriate dust control measures, such as tarps or covers on dirt piles, in a timely and effective manner.

- Periodically water all construction areas having vehicle traffic, including unpaved areas, to reduce generation of dust. Application of water would not be excessive or result in runoff into storm drains.

- Sweep paved streets adjacent to construction sites, as necessary, at the end of each day to remove excessive accumulations of soil or dust.

- Cover all trucks hauling dirt, sand, soil, or other loose material, or maintain at least 2 feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114. This provision would be enforced by local law enforcement agencies.

- Revegetate or pave areas cleared by construction in a timely manner to control fugitive dust.

Any effects to air quality would be temporary and localized. Sensitive receptors, such as schools, residences, or hospitals would not be exposed to substantial pollutant concentrations. Avoidance, minimization, and mitigation measures would reduce impacts to less than significant.

3.2.6 Climate Change

Existing Conditions

Warming of the climate system is now considered to be unequivocal (IPCC, 2007). Global average surface temperature has increased approximately 1.33° F over the last 100 years, with the most severe warming occurring in the most recent decades. In the 12 years between 1995 and 2006, 11 years ranked among the warmest years in the instrumental record of global average surface temperature (going back to 1850). Continued warming is projected to increase global average temperature between 2 and 11 °F over the next 100 years (IPCC, 2007).

The causes of this warming have been identified as both natural processes and as the result of human actions. Increases in greenhouse gas (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 reflected back into space. The six principal GHGs of concern are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, and perfluorocarbons.

Requirements. CEQA requires that lead agencies consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. CEQA requires that the cumulative impacts of GHG, even impacts that are relatively small on a global basis, need to be considered.

On February 18, 2010, CEQ released draft guidance regarding the consideration of GHGs in NEPA documents for Federal actions. The draft guidelines include a presumptive threshold of 25,000 metric tons of carbon dioxide equivalent (CO2e) emissions from a proposed action to trigger a quantitative analysis (CEQ, 2010).

Some statewide standards have been established that provide information about the order of magnitude of emissions that might be considered significant. Pursuant to AB 32, CARB mandates that only "large" facilities (stationary, continuous sources of GHG emissions) that generate greater than 25,000 metric tons of CO_2e per year report their GHG emissions. In addition, on October 24, 2008, CARB released a preliminary draft staff proposal that recommends 7,000 metric tons of CO_2e per year be used as the baseline threshold for impacts (CARB, 2008b).

Potential Environmental Effects

Basis of Significance. It is unlikely that any single project by itself could have a significant impact on climate change. 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, 2007). The Department of Water Resources (DWR) has not established a quantitative significance threshold for GHG emissions; instead, each project is evaluated on a case by case basis using the most up to date calculation and analysis methods. The cumulative impact analysis of GHG emissions from this project are addressed in Section 5.2, Cumulative Impacts.

The proposed project could result in a significant impact if it would generate GHG emissions: (1) either directly or indirectly, that may have a significant cumulative impact on the environment; or (2) that would conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases, including the State goal of reducing greenhouse gas emissions in California to 1990 levels by 2020, as set forth by the timetable established in AB 32, California Global Warming Solutions Act of 2006. In addition, CARB has released a preliminary draft staff proposal that recommends 7,000 metric tons of CO_2e per year be used as the baseline threshold for impacts (CARB, 2008b).

Draft guidance released by CEQ regarding the consideration of GHG's in NEPA documents for Federal actions include a presumptive threshold of 25,000 metric tons of CO2e emissions from a proposed action to trigger a quantitative analysis (CEQ, 2010).

No Action. Under the no action alternative, the project would not be constructed, and there would be no construction-related effects on climate change. Locally generated emissions, including levee operations and maintenance, would continue. However, the possible event of levee failure may result in large amounts of GHG emissions during flood-fighting activities, as well as large amounts of emissions resulting from clean-up activities and the repair and/or replacement of flood damaged housing, commercial and industrial properties, and public infrastructure.

Proposed Levee Improvements. The proposed construction would use large, diesel-fueled construction vehicles during all phases of the project at all four sites. The partial degrade of the levee crown would result in emissions from bulldozers and graders, as well as emissions from the haul trucks used to dispose of material. The construction of the jet grout cutoff wall would result in emissions from the jet grout equipment and haul trucks, as well as the diesel-powered mixers required for the mixing of the cement and bentonite. Diesel-powered cement mixers, pavers, and haul trucks for borrow materials would be used for the re-construction of the levee crown.

In addition to the construction vehicles, mixers, and haul trucks involved in the actual construction of the project, there would also be GHG emissions from the workforce vehicles. Workers would commute from their homes to the construction site and park in the staging area. Workers are assumed to commute no farther than 20 miles from the construction site based on the availability of housing and the urban setting of the project. During construction, there may be times when large construction vehicles on the roads slow regular traffic, increasing emissions from vehicles that use the roads on a regular basis.

The most recent version of the SMAQMD Road Construction Emissions Model (v. 7.1.2) now generates an output for CO_2. The SMAQMD Road Construction Emissions Model 7.1.2 was based on knowledgeable individuals from SMAQMD, California Department of Transportation (CalTrans), CARB, and the EPA. The emissions model was updated by Tetra Tech in 2013 based on the original model prepared by Jones & Stokes (now part of ICF) and Rimpo and Associates, Inc., and used the 26th edition of Walker's Building Estimator's Reference Book (1999).

As shown in Table 4 (Section 3.2.5), estimated CO_2 emissions for all four sites would total approximately 29,555.10 lbs/day or approximately 902.0 tons of CO_2. Although CO_2 emissions can now be calculated, there is no Federal, State, or local threshold to meet, which makes it difficult to fully analyze.

The CEQA Climate Change Committee has created a guidance document for GHG emissions calculations. This document requires data entry related to construction equipment, workforce transportation, materials transportation, and maintenance and operational emissions. According to this calculator, the combined total emissions of GHGs for all sites would be

approximately 1,661.35 tons of CO_2e. Details and results of the calculations are provided in Appendix B. While the data entered on this form is based on assumptions and estimates, the amounts of CO_2e can be used to determine significance according to CEQA.

The construction proposed for Sites L7, L10, R3A and R7 is relatively small, as all four sites combined total less than ½ mile of construction. Emissions from construction vehicles would occur during a short time period. Using the emissions model and calculations previously discussed, CO_2e emissions are estimated to be less than 2,000 tons for the entirety of the project. The CEQA Climate Change Committee GHG emissions calculator estimates total project emissions to be approximately 1,661.35 tons of CO_2e. The proposed project would not exceed thresholds established by CARB or CEQ, and therefore would not have a significant impact on climate change.

The long-term operations and maintenance of the project sites would remain the same with or without the project. Current operations and maintenance involves the periodic mowing and spraying of the levee slopes for fire danger control. While the project does not improve the efficiency of operations and maintenance, the project would also not increase emissions due to operations and maintenance. Long-term emissions would be the same with or without the project; maintenance emissions would be the same, and the cutoff wall itself has no net long-term emissions. Based on the previous discussion, this project does not conflict with any Statewide or local goals with regard to reduction of GHG; therefore, there would be no significant effects on climate change.

Avoidance, Minimization, and Mitigation Measures

BMPs and the standard construction avoidance, minimization, and mitigation measures as recommended in the SMAQMD's "Guidance for Construction GHG Emissions Reductions" would be implemented to further reduce GHG emissions. Additional measures are included in Appendix B and Section 3.2.5 (Air Quality).

- Minimize the idling time of construction equipment to no more than 3 minutes or shut equipment off when not in use;
- Maintain all construction equipment in proper working condition;
- Encourage carpools, shuttle vans, and/or alternative modes of transportation for construction worker commutes;
- Use locally sourced or recycled materials for construction materials as much as practicable; and
- Develop a plan to efficiently use water for adequate dust control.

3.2.7 Water Resources and Quality

Existing Conditions

The American River is the major waterway in the project area. The river flow is influenced by upstream dams, local weather, spring snow melt, flood bypasses, and upstream tributaries. In 2011, the mean water level for the American River near the Fair Oaks Boulevard/J Street Bridge in Sacramento was 19.19 feet. The maximum water level of the American River was 30.67 feet and the minimum water level was 16.90 feet (DWR, 2012).

The water quality of the American River is affected by storm water runoff, water diversion, and surrounding land uses. The water quality tends to degrade as the river leaves the Sierra Nevada range and flow through the Central Valley into the Sacramento-San Joaquin Delta.

The local rivers, lakes, and rainfall recharge the ground water table in the project area. Groundwater provides about 31 percent of the water supply for urban and agricultural uses in the Sacramento River Hydraulic Region. The reliability of the groundwater supply varies greatly. Average ground water depth can be affected by seasonal changes in water volume in the valley's rivers and lakes, local rainfall, and urban demand on the ground water (DWR, 2003).

Potential Environmental Effects

Basis of Significance. A project would significantly affect water resources if it would: (1) result in the loss of a surface or groundwater source; or (2) interfere with existing beneficial uses or water rights.

No Action. Under this alternative, water resources or quality would not be affected by construction in the project area. The surface and groundwater conditions would continue to be affected by agricultural and urban contaminants through runoff. Extreme flooding events could wash siltation and contaminants into the water system, and if emergency levee work became necessary to prevent levee failure, measures required for the protection of water quality might not be used.

Proposed Levee Improvements. The proposed construction project would not result in the loss of a surface or groundwater source, and no water rights would be affected. No in-water construction is proposed that would directly affect water quality or aquatic life. Jet grout construction involves high pressures of grout inserted into the levee, resulting in grout spoil or cuttings that would be removed from the site and transported to a drying area in the staging area. The drying pits within the staging area would be lined with landfill-grade liner to prevent seepage into the soil.

The possibility exists that the proposed staging area for Site R7 (Plate 5) could also be used during the construction of Site L7. If the Site R7 staging area is used for the batch plant and drying bed area, it would be necessary to pipe jet grout, water, air, and waste material across the Fair Oaks Boulevard/J Street Bridge. If the proposed multiple use staging area is used, the pipes would be placed along the pedestrian walkway on the south side of the bridge.

Although design and construction considerations have significantly minimized the risk, spilled or improperly contained jet grout material could result in soil mixed with grout entering the American River and there is a slight potential for fugitive dust and construction runoff to enter the American River. In addition, inadvertent spills of oil or fuels from construction equipment could be a source of contamination into the water column at work or staging areas. The proposed avoidance, minimization, and mitigation measures described below would further minimize the risk of impacts to water quality during construction.

Avoidance, Minimization, and Mitigation Measures

To prevent sediments from escaping the site and entering the American River, sediment control measures would be installed around the construction sites. If the proposed multiple use staging area and associated jet grout material conduit across the American River is used, the pipelines would be placed in two steel conduits that would contain any potential leaks. The conduits would be placed along the recreational path on the south side of the Fair Oaks Boulevard/J Street Bridge. The jet grout system would be monitored for fluctuations in pressure (signifying a leak). Additionally, the jet grout system is equipped with an automatic shut-off system that would activate with large fluctuations in pressure. Any material that escapes from the pipeline into the steel conduits would flow into the staging areas where it would be contained and cleaned up. If any leaks occur from the pipes into the conduits, construction would stop until the pipes are repaired or replaced. Additional containment systems are under discussion.

The contractor would be required to obtain a National Pollution Discharge Elimination System permit from the Regional Water Quality Control Board (RWQCB), Central Valley Region. As part of the permit, the contractor would be required to prepare a SWPPP and a SPCP prior to initiating construction activities, identifying BMPs to be used to avoid or minimize any adverse effects during construction to surface waters.

The following BMPs would be incorporated into the project:

- Implement appropriate measures, such as straw wattles and silt fencing, to prevent debris, soil, rock, or other material from entering the water.
- Use a water truck or other appropriate measures to control dust on haul roads, construction areas, and stockpiles.
- Properly dispose of oil or other liquids.
- Fuel and maintain vehicles in a specified area that is designed to capture spills. This area cannot be near any ditch, stream, or other body of water or feature that may convey water to a nearby body of water.
- Fuels and hazardous materials would not be stored on site.
- Inspect and maintain vehicles and equipment to prevent the dripping of oil or other fluids.
- Schedule construction to avoid the rainy season as much as possible. Ground disturbance activities are expected to begin in the summer of 2014. If rains are forecasted during construction, additional erosion and sedimentation control measures would be implemented.

- Maintain sediment and erosion control measures during construction. Inspect the control measures before, during, and after a rain event.
- Train construction workers in storm water pollution prevention practices.
- Revegetate disturbed areas in a timely manner to control erosion.

Since no significant adverse affects to groundwater or surface water resources are anticipated, no additional mitigation measures are required. Any effects to water quality would be temporary, and BMPs and proposed avoidance, minimization, and mitigation measures would further reduce impacts.

3.2.8 Traffic and Circulation

Existing Conditions

Streets in the project areas consist primarily of minor residential streets maintained by the City of Sacramento and Sacramento County. City sidewalks are located on each side of the residential streets, which are used by local residents. The City and County of Sacramento both post traffic counts on their web sites for roadways in the project area. Traffic volume peaks during the morning and evening rush hour, and becomes a steady but lower volume during the day (Sacramento County, 2007).

Site L7. Site L7 is intersected by the Fair Oaks Boulevard/J Street Bridge, which is a four-lane urban roadway that crosses the American River and connects downtown Sacramento to the Arden-Arcade area. Additional streets in the area include Camellia Avenue, Carlson Drive, and State University Drive. The traffic count for H Street and Camellia Avenue averages 44,660 vehicles per day. The traffic count for H Street and Carlson Drive averages 17,500 vehicles per day. The traffic count for Fair Oaks Boulevard at Cadillac Drive averages 35,000 vehicles per day (City of Sacramento, 2007). The nearest major roads to the project area are Howe Avenue, Fair Oaks Boulevard, and Elvas Avenue. Howe Avenue is outside the project area, but would be used to access the project area during construction. The traffic count for Howe Avenue north of Fair Oaks Boulevard averages approximately 49,500 vehicles per day (Sacramento County, 2011).

Site L10. Site L10 is intersected by the Howe Avenue Bridge, which is a four-lane urban roadway that crosses the American River and connects local residential and commercial areas to state highways and other parts of the metropolitan area. Additional streets in the area include La Riviera Drive, College Town Drive, and University Avenue. La Riviera Drive would be used to access the project area during construction. The traffic count for Howe Avenue at La Riviera Drive is approximately 14,000 vehicles per day (City of Sacramento, 2007).

Site R3A. Site R3A is intersected by the Business 80/Capitol City Freeway Bridge. The Business 80/Capitol City Freeway Bridge is a major urban freeway that connects downtown Sacramento to north Sacramento and the Arden-Arcade area. Additional streets in the area include Tribute Road, Hurley Way, and Exposition Boulevard. Tribute Road would be used to access the project area during construction. The traffic count for Exposition Boulevard at

Tribute Road averages 12,000 vehicles westbound and 5,000 vehicles eastbound per day (City of Sacramento, 2007).

Site R7. Site R7 is intersected by the Fair Oaks Boulevard/J Street Bridge. Additional streets in the area include University Avenue and Cadillac Drive. The nearest major road to the project area is Howe Avenue. The traffic count for Howe Avenue north of Fair Oaks Boulevard averages approximately 49,500 vehicles per day (Sacramento County, 2011). The traffic count for Fair Oaks Boulevard at Cadillac Drive averages approximately 16,300 vehicles per day (City of Sacramento, 2007).

Potential Environmental Effects

Basis of Significance. The project would have significant effects on traffic if it would: (1) cause an increase in traffic volume that is substantial in relation to the existing load and capacity of a roadway; (2) cause an increase in safety hazards on an area roadway; or (3) cause substantial deterioration of the physical condition of the nearby roadways.

No Action Alternative. The no action alternative would not affect the traffic and circulation in the project area because no construction activities would be occurring. The existing roadways, recreational paths, types of traffic, traffic volume, and circulation patterns would not change; however, emergency actions taken to prevent flooding in the possible event of levee failure may result in changes to traffic flow.

Proposed Levee Improvements. Construction at Sites L7, L10, R3A and R7 would temporarily affect local residential roads and major urban connector roads that would be used as haul routes during construction. The type and duration of construction vehicles on the roadways would vary depending on the time of day and the type of materials being hauled. Haul trucks would cause a temporary increase in traffic volume and may reduce traffic speeds on local residential roads. Increases in traffic volume on these roadways would return to previous levels at the completion of construction. During construction, haul trucks would travel between the construction site and the commercial disposal site. The directional flow of construction traffic has not been finalized, but for the purposes of this discussion, the following probable scenarios would be used to describe the haul routes and analyze traffic impacts:

Site L7. Construction vehicles would use US Highway 50, turning north onto Howe Avenue and west onto Fair Oaks Boulevard, crossing the American River using the Fair Oaks Boulevard/J Street Bridge. Construction vehicles would then turn right onto Camellia Avenue to enter the construction site from the Sacramento Central Seventh-Day Adventist Church parking lot. After on-loading or off-loading the material, construction vehicles would exit onto Camellia Avenue and turn right onto H Street, turning left at Carlson Drive and left again onto J Street. From J Street, construction vehicles would travel the Fair Oaks/ J Street Bridge to Howe Avenue and back to US Highway 50.

Site L10. Construction vehicles would use US Highway 50, turning north onto Howe Avenue and exiting toward the American River Access ramp at La Riviera Drive. Construction vehicles would then either enter the staging area under the Howe Avenue Bridge or access the

levee crown using the American River Access ramp. After on-loading or off-loading the material, the construction vehicles would exit the project area to travel west on La Riviera Drive, continuing south to the intersection with College Town Drive. Construction vehicles would then turn left onto College Town Drive to Howe Avenue and continue onto US Highway 50. Alternatively, construction vehicles could turn right onto College Town Drive and south on Hornet Drive to access US Highway 50.

Site R3A. Construction vehicles would use either Business 80 or Highway 160 to exit on Exposition Boulevard. From Exposition Boulevard, construction vehicles would turn south onto Tribute Road and access the site using regional roadways between the project area and the staging area. After on-loading or off-loading the material, the construction vehicles would exit the project area using Tribute Road back toward Exposition Boulevard and Business 80.

Site R7. Construction vehicles would use US Highway 50, turning north onto Howe Avenue and west onto Fair Oaks Boulevard, crossing the American River using the Fair Oaks Boulevard/J Street Bridge. Construction vehicles would enter the American River Parkway using the Spanos Court access road and drive on the levee crown maintenance road south to the project site. After on-loading or off-loading the material, the haul trucks would exit the project area using the levee access road to the south of Fair Oaks Boulevard (Plate 5). Trucks would only exit right onto this access road, travelling northeast on Fair Oaks Boulevard to turn right on Howe Avenue and returning to US Highway 50.

Construction at Sites L7, L10, R3A, and R7 would impact traffic conditions on Fair Oaks Boulevard, Camellia Avenue, J Street, University Avenue, American River Drive, La Riviera Drive, College Town Drive, and Howe Avenue due to the presence of construction vehicles on small residential streets, as well as the addition of construction vehicles onto congested roadways. During the height of construction, there may be as many as 20 haul truck round trips per day at each site. The addition of 20 haul trucks on small residential streets would not be a substantial increase in traffic and would therefore be less than significant.

If Sites L7, L10, and R7 were constructed concurrently, Howe Avenue could experience as many as 160 vehicles per day during the height of construction, as it is a common thoroughfare for the haul routes proposed for these sites. However, based on the traffic counts for Howe Avenue north of Fair Oaks, this would be less than a 2 percent increase in vehicles and would not be significant. Additionally, this estimation is based on a worst-case scenario. Due to restricted access at these sites, construction vehicles are not expected to be present in these large numbers. Traffic patterns would return to normal once construction is completed.

Avoidance, Minimization, and Mitigation Measures

The contractor would be required to develop a Traffic Control Plan, which would be reviewed and approved by CSUS, the City of Sacramento, Sacramento County, Caltrans, and USACE prior to construction. This plan would include the following measures:

- Construction vehicles would not be permitted to block any roadways or private driveways;

- Access would be provided for emergency vehicles at all times;
- Haul routes would be selected to avoid schools, parks, and high pedestrian use areas when possible. Crossing guards provided by the contractor would be used when truck trips coincide with schools hours and when haul routes cross student travel path;
- Construction vehicles would be required to obey all speed limits, traffic laws, and transportation regulations during construction. If speed limits are not posted, construction vehicles would not exceed 15 miles per hour on unpaved levee roads;
- Signs and flagmen would be used, as needed, to alert motorists, bicyclists, and pedestrians to avoid conflict with construction vehicles or equipment;
- Flagmen would be used at each roadway that crosses the levee to safely circulate traffic through the construction site;
- Construction vehicles should use separate entrances and exits to the construction site, when possible;
- Construction employee parking would be restricted to the designated staging areas;
- No road closures are anticipated; however, in the event that road closures are necessary, local agencies and affected organizations would be notified prior to construction; and
- Any levee roads, construction sites, and public access areas that are closed for construction use would be clearly fenced and delineated with appropriate signage.

The 30-day public review has been conducted, and copies of this draft EA/IS were distributed to local libraries and agencies, as well as upon request to interested parties and individuals. Additional public outreach (including public meetings) to inform the local residents, businesses, and media of the type of construction, the duration of construction, and expected impacts would be conducted at least two weeks prior to mobilization for construction. Hours of construction would be clearly marked with signs on or adjacent to the project sites prior to construction. The proposed avoidance, minimization, and mitigation measures would reduce the effects on traffic and circulation to less than significant.

3.2.9 Public Utilities and Services

Existing Conditions

Public services in or near the project area include street cleaning, trash pickup, potable water supply, electricity, natural gas supply, storm water discharge, and sanitary sewage. These public services are implemented by local utility districts including the City of Sacramento, Sacramento County, California Department of Transportation, California State University of Sacramento, Cable Vision, Comcast, AT&T, Sacramento Metropolitan Utility District, Pacific Gas & Electric, and the Sacramento Regional County Sanitation District.

Site L7. More than 14 utilities cross the work area at Site L7. Two power poles located just upstream of the Fair Oaks Boulevard/J Street Bridge support overhead power, cable, and

telephone lines. Additionally, fiber optic lines, water lines, and power lines are located along the bridge in existing conduits.

Site L10. More than 16 utilities cross the L10 project area. Most of the utilities in this area are electrical lines associated with the power towers located on the waterside toe of the site. Additionally, storm drain pipes associated with Sump 91 are located under the levee.

Site R3A. More than 22 utilities cross the R3A project site, including but not limited to sewer mains, storm drain pipes, electrical lines, and telephone lines.

Site R7. More than 12 utilities cross the R7 project area, including fiber optic lines, power cables, sewer mains, and storm drain pipes. Many of the utilities cross the Fair Oaks Boulevard/J Street Bridge to cross the L7 project site area.

Potential Environmental Effects

Basis of Significance. A project would significantly affect public utilities and services if it would: (1) disrupt or significantly diminish the quality of the public utilities and services for an extended period of time; or (2) damage public utility and service facilities, pipelines, conduits, or power lines.

No Action. Under the no action alternative, there would be no effects on public utilities and services in the project area. There would be no change in type, quality, or availability of services in the project area; however, utilities and public services could be interrupted in the event of a major flood.

Proposed Levee Improvements. All utilities located adjacent to, or passing through the project area, would be protected in place. Any utilities that require relocation would not require a disruption of service. Bridge lighting would remain operational throughout the construction period for safety and security. The project would not affect public utilities and services, and therefore would have a less than significant effect.

Avoidance, Minimization, and Mitigation Measures

Prior to initiating ground disturbing activities, the contractor would coordinate with Underground Service Alert to insure that all underground utilities are identified and marked. All utilities would be protected in place. No disruption of service is expected. If for any reason utilities would require a disruption in service, residents and businesses within the potentially affected area would be given notice of the anticipated time and duration of the disruption of service before the start of construction.

3.2.10 Noise and Vibration

Existing Conditions

Noise is defined as unwanted sound that evokes a subjective reaction to the physical characteristics of a physical phenomenon. Ambient noise in the project area is generated by the traffic on the adjacent surface streets. Other noise may be generated primarily in the summer by motorized recreation on the American River. Based on experience with similar settings, it is assumed that existing noise levels in the project area are in the range of 60 to 70 decibels (dB) day-night sound level (Ldn). Noise-sensitive receptors in the project area include residents, recreational users, and wildlife.

Sites L7, L10, and R7 are in close proximity to Sacramento State University. These sites are also in close proximity to single family residential homes, apartment complexes, and businesses. Site R3A is adjacent to the Cal Expo Fairgrounds, as well as several businesses within the nearby area. Currently, the main source of noise includes motor vehicles, human activity, and natural sounds.

The City of Sacramento has established policies and regulations concerning the generation and control of noise that could adversely affect their citizens and noise-sensitive land uses. The Noise Element of the City's General Plan contains planning guidelines relating to noise. The Sacramento Municipal Code, Title 8 (Health and Safety), establishes the Noise Ordinance for the City (City of Sacramento, 2009).

Potential Environmental Effects

Basis of Significance. Adverse effects on noise and vibration are considered significant if an alternative would result in any of the following: (1) exposure of persons or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; (2) substantial (15 dB or greater) long-term increase in ambient noise levels in the project vicinity above levels existing without the project; or, (3) vibration exceeding 0.2 inch per second within 75 feet of existing buildings.

No Action Alternative. Under the no action alternative, there would be no effects on noise or vibration due to construction. Sources of noise and noise levels would continue to be determined by local activities, development, and natural sounds. However, noise levels would temporarily increase in the event of an emergency flood-fighting situation.

Proposed Levee Improvements. Construction activity noise levels at and near the project areas would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Construction-related material haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. In addition, certain types of construction equipment generate impulsive noises (such as pile driving or blasting), which can be particularly annoying. Pile driving or blasting, however, is not proposed for this project. Table 5 shows typical noise levels during different construction stages. Table 6 shows typical noise levels produced by various types of construction equipment.

Table 5. Typical Construction Noise Levels

Construction Phase	Noise Level (dBA, Leq)[a]
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

[a] Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.
Source: EPA, 1971.

Table 6. Typical Noise Levels from Construction Equipment

Construction Equipment	Noise Level (dBA, Leq at 50 feet)
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Jack Hammer	88
Dozer	87
Paver	89
Generator	76
Pile Driver	101
Backhoe	85

Source: Cunniff, 1977.

Construction noise would fluctuate depending on construction phase, equipment type, and duration of use, distance between noise source and receptor, and presence or absence of barriers between noise source and receptor. Noise from construction activity generally attenuates at 6 to 7.5 dBA per doubling of distance. Assuming an attenuation rate of 6 dBA per doubling of distance, construction equipment noise in the range of 80 to 90 dBA at 50 feet would generate noise levels of 74 to 84 dBA at 100 feet from the source.

Businesses and residences in this project area are located approximately 50 feet from the construction areas and haul routes. Residents and businesses nearest to the project area would experience noise levels at about 89 dBA during asphalt surface removal, the loudest of construction activities that would occur. Using the same attenuation rate of 6 dBA per doubling of distance, the noise levels would not drop substantially based on the distance from the source. Most properties have trees or shrubbery planted at the property line which adjoins the landside boundary of the project area. This vegetation would provide for some attenuation of the noise. Other residences and businesses located around the project area are further away and thus would receive lower levels of noise.

Sensitive receptors that could be affected by this increase include residents, wildlife, and recreationists. Sensitive receptors would experience noise from construction vehicle motors and construction activities. Although these impacts could be considered significant, noise increases would be short term and intermittent. In addition, avoidance, minimization, and mitigation measures would reduce impacts to less than significant.

Construction activities associated with the project may result in some minor amount of ground vibration. Vibration from construction activity is typically below the threshold perception when the activity is more than about 50 feet from the receptor. The closest residences to the construction activities would be just beyond this 50-foot limit; however, most residences would be 70 feet away or greater. Due to the transitional nature of the construction activities, exposure at any one location would be intermittent. The most common vibration impacts at each site would result from truck traffic. There would be no vibration exceeding 0.2 inch per second within 75 feet of residences for Site L7, L10, R3A, or R7. Additionally, vibration from these activities would be short term and would end when construction is completed.

Construction would be short-term in nature and would not involve high-effect activities like pile-driving; however, impacts could be considered significant unless mitigated.

Avoidance, Minimization, and Measures

The following measures would be implemented to reduce the effects of the noise to less than significant:

- Construction times would be limited in accordance with the City of Sacramento Noise Ordinance exemption for construction (City of Sacramento, 2009). Construction at Site L7 would occur between the hours of 7:00 a.m. to 6:00 p.m., Monday through Saturday, and 9:00 a.m. through 6:00 p.m. on Sunday. Construction at Site L10 would occur between the hours of 7:00 a.m. through 4:00 p.m., Monday through Saturday, and 9:00 a.m. through 4:00 p.m. on Sunday. Construction at Sites R3A and R7 would occur between the hours of 7:00 a.m. to 6:00 p.m., Monday through Saturday, and 9:00 a.m. to 6:00 p.m. on Sunday.
- Construction equipment noise would be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools.
- All equipment, haul trucks, and worker vehicles would be turned off when not in use for more than 30 minutes.
- Residences and businesses would be notified about the type and schedule of construction at least two weeks prior to mobilization.
- The contractor would measure surface velocity waves caused by equipment, monitoring vibration up to a threshold value established and approved in writing by USACE. There would be no vibration exceeding 0.2 inch per second.

Public meetings would be scheduled with affected residents to ensure they are informed of the project schedule and its potential effects. Due to the temporary nature of the construction and the proposed avoidance, minimization, and mitigation measures, impacts would be less than significant.

3.2.11 Aesthetics/Visual Resources

Existing Conditions

The lower American River is a Federally and State-designated component of the National Wild and Scenic Rivers System. Section 7 of the Wild and Scenic Rivers Act prohibits Federal agencies from "assist[ing] by loan grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established." The lower American River was included in the Federal and State Wild and Scenic Rivers System because of some or all of its fisheries, wildlife, scenic and recreational values, but primarily its recreation and anadromous fishery values.

The American River Parkway Plan includes several specific policies to regulate flood control and other activities within the Parkway. Policies are included in the plan to limit activities to those that result in minimal damage to riparian vegetation and wildlife, and include a revegetation program to screen projects from public view and preserve a naturalistic appearance.

It is National policy that aesthetic resources be protected along with other natural resources. Aesthetic resources are those natural resources, landforms, vegetation, and manmade structures in the environment that generate one or more sensory reactions and evaluations by the observer, particularly in regard to pleasurable response. These sensory reactions are traditionally categorized as pertaining to sight, sound, and smell. Aesthetic quality is the significance given to aesthetic resources based on the intrinsic physical attributes of those specific features and recognized by public, technical, and institutional sources. The identification of scenic resources in the landscape requires a process that identifies the relevant visual features and that is derived from established Federal procedures. Visual quality is influenced by many landscape features including geologic, hydrologic, botanical, wildlife, recreational, and urban characteristics.

The area along this stretch of the American River has a moderate aesthetic value; however, visual sensitivity is high because of the large number of sensitive viewers. Sites L7, L10, R3A and R7 are located within the American River Parkway alongside the American River. This area provides valuable riparian habitat as well as recreational opportunities. Other areas near the project sites include residential development, businesses, the project levee, American River access points and parking lots, bridges, Cal Expo, and the Jedediah Smith Memorial Trail.

Potential Environmental Effects

Basis of Significance. An alternative would be considered to have a significant effect on aesthetics if changes in landform, vegetation, or structural features create substantially increased levels of visual contrast as compared to surrounding conditions.

No Action Alternative. Under the no action alternative, there would be no effect on aesthetics due to construction activities. The views and aesthetic quality of all sites would remain the same. However, a major flood event may alter the areas surrounding the project area through erosion and debris. In addition, flood fighting activities would likely create a long term visual effect on aesthetics.

Proposed Levee Improvements. Construction of the levee repairs at all sites would temporarily affect the aesthetics in the project area. Short-term effects would include the temporary removal of the levee crown and the construction itself, temporary alterations to the proposed staging areas and the presence and activities of construction equipment and workers in the project areas. There would also be temporary changes in vegetation structure as the construction would involve the removal and re-establishment of vegetation. These changes could be considered significant unless mitigated.

Avoidance, Minimization, and Mitigation Measures

During construction, impacts to the aesthetic value of the American River Parkway would be reduced as much as feasible. Construction equipment and materials would be confined to the project areas and staging areas. Trees and shrubs would be protected in place, when feasible, to allow the natural shielding of the construction activities to users within the American River Parkway.

After completion of construction, the site would be restored to preconstruction conditions. The reconstructed levee would remain consistent with the preconstruction visual resources of the project area and therefore would not significantly change the existing visual characteristics of the area. All areas affected by the project would be revegetated and restored to remain consistent with preconstruction conditions. Any effects to visual resources would be temporary, and the BMPs and the avoidance, minimization, and mitigation measures listed in Vegetation and Wildlife (Section 3.2.2), Air Quality (Section 3.2.5), and Water Resources and Quality (Section 3.2.7) would reduce impacts to less than significant.

3.2.12 Cultural Resources

Existing Conditions

Regulatory Setting. Section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 U.S.C. § 470f) requires Federal agencies to take into account the effects of their actions on the properties that may be eligible for listing or are listed in the National Register of Historic Places (NRHP). To determine whether an undertaking could affect National Register-eligible properties, cultural resources (including archeological resources, historic resources, and traditional cultural properties) must be inventoried and evaluated for listing in the National Register prior to implementation of the undertaking.

CEQA also requires that for public or private projects financed or approved by public agencies, the effects of the projects on historic resources and unique archeological resources must be assessed. Historic resources are defined as buildings, sites, structures, objects, or districts that have been determined to be eligible for listing in the California Register of Historic Resources. Properties listed in the National Register are automatically eligible for listing in the California Register.

Terminology. The term "cultural resources" is used to describe several different types of properties: prehistoric and historic archeological sites; architectural properties, such as buildings,

bridges, and infrastructure; and resources of importance to Native Americans (traditional cultural properties). Artifacts include any objects manufactured or altered by humans.

Prehistoric archeological sites date to the time before recorded history. In California, these are sites associated with Native American use before the arrival of Europeans. Archeological sites dating to the time when these initial Native American-European contacts were occurring are referred to as protohistoric. Historic archeological sites can be associated with Native Americans, Europeans, or any other ethnic group. In the study area, these sites include the remains of historic structures, levees, and buildings.

Structures and buildings are considered historic when they are more than 50 years old or when they are exceptionally significant. Exceptional significance can be gained if the properties are integral parts of districts that meet the criteria for eligibility for listing in the National Register or if they meet special criteria considerations.

A traditional cultural property is defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history; and (b) are important in maintaining the continuing cultural identity of the community (National Park Service, 1998). Although normally associated with Native Americans, traditional cultural properties can include those that have significance derived from the role the property plays in any cultural groups' or communities' historically rooted beliefs, customs, and practices.

According to 36 CFR 800.16(l)(1), an historic property is defined as "…any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria."

Records and Literature Search. The history of the construction of the American River right bank levee (CA-SAC-481H) and the American River left bank levee (CA-SAC-482H) has been well documented by Blosser and Walters (2002), JRP Historical Consulting Services (1998), and the U.S. Army Corps of Engineers (2006). These documents and other previous studies, surveys, and reports from the area were reviewed. Records and literature searches conducted within the broader WRDA 96 Remaining Sites Project indicated that three surveys have included all or portions of the area of potential effects for Sites L7, L10, R3A, and R7. In 1995, Dames & Moore, Inc. conducted a survey of the Lower American River for the American River Watershed Investigation project (Dames & Moore, 1995a; Dames & Moore, 1995b). In 2001, JRP Consulting Services conducted a transmission line survey for the Western Area Power Administration Transmission Line Corridor (Blosser and Walters, 2001), and Peak and Associates surveyed a proposed bike trail (Peak, 1978). Beginning mid-September 2007 until April 30th, 2008, Statistical Research, Inc. was contracted to monitor the geotechnical boring of 26 locations (Statistical Research, Inc., 2008). Geotechnical borings conducted at all four sites considered here were monitored during this effort. No cultural material was observed.

The sections of the right bank levee (CA-SAC-481H) that were recorded in 1994, and again in 2001, were recommended as ineligible by the recording archaeologists, JRP Historical Group, Inc. They cited the lack of integrity of the levees due to regular alteration and maintenance during the levees' period of significance from 1955 to 1978. The left bank levee (CA-SAC-482H) was found ineligible for listing in the NRHP because, in addition to being less than 50 years old, it was found not to possess exceptional significance and it was also found to possess a low degree of integrity to its period of construction (JRP Historical Consulting Services, 1998).

Field Survey. Archaeological field surveys were conducted by qualified USACE archaeologists. USACE has re-evaluated both levees and has determined that while ongoing maintenance and improvement of the levees has likely altered the aspects of material and workmanship, the features essential to the integrity of the levees remains unchanged. As contributing elements to a potential historic flood control district, comprised of the levees and Folsom Dam, both the right bank levee (CA-SAC-481H) and the left bank levee (CA-SAC-482H) are treated as though they were eligible for inclusion in the NRHP. USACE is engaged in ongoing consultation with the California State Historic Preservation Office (SHPO) and potentially interested Native American tribes. Aside from the levees, no cultural resources were encountered within the area of potential effects.

Potential Environmental Effects

Basis of Significance. An alternative would be considered to have a significant adverse effect on cultural resources if it diminishes the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Types of effects include physical destruction, damage, isolation, or alteration of the character of the setting; introduction of elements that are out of character; neglect; and transfer, lease, or sale.

No Action Alternative. The no action alternative assumes that no levee improvements would be constructed by USACE. The cultural resources are expected to remain as described in the existing conditions. However, a major flooding event could alter existing conditions by burying, destroying, or revealing cultural resources.

Proposed Levee Improvements. The project, as planned, would not have an adverse effect on properties that are listed in, or are eligible for listing in the NRHP. Although the levees have undergone a number of alterations/modifications in the 5 decades since the time of their construction (including heightening and widening as part of the bank protection measures to prevent ongoing stream bank erosion), the character-defining features that are directly related to their significance, as well as their integrity and overall appearance as earthen levees, have remained unchanged.

As far as current appearance is concerned, both CA-SAC-481H and CA-SAC-482H are large, earthen levees, with a 1:3 slope on the waterside and a 1:2 slope on the land side. Both levees have a generally trapezoidal shape and a 20 foot crown and are approximately 25 feet tall (Blosser and Walters, 2002 and JRP Historical Consulting Services, 1998).

Upon completion of the proposed work, the levee prism and function would remain intact. For this reason, the project would have no adverse effect to historic properties.

Avoidance, Minimization, and Mitigation Measures

A letter was sent to SHPO on September 23, 2013 requesting their concurrence with a finding of no adverse effects to historic properties in accordance with 36 CFR 800.5(d)(1). The SHPO concurred with this finding in a letter dated October 15, 2013 .

USACE archaeologists make every effort to identify cultural resources that occur in the area of potential effects. However, the possibility still exists that potentially significant unidentified cultural remains could be encountered during project construction. If buried or otherwise obscured cultural resources are encountered during construction, activities in the area of the find would be halted, and a USACE archeologist would be consulted immediately to evaluate the find.

Should any potentially significant cultural resources be discovered, compliance with 36 CFR 800.13(b), "Discoveries without prior planning," would be implemented. Data recovery or other mitigation measures could be necessary to mitigate adverse effects to significant properties and comply with the National Historic Preservation Act of 1966. These mitigation measures would reduce effects to less than significant. A letter would be sent to SHPO requesting their concurrence with a finding of no adverse effect in accordance with 36 CFR 800.4(c)(2).

3.2.13 Hazardous, Toxic, and Radioactive Waste

Existing Conditions

Previous surveys in this area and other areas of the American River Parkway have found no hazardous, toxic, or radioactive waste (HTRW). A Phase 1 Environmental Site Assessment, including a site visit, was conducted between March and April 2013 to identify and evaluate potential hazardous and toxic waste issues associated with all sites in and near the project area. The study area is defined as the area within ¼ mile from the project site. If any evidence of hazardous and toxic waste is identified, then more detailed studies including field sampling and analysis would likely be conducted to determine the nature and extent of any hazardous and toxic waste. The Phase 1 Environmental Site Assessment was completed in May 2013.

Potential Environmental Effects

Basis of Significance. The effect of those substances identified as potentially hazardous in 40 CFR Parts 260 through 279 would be considered to be significant if they would (1) expose workers to hazardous substances in excess of Occupational Safety and Health Administration (OSHA) standards, or (2) contaminate the physical environment, thereby posing a hazard to humans, animals, or plant populations by exceeding Federal exposure, threshold, or cleanup limits.

No Action Alternative. Under the no action alternative, there would be no effects on hazardous and toxic waste. Existing sites would not be disturbed, and any hazardous materials

would continue to be present in the same amounts. However, a major flood event could release contaminants in the form of petroleum products, solvents, and pesticides into the water and the surrounding areas.

Proposed Levee Improvements. Construction at Sites L7, L10, R3A, and R7 involves jet grout construction. One of the constituents associated with jet grout is cement. The cement would be delivered in large bags, which would be offloaded at the batch plant for mixing. The cement is a hazardous material, characterized as a caustic. As such, it would be stored and handled in compliance with all Federal, State, and local regulations, as well as in adherence to OSHA worker safety standards. Although design and construction considerations have significantly minimized the risk of impacts to the environment, spilled or improperly contained jet grout material, oil, or fuels from construction equipment could result in soil contamination at the work or staging areas. The proposed avoidance, minimization, and mitigation measures described below would minimize the risk of impacts from potentially hazardous materials. Impacts would be less than significant.

Avoidance, Minimization, and Mitigation Measures

The contractor would be required to properly store and dispose of any hazardous waste generated at the site. The contractor would be responsible for developing and implementing a SWPPP. All applicable spill prevention measures associated with the batch plant would be implemented, as well as measures to avoid the cement mixture or jet grout spoils from entering the American River. Any potential effects would be minimized through avoidance, minimization, and mitigation measures proposed under Air Quality (Section 3.2.5) and Water Quality and Resources (Section 3.2.7). All spoil material or cuttings would be properly dried before being characterized and disposed of at a licensed regulated facility.

Identification, characterization, segregation, transportation, and disposal of all hazardous wastes would be conducted in accordance with all applicable Federal, State, and local regulations to ensure safety to workers and the public against exposure and contamination. These regulations and BMPs would reduce impacts to less than significant.

4.0 GROWTH-INDUCING EFFECTS

The proposed action would not induce growth in or near the project area. Local population growth and development would be consistent with the Land Use Element of the Sacramento County General Plan (2007). The goal of the proposed action is to construct levee improvements along the American River in order to meet USACE requirements for levee stability. The areas protected by the levees are highly urbanized areas. Levee improvements from this project and other levee improvement projects in the area would not increase or decrease the level of urbanization in the greater Sacramento region. In addition, construction, operation, and maintenance of the improved levee would not result in a substantial increase in the number of permanent workers or employees.

5.0 CUMULATIVE EFFECTS

The NEPA regulations and CEQA Guidelines require that a NEPA document discuss project effects that, when combined with the effects of other projects, result in significant cumulative effects. Additional detailed information on cumulative effects in the lower American River is included in the 1996 SEIS/EIR.

The NEPA regulations define a cumulative effect as the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor or collectively significant actions taken over a period of time" (40 CFR § 1508.7).

The CEQA Guidelines require that an EIR discuss cumulative effects "when they are significant" (14 CCR § 15130). The CEQA Guidelines define cumulative effects as "two or more individual effects which, when considered together, compound or increase other environmental impacts" (14 CCR § 15355). Additionally, the CEQA Guidelines state: "The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to the other closely related past, present, and reasonable foreseeable probable future projects" (14 CCR § 15355).

5.1 Local Projects

This section briefly describes other projects in the Sacramento area. The exact construction timing and sequencing of these projects are not yet determined or may depend on uncertain funding sources. All of these projects are required to evaluate the effects of the proposed project features on environmental resources in the area. In addition, avoidance, minimization, or mitigation measures must be developed to avoid or reduce any adverse effects to less than significant based on Federal and local agency criteria. Those effects that cannot be avoided or reduced to less than significant are more likely to contribute to cumulative effects in the area.

5.1.1 Folsom Dam Safety and Flood Damage Reduction Project Ongoing Construction Activities

The Folsom Dam Safety and Flood Damage Reduction Project addresses dam safety and flood risk management at the Folsom facility. Several activities associated with the project include: Phase II, Phase III, and Phase IV of the Folsom Dam Auxiliary Spillway Joint Federal Project, referred to as the Joint Federal Project (JFP); static upgrades to Dike 4; Mormon Island Auxiliary Dam (MIAD) modifications; and seismic upgrades (piers and tendons) to the main concrete dam.

Auxiliary Spillway Excavation: Spring 2009 to Fall 2010. Major work under Phase II of the JFP includes partial excavation of the western portion of the auxiliary spillway, construction of the downstream cofferdams, relocation of the Natoma Pipeline, and creation of an access road to the stilling basin. This portion of the JFP was covered under the 2007 Folsom Dam Safety

and Flood Damage Reduction Project EIS/EIR (2007 EIS/EIR). Construction was conducted by the U.S. Bureau of Reclamation (USBR) and was completed prior to the start of the control structure construction effort.

Dike 4 and 6 Repairs: Summer 2009 to June 2010. To address seepage concerns due to static and hydrologic loading for Dikes 4 and 6, USBR installed full height filters, toe drains, and overlays on the downstream face of each earthen structure. This portion of the JFP was covered under the 2007 EIS/EIR.

Mormon Island Auxiliary Dam Modification Project: Summer 2010 to Summer 2014. USBR released the draft EIS/EIR for the MIAD Modification Project in December 2009. The preferred MIAD action alternative of jet grouting selected in the FEIS/EIR was determined to be neither technically nor economically feasible. Four action alternatives were analyzed in the MIAD Draft Supplemental EIS/EIR. All alternatives address methods to excavate and replace the MIAD foundation, place an overlay on the downstream side, and install drains and filters; the alternatives differ only in their method of excavation. In addition, all four action alternatives in the Draft Supplemental EIS/EIR include habitat mitigation proposed for up to 80 acres at Mississippi Bar on the shore of Lake Natoma to address impacts from the JFP.

Pier Tendon Installation, Spillway Pier Wraps, and Braces at Main Concrete Dam: April 2011 through Spring 2012. These three projects address seismic concerns at the main concrete dam. These improvements are designed to help stabilize the main concrete dam against movement during a major earthquake. This portion of the JFP was covered under the 2007 FEIS/EIR, and will be completed prior to implementation of the Approach Channel project.

Control Structure, Chute, and Stilling Basin: Spring 2011 to Fall 2017. Phase III of the JFP consists of construction of the auxiliary spillway control structure. This effort is currently under construction by USACE and is projected to be completed in the fall of 2014. Concrete lining of the spillway chute and stilling basin will be conducted by USACE from approximately summer 2013 to fall 2017. Construction of the control structure, and the concrete lining of the chute and stilling basin were all covered under the USACE 2010 EA/EIR.

Additional Downstream Features: Fall 2012 to Spring 2013. The design refinements to Phase III construction are being evaluated in a supplemental EA/EIR include the construction of a temporary traffic light, modification to the existing dirt access haul road, installation of the stilling basin drain, and use of the existing nearby staging area with the installation of a new batch plant to be used and operated for other downstream features work. A draft EA/EIR is scheduled for public review in summer 2012.

Approach Channel: Spring 2013 to Fall 2017. The approach channel project is the final construction activity of Phase IV of the JFP. The primary and permanent structures consist of the 1,100 foot long excavated approach channel and spur dike. A transload facility and concrete batch plant will be constructed as necessary temporary structures to facilitate the construction. Additional existing sites and facilities that would be used for the length of the project include the Folsom Prison staging area, the existing Bureau of Reclamation Overlook, the MIAD area, and Dike 7. These sites and facilities are connected by an internal project haul road. Criteria

pollutant emissions from the approach channel project and the downstream project would be less than significant for ROG, CO, SO_2, and $PM_{2.5}$, less than significant with mitigation for PM_{10}. NO_x exceeds the GCR *de minimis* threshold, but would be addressed by inclusion in the State Implementation Plan, which would provide compliance with the General Conformity Rule of the Federal Clean Air Act. The draft supplemental EIS/EIR was released for public review July 20, 2012 and the Record of Decision was signed on March 8, 2013. Construction is scheduled to begin in summer 2013, with completion expected in October 2017.

5.1.2 Folsom Dam Flood Management Operations Study

The Flood Management Operations Study is being completed in conjunction with the JFP by USACE, USBR, CVFPB, and SAFCA. The Flood Management Operations Study for Folsom Dam will develop, evaluate, and recommend changes to the flood control operations at Folsom Dam that would further reduce flood risks to the Sacramento area. Operational changes may be necessary to fully realize the flood risk reduction benefits of the following:

- The additional operational capabilities created by the auxiliary spillway;
- The increased downstream conveyance capabilities anticipated to be provided by the American River Common Features Project (Common Features);
- The increased flood storage capacity anticipated to be provided by completion of the Folsom Dam Raise Project (Dam Raise); and
- The use of improved forecasts from the National Weather Service.

Further, the Flood Management Operations Study will 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 will result in a USACE decision document and will be followed by a water control manual implementing the recommendations of the Study. It should be recognized that the initial water control manual will implement the recommendations of the study, but will not include the capabilities to be provided by the Dam Raise and additional Common Features project improvements until such time as these projects have been completed.

5.1.3 Folsom Dam Raise

The Folsom Dam Raise project will follow the JFP. This project includes raising the Folsom Dam, and the dikes around Folsom Reservoir by 3.5 feet; replacing the three emergency spillway gates; and three ecosystem restoration projects (automation of the temperature control shutters at Folsom Dam and restoration of the Bushy and Woodlake sites downstream). The ecosystem restoration projects have been prioritized at different levels and separated, with automation of the temperature control shutters to be the next completed feature in 2017 and the two downstream restoration sites to be completed in approximately 2016 or 2017. For the dam raise portion of the project, the design should begin in 2015 and be completed in FY16, with construction following in phases through 2017 and 2018.

5.1.4 Lower American River Common Features Project

Based on congressional authorizations in WRDA 96 and WRDA 99, USACE, CVFPB, and SAFCA have undertaken various improvements to the levees along the north and south banks of the American River and the east bank of the Sacramento River.

Under WRDA 96, the most recent improvements involved seepage protection at RM 62 on the east bank of the Sacramento River (2009); as well as RM 7.0 left and right bank (2010), RM 8.5 left bank (2010), RM 5.5 right bank (2011), and RM 6.5 right bank (2012), all on the American River. Sites located at RM 4.5 and 7.5 on the left bank, as well as RM 9.5 on the right bank are scheduled for construction in 2013.

Of the five sites authorized under WRDA 99, the Mayhew Levee Raise and the Mayhew Drain Closure Structure projects were completed in 2008; the Howe Avenue project was completed in 2012; the Jacob Lane Project (Reaches A & B, 2009 and 2010) will be completed with the construction of Reach C scheduled for 2013; and the Natomas East Main Drain Canal (NEMDC) is scheduled for construction in 2013 (NEMDC South) and 2014 (NEMDC North).

Several other phases of repairs have been completed in the Natomas Basin under the Lower American River Common Features Project. The project will continue to study potential erosion control repairs along the lower American River and the east bank of the Sacramento River.

5.1.5 Natomas Levee Improvement Project

The Natomas Levee Improvement Project was authorized in 2007 as an early-implementation project initiated by SAFCA in order to provide flood protection to the Natomas Basin as quickly as possible. These projects consist of improvements to the perimeter levee system of the Natomas Basin in Sutter and Sacramento Counties, California, as well as associated landscape and irrigation/drainage infrastructure modifications. SAFCA, DWR, CVFPB, and USACE have initiated this effort with the aim of incorporating the Landside Improvements Project and the Natomas Levee Improvement Project into the Federally-authorized American River Common Features Project. Future project features will be completed under the proposed American River Common Features General Reevaluation Report, upon authorization.

5.1.6 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 is a long-range program of bank protection authorized by the Flood Control Act of 1960. The SRBPP directs USACE to provide bank protection along the Sacramento River and its tributaries, including that portion of the lower American River bordered by Federal flood control project levees. Beginning in 1996, erosion control projects at five sites covering almost two miles of the south and north banks of the lower American River have been implemented. Additional sites at RM 149 and 56.7 on the Sacramento River totaling one-half mile have been

constructed since 2001. During 2005 through 2007, 29 critical sites totaling approximately 16,000 linear feet were constructed under the Declaration of Flood Emergency by Governor Schwarzenegger. This is an ongoing project, and additional sites requiring maintenance will continue to be identified indefinitely until the remaining authority of approximately 24,000 linear feet is exhausted over the next 3 years. The Water Resources Development Act of 2007 authorized an additional 80,000 linear feet of bank.

These projects would help to reduce flood risk and increase safety for residents in the Sacramento area by improving the integrity of the levees along the American and Sacramento Rivers. The Lower American River Common Features Project and the Sacramento River Bank Protection Project would also help meet FEMA's 100-year flood criteria for the Sacramento area levee system. These would be considered beneficial cumulative effects.

5.1.7 Guy West Bridge Maintenance and Rehabilitation Project

The Guy West Bridge is a steel suspension bridge located near RM 7.5 on the American River. The bridge was constructed in 1966 for use by pedestrians and bicyclists. In 2011, the City of Sacramento conducted an in-depth inspection and need assessment report identifying various deficiencies of the bridge. Recommended repairs included minor truss and deck repair, replacement of bearing pads, handrail repairs, and the full removal and replacement of the failing lead-based paint. The preliminary engineering design for the Guy West Bridge Maintenance and Rehabilitation Project began in February 2013; the project is proposed to begin in April 2014 and is expected to be completed by October 2014. The work would involve some temporary closures of the bridge. Cumulative effects would be avoided though coordination and communication. Construction schedules would be coordinated to avoid closures taking place on multiple bridges at the same time.

5.1.8 Watt Avenue at US 50 Interchange Project

The Watt Avenue at US 50 Interchange Project is anticipated to be constructed by Sacramento County between 2012 and 2014. This project is located east of the city of Sacramento within the unincorporated area of Sacramento County. This project would modify the existing full cloverleaf interchange of US 50 at Watt Avenue into a partial cloverleaf in order to reduce congestion, increase safety, and accommodate alternate modes of travel, including bus rapid transit, bicyclists, wheel chairs, and pedestrians. The proposed partial cloverleaf interchange includes a grade-separated mixed-use path on both sides of Watt Avenue and more direct access over the interchange for pedestrians, bicyclists, and those with ambulatory disabilities. The new facility would provide a safer route by removing conflicts with motor vehicles.

5.2 Cumulative Effects

Land Use

The River Corridor Management Plan and American River Parkway Plan recognize the American River Parkway as the key feature of the American River flood control system in Sacramento, and consider flood management the primary land use on the Parkway. The use of Parkway land to provide flood protection to the Sacramento area is consistent with these plans. In addition, the areas protected by the levees are highly urbanized areas. Levee improvements from this project and other levee improvement projects in the area would not increase or decrease the level of urbanization in the greater Sacramento region as there is little room for future growth. As a result, the project is consistent with adopted plans and policies on land use in the project area and would not contribute significantly to cumulative effects on land use.

Recreation

The project would have a short-term restriction on recreational access during construction. This project and other similar past, present, and reasonably foreseeable future projects are not expected to result in long-term changes to recreational access or opportunities on the Parkway. In order to reduce the cumulative effects of projects proposed to be constructed in immediate vicinity of each other, such as other sites in the WRDA 96 American River Common Features Remaining Sites Project and the Guy West Bridge Maintenance and Rehabilitation Project, construction schedules would be coordinated to avoid closures taking place on multiple bridges at the same time These projects are not expected to result in adverse cumulative effects.

Vegetation and Wildlife

The project would result in short-term disturbances of wildlife habitat, but would not substantially reduce the connectivity or extent of natural vegetation and wildlife habitat along the American River. All of the local projects would have short-term effects on vegetation and wildlife such as the removal of grasses and other native vegetation during construction activities. Sites L10 and R7, as well as other projects in the local area such as the WRDA 99 NEMDC Project, would compensate for these impacts to habitat through the planting of native tree species and other native vegetation. These plantings would occur in mitigation sites and are expected to result in a net, long-term improvement in native vegetation and wildlife habitat values in the Parkway. As a result, cumulative effects to vegetation and wildlife would be less than significant.

Fisheries

Historical modifications to the project areas have created a highly altered riverine system; however, current projects are not expected to create new adverse effects on fisheries. Levee improvement projects such as the WRDA 96 American River Common Features Remaining Sites Project, Sites L7, L10, R3A, and R7, as well as the WRDA 99 NEMDC Project would not involve in-water work or removal of woody debris from the river. Current Folsom Dam modifications are being designed to allow water to be released from the bottom of the reservoir,

potentially lowering water temperatures in the American River. Lower water temperatures are conductive to optimal spawning in threatened and endangered salmonids. Avoidance, minimization, mitigation measures, and BMPs would be implemented during the construction of all projects to reduce the cumulative effects to fisheries and EFH to less than significant.

Special Status Species

The construction of Site L10 and other local projects, including the WRDA 99 NEMDC Project, would result in the removal of elderberry shrubs. The short-term impacts of the removal of these elderberry shrubs is unknown due to the cryptic nature of the VELB. However, because of the limited spatial extent of elderberry shrub removal and prevalence of existing elderberry shrubs in the project vicinity, the overall extent and connectivity of beetle habitat is not expected to be diminished by these projects. Establishment of additional beetle mitigation areas on the Parkway consistent with USFWS Guidelines would result in the long-term net improvement of beetle habitat by increasing habitat extent and connectivity along the American River. While the construction of Sites L7, L10, R3A, R7 and other projects have resulted in short-term, localized effects to beetle habitat, the incorporation of habitat mitigation on the Parkway is expected to result in the long-term, cumulative improvement to beetle habitat on the Parkway and ultimately assist in the recovery of the species.

Other special status species including Swainson's hawks, white-tailed kites, bank swallows, and threatened or endangered salmonids are not expected to be adversely affected by other projects in the local area. Levee improvement projects would use BMPs, avoidance, minimization, and mitigation measures to reduce any effects to less than significant. As a result, these projects would not contribute significantly to cumulative adverse effects on special status species.

Air Quality

Construction of the WRDA 96 Common Features Remaining Sites Project, Sites L7, L10, R3A, and R7 are not expected to have any long-term effects on air quality since the operational activities (including inspection and maintenance) are expected to be similar to existing conditions. If Sites L7, L10, R3A, and R7 are all constructed in 2014, they may overlap with the construction of the WRDA 99 NEMDC North Project, the Folsom Auxiliary Spillway Project, the Guy West Bridge Maintenance and Rehabilitation Project, and the Watt Avenue at US 50 Interchange Project. All projects in the area would implement BMPs, avoidance, minimization, and mitigation measures as recommended by SMAQMD, and are in compliance with the Clean Air Act. Table 7 shows the combined air emissions estimations for the construction of Sites L7, L10, R3A, R7, and NEMDC North.

Table 7. Combined Estimated Air Emissions for Concurrent Construction of Sites L7, L10, R3A, R7, and NEMDC North Projects.

	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$	CO_2
Total emissions (lbs/day)	**33.6**	**195.7**	**297.3**	**86**	**28.9**	**39,020.80**
SMAQMD thresholds (lbs/day)	N/A	N/A	85	N/A	N/A	N/A
Total (tons/construction project)	**1.0**	**5.9**	**8.8**	**2.4**	**0.7**	**1,167.60**
Federal standards (tons/year)	25	100	25	100	N/A	N/A

ROG = reactive organic gases
NOx = nitrogen oxides
CO = carbon monoxide
PM = particulate matter
CO_2 = carbon dioxide
Note: Estimates rounded.

The cumulative effects of all proposed projects being constructed concurrently would not exceed Federal standards; however, local daily thresholds would be exceeded. Implementation of the standard construction mitigation measures as recommended by SMAQMD (Appendix B) would reduce the NO_x emissions by 20 percent and the PM_{10} emissions by 45 percent. These standard mitigation measures would reduce the cumulative effects on air quality to less than significant.

Climate Change

Projects in the area would emit GHGs as part of the combustion engine process in light- and heavy-duty vehicles. GHGs by definition are cumulative in nature; that is, the significance of GHG emissions is negligible until all GHG emissions are accounted for on a global scale. Protocol is being developed that would enable greater analysis and understanding of the effects of GHG emissions in order to reduce the effects of climate change. That being said, there are currently no Federal, State, or agency thresholds of significance on GHGs, making analysis of the cumulative effects of GHG emissions speculative at best. Although projects in the local area and Statewide would have varying levels of GHG emissions, standard construction techniques and BMPs would reduce the GHGs emitted from these construction projects to below significant levels. Therefore, the emissions from other local construction projects would not contribute significantly to climate change.

Water Resources and Quality

Projects in the area could result in accidental spills or leaks that could affect surface and ground water resources. With multiple projects under construction, the possibility exists that several accidental spills or leaks could enter the water. All projects have BMPs, as well as avoidance, minimization, and mitigation measures included in the construction plans that would be implemented to avoid or reduce these effects to less than significant. As a result, the projects would not contribute significantly to cumulative effects on water resources and quality. In addition, the projects in the area could have an overall beneficial effect on water quality. By

diminishing the possibility for a catastrophic flood event, significant long-term impacts to water quality through contamination from flooded vehicles, household and industrial chemicals, raw sewage, and other wastes that may be present in the area would be reduced to less than significant.

Traffic and Circulation

The construction of all projects in the local area would involve trucks and worker vehicles entering and exiting residential areas, potentially disrupting traffic flow and possibly posing a safety hazard to other motorists, pedestrians, and bicyclists on and along these roadways and access points to the Parkway. Large trucks transporting equipment and materials to the work areas would not be consistent with the types of residential traffic using the neighborhood streets; however, the increases in traffic due to construction vehicles would not be significant as compared with existing levels of neighborhood traffic. Implementation of measures in the Traffic Management Plan would minimize traffic congestion and delays and ensure public safety. Minimization measures and BMPs at all sites would reduce adverse cumulative effects on local traffic to less than significant.

Public Utilities and Services

Levee improvement projects such as the WRDA 1996 American River Common Features Remaining Sites Project, Sites L7, L10, R3A, and R7, as well as the WRDA 99 NEMDC Project, would protect utilities in place and are not expected to affect public services and utilities. In the event of changes or disruptions to public utilities and services due to other projects in the area, USACE would coordinate with the affected companies and would send notice to potentially affected customers. Since no significant adverse affects to public utilities and services are anticipated for this project or other projects in the local area, there would be no adverse cumulative effects on public utilities and services.

Noise and Vibration

This project and other local projects, such as the WRDA 1996 American River Common Features Remaining Sites Project, Sites L7, L10, R3A, and R7, as well as the WRDA 1999 NEMDC Project would result in temporarily increased levels of ambient noise in the residential area and Parkway during construction. Noise levels could reach the high 80s dBA, depending on the type of equipment or truck. The majority of these local projects are not in immediate vicinity of each other. As a result, the different projects would primarily affect different receptors; therefore, there would not be a cumulative effect associated with the majority of these sites. Sites L7 and R7 are across the river from each other and would occur progressively, extending the length of the impact to the local receptors. However, the construction of Sites L7 and R7 would take place mainly on the waterside toe of the levee. The levee would create a buffer against some of the construction noise, minimizing the impact from these activities. Coordination with the local receptors and the implementation of minimization measures as discussed in Section 3.2.10 would reduce the cumulative effects of the construction of Sites L7 and R7 to less than significant.

Aesthetics and Visual Resources

The lower American River is a Federally and State-designated component f the National Wild and Scenic Rivers System. Although the projects in the local area would have short-term effects on the aesthetics in the project areas, there would be no construction in the river, and no waterways would be altered. All areas that would be disturbed during construction would be revegetated and restored to preconstruction conditions; any effects to visual resources would be temporary. The temporary effects to visual resources would be dispersed throughout the American River Parkway. With the exception of Sites L7 and R7, most sites are separated by at least half a mile; thus, the cumulative effects to aesthetics and visual resources would be less than significant.

6.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

6.1 Federal

Clean Air Act of 1972, as amended, 42 U.S.C. 7401, et seq. *Compliance*. The proposed action is not expected to violate any Federal air quality standards, exceed the EPA's general conformity *de minimis* thresholds, or hinder the attainment of air quality objectives in the local air basin. Implementation of BMPs would reduce NO_x emissions to below Federal thresholds. Thus, USACE has determined that the proposed project would have no significant effects on the future air quality of the area.

Clean Water Act of 1972, as amended, 33 U.S.C. 1251, et seq. *Compliance.* The proposed action is not expected to adversely affect surface or ground water quality, deplete ground water supplies, or result in placement of dredged or fill material into waters of the U.S. and associated wetlands. BMPs would be implemented to avoid movement of soils or accidental spills into the river. Since the project would disturb one or more acres of land and involve possible storm water discharges to surface waters, the contractor would be required to obtain a National Pollution Discharge Elimination System permit from the California Regional Water Quality Control Board, Central Valley Region. As part of the permit, the contractor would be required to prepare a SWPPP identifying BMPs to be used to avoid or minimize any adverse effects of construction on surface waters. USACE has determined that the proposed project would have no significant effects on the future water quality of the area.

Endangered Species Act of 1973, as amended, 16 U.S.C. 1531, et seq. *Compliance.* In accordance with Section 7(c), USACE obtained a list of Federally listed and proposed species likely to occur in the project area. The only Federally listed species in the project area is the VELB. This project may affect, but is not likely to adversely affect this species. On June 21 and August 8, 2013, USACE reinitiated consultation with USFWS under Section 7 of the Endangered Species Act. USACE has made the determination that while the revised project may result in additional impacts to the beetle, it will not jeopardize the continued existence of the species. On July 2 and August 26, 2013, USFWS concurred with USSACE's determination and amended their July 7, 1999 Biological Opinion to include the potential effects to the VELB. This document is included in Appendix A.

USACE as the action agency has made the determination that there would be no effect on any listed species under the jurisdiction of NMFS. As a result, consultation is not required with NMFS under Section 7 of the Endangered Species Act.

Fish and Wildlife Coordination Act of 1958, as amended, 16 U.S.C. 661, et seq. *Compliance*. On July 22, 2013, USFWS completed the Coordination Act Report regarding the WRDA 96 American River Common Features Remaining Sites Project – Sites L7, L10, R3A, and R7 in order to determine the effects on vegetation and wildlife in the project areas. The Coordination Act Report is included in Appendix C.

Executive Order 11988, Floodplain Management (May 24, 1977). *Compliance.* Executive Order 11988 directs Federal agencies to issue or amend existing regulations and procedures to ensure that the potential effects of any action it may take in a floodplain are evaluated and that its planning programs and budget requests reflect consideration of flood hazards and floodplain management. The purpose of this directive is "to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative."

Repairs to the levees protecting the areas associated with the proposed project have been determined by USACE, the State, and SAFCA to be the most feasible method of providing adequate flood protection to existing development. Other potential levee repair options to provide flood protection for existing development, such as setback levees, seepage berms, or floodwalls, are limited due to the proximity of residential and commercial development adjacent to the project sites. The areas adjacent to, and surrounding, the project sites are already developed and built-out; therefore, the implementation of the project would not directly promote development in the floodplain. However, it must be recognized that completion of the authorized project would not discourage any future redevelopment.

The proposed project would reduce the risk of flood loss and minimize the impact of floods on human health, safety, and welfare by strengthening the existing flood control infrastructure protecting significant existing development. In addition, there is no practicable alternative to floodplain development indirectly associated with the project. As a result, the project satisfies Executive Order 11988.

Executive Order 11990, Protection of Wetlands. *Compliance.* This order directs all Federal agencies to "minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities." The project would not directly affect wetlands. In addition, BMPs would be implemented in order to reduce the possibility of indirectly degrading wetlands.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. *Compliance*. This order directs all Federal agencies to identify and address adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. There are no

minority or low-income populations in the project area. All nearby residents would benefit from the proposed project.

Farmland Protection Policy Act (7 U.S.C. 4201, et seq). *Compliance*. There are no prime and/or unique farmlands in the project area.

Migratory Bird Treaty Act (15 U.S.C 701-18h). *Compliance.* Construction would be timed to avoid destruction of active bird nests or young of birds that breed in the area. If this is not feasible, a qualified biologist would survey the area prior to initiation of construction. If active nests are located, a protective buffer would be delineated and the entire area avoided, preventing disturbance of nests until they are no longer active.

National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321, et seq. *Compliance*. This EA/IS is in compliance with this act. Comments received during the public review period were incorporated into the EA/IS, as appropriate. Comments and responses are located in Appendix E. This EA/IS is accompanied by a final Finding of No Significant Impact (FONSI) as determined appropriate by the District Engineer after consideration of public comments. These actions provide full compliance with this act.

National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq. *Compliance*. A survey of the area of potential effects was conducted by USACE archeological staff. USACE has made a determination of No Adverse Effect for this phase of the American River Common Features Remaining Sites Project. Although USACE has determined that both CA-SAC-481H and CA-SAC 482H are eligible for inclusion in the NRHP, USACE has also made the finding that the project as planned would not adversely affect the integrity of the levees because the essential physical features of the levees that define their integrity; their location along the river, their earthen construction, and their function within the system associated with Folsom Dam; would not be altered.

A letter from the SHPO dated October 15, 2013 concurred with this finding. USACE is in full compliance with this act.

Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271 et seq.). *Compliance*. The lower American River has been designated as a "recreational" component of the Federal Wild and Scenic Rivers system. The project would neither adversely affect the resources for which the American River was designated nor adversely affect the river's free-flowing status. All construction activities would be away from the river.

6.2 State

California Clean Air Act of 1988. *Compliance.* SMAQMD determines whether project emission sources and emission levels significantly affect air quality based on Federal standards established by the EPA and State standards set by the California Air Resources Board. The project is in compliance with all provisions of the Federal and State Clean Air Acts.

California Endangered Species Act of 1984. *Compliance.* The California Department of Fish and Wildlife administers this State law providing protection of fish and wildlife resources. This act requires the non-Federal lead agencies to prepare biological assessments if a project may adversely affect one or more State-listed endangered species. No State-listed species would be adversely affected by the project.

California Environmental Quality Act, California Public Resources Code, Section 21000 et seq. *Compliance*. This EA/IS is in compliance with this act. All comments received during the public review period were considered and incorporated into this EA/IS, as appropriate. This final EA/IS is accompanied by a final Mitigated Negative Declaration. The Central Valley Flood Protection Board, as the non-Federal sponsor, has ensured full compliance with the requirements of this act.

7.0 COORDINATION AND REVIEW OF THE DRAFT EA/IS

The draft EA/IS and draft FONSI/Mitigated Negative Declaration were circulated for 30 days to agencies, organizations, and individuals known to have a special interest in the project. Copies of the draft EA/IS were posted on the SAFCA website (http://www.safca.org) and made available for viewing at local public libraries, or provided by mail upon request. This project has been coordinated with all the appropriate Federal, State, and local government agencies, including the U.S. Fish and Wildlife Service, the State Historic Preservation Officer, the California Department of Fish and Wildlife, and the California Department of Water Resources.

8.0 FINDINGS

This EA/IS evaluated the potential environmental effects of the proposed project of constructing levee improvements at Sites L7, L10, R3A, and R7 on the American River in East Sacramento. Potential adverse effects to the following resources were evaluated in detail: recreation, special status species, vegetation and wildlife, air quality, climate change, water resources and quality, traffic and circulation, aesthetics, noise and vibration, cultural resources, and hazardous materials.

Results of the EA/IS, field visits, and coordination with other agencies indicate that the proposed project would have no significant long-term effects on environmental resources. Short-term effects during construction would either be less than significant or mitigated to less than significance using BMPs and other avoidance, minimization, and mitigation measures.

Based on this evaluation, the proposed project meets the definition of a FONSI as described in 40 CFR 1508.13. A FONSI may 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 draft FONSI has been prepared and accompanies the EA/IS.

The Central Valley Flood Protection Board, as the non-Federal sponsor, is evaluating this project under CEQA guidelines. Should their evaluation determine that the project would have

significant impacts on the environment, avoidance, minimization, and mitigation measures would be incorporated into the project to reduce those impacts to less than significant. A Mitigated Negative Declaration would be attached to the final EA/IS reflecting this determination.

9.0 LIST OF PREPARERS

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10.0 REFERENCES

Association of Environmental Professionals (AEP). 2007. Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents, Final. http://www.counties.org/images/public/advocacy/ag_natres/aep_global_climate_change_june_29_final%5b1%5d.pdf.

California Air Resources Board (CARB). 2008a. 2008 Estimated Annual Average Emissions. http://www.arb.ca.gov/app/emsinv/emseic1_query.php.

California Air Resources Board (CARB). 2008b. Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act. http://www.arb.ca.gov/cc/localgov/ceqa/meetings/102708/prelimdraftproposal102408.pdf.

California Air Resources Board (CARB). 2009. The California Almanac of Emissions an Air Quality – 2009 Edition. http://www.arb.ca.gov/aqd/almanac/almanac09/almanac09.htm.

California Air Resources Board (CARB). 2010. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles. http://www.arb.ca.gov/diesel/documents/rrpFinal.pdf.

California Department of Water Resources (DWR). 2003. Bulletin 118, Update 2003, Chapter 7: Sacramento River Hydrologic Region. http://www.water.ca.gov/pubs/groundwater/bulletin_118/california's_groundwater__bulletin_118_-_update_2003_/bulletin118_5-sr.pdf

California Department of Water Resources (DWR). 2009. Water Data Library. Sacramento River at Sacramento. http://www.water.ca.gov/waterdatalibrary/docs/Hydstra/docs/A07140/2009/STAGE_DAILY_MEAN_REPORT.TXT.

California Department of Water Resources (DWR). 2009. Water Data Library. American River at Sacramento. http://wdl.water.ca.gov/hydstra/index.cfm?site=A07140.

California Natural Diversity Database (CNDDB). 2009. California Department of Fish and Game, Biogeographic Data Branch. http://www.dfg.ca.gov/biogeodata/cnddb.

City of Sacramento. 2004. Sacramento River Treatment Plant and E.A. Fairbairn Water Treatment Plant Improvement. http://www.cityofsacramento.org/utilities/water/documents/TM08.pdf.

City of Sacramento. 2007. City of Sacramento Traffic Counts Database. http://www.cityofsacramento.org/transportation/traffic/list.cfm.

Council on Environmental Quality (CEQ). 2010. Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions. February 18, 2010.

County of Sacramento. 1997. The County of Sacramento General Plan Noise Element. http://library.ceres.ca.gov/cgi-bin/doc_home?elib_id=2023.

County of Sacramento. 2007. The County of Sacramento General Plan Land Use Element. http://www.planning.saccounty.net/general-plan/docs/pdf/GP-Elements/Land%20Use%20Element-updated%2008.29.07.pdf.

Cunniff, P. F. 1977. Cunniff Solutions Manual to Acc Environmental Noise Pollution. John Wiley & Sons Inc. New York.

Dames & Moore. 1995a. South Bank American River Levee. Cultural Resources site record for CA-SAC-482H. On file, California State University, Sacramento.

Dames & Moore. 1995b. North Bank American River Levee. Cultural resource site record for CA-SAC-481H. On file, California Sate University, Sacramento.

Domagalski, J and L. Brown. 1994. National Water-Quality Assessment Program: The Sacramento River Basin. U.S. Geological Survey. http://ca.water.usgs.gov/sac_nawqa/Publications/fs_1994-029.html.

Garrison, Barrett A. 1999. Bank Swallow (*Riparia riparia*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/414.

Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007 Synthesis Report*. http://www.ipcc.ch/publications_and_data/publications_ipcc_ fourth_assessment_report_synthesis_report.htm.

JRP Historical Consulting Services, Inc. 2001. Site Record Form Update: CA-SAC-4812H.

Losee, C. 2004. Letter Report to Cingular Wireless.

Moyle, P.B. 2002. Inland fishes of California. University of California Press, Berkeley, CA. http://www.nmfs.noaa.gov/pr/species/fish/greensturgeon.htm.

Myers, J.M., R.G. Kope, G.L. Bryant, D. Teel, L.J. Lierheimer, T.C. Wainwright, W.S. Grant, F.W. Waknitz, K. Neely, S.T. Lindley, and R.S. Waples. 1998. Status review of Chinook salmon from Washington, Idaho, Oregon, and California. U.S. Department of Commerce, NOAA Tech Memo. NMFS-NWFSC-35, 443p.

National Park Service. 1998. Guidelines for Evaluating and Documenting Traditional Cultural Properties. National Register Publications, http://www.nps.gov/nr/publications/bulletins/nrb38/.

Nilsson, E., J. J. Johnson, and S. Flint. 1995. Archaeological Inventory Report, Lower American River Locality: American River Watershed Investigation California. Submitted to U.S. Army Corps of Engineers, Sacramento District. Contract No. DACW05-92-C-0126; Site Record Form: CA-SAC-481H.

Peak, A. S. 1978. Archaeological Investigation of Discovery Park and Captain Tiscornia Park (South Discovery Park) and the American River Parkway, Sacramento, California. Prepared for County of Sacramento Department of Parks and Recreation.

Sacramento Area Flood Control Agency and United States Bureau of Reclamation (SAFCA and USBR). 2000. Interim Folsom Dam Reoperation Agreement. Folsom, CA.

Sacramento County. 2011. Sacramento County Traffic Counts. http://www.sacdot.com/Pages/Traffic-Count-Database.aspx.

Sacramento County. 2009. Sacramento County Municipal Code, Title 6 (Health and Sanitation). http://qcode.us/codes/sacramentocounty/.

Sacramento Metropolitan Air Quality Management District. 2008. Construction Emissions Mitigation CEQA Tools. http://www.airquality.org/ceqa/mitigation.shtml.

Sacramento Metropolitan Air Quality Management District, 2011. Revision - Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan. http://www.airquality.org/plans/federal/ozone/8hr1997/2011SIPrev/index.shtml

Statistical Research, Inc. 2008. Archaeological Monitoring Report for Geotechnical Borings for the Water Resources Development Act 1996 Remaining Sites Study, Along the American River, Sacramento, California. Technical Report 08-42. Contract No. DACWA05-04-D-0004. Prepared for Sacramento District, U.S. Army Corps of Engineers.

U.S. Army Corps of Engineers (USACE). 1996. Final Supplemental Environmental Impact Statement/Environmental Impact Report, American River Watershed Project, Sacramento, California. U.S. Army Corps of Engineers, Sacramento District. Sacramento, CA.

U.S. Army Corps of Engineers (USACE). 1998. Streambank Protection for the Lower American River Final Environmental Impact Report and Supplemental Environmental Impact Statement V for the Sacramento River Bank Protection Project. U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.

U.S. Army Corps of Engineers (USACE). 2002. Final Environmental Assessment/Initial Study, American River Watershed Common Features Project, California, Lower American River Features as Modified by the Water Resources Development Act of 1999. U.S. Army Corps of Engineers, Sacramento District. Sacramento, CA.

U.S. Army Corps of Engineers (USACE). 2002b American River Watershed, California Long-Term Study Final Supplemental Plan Formulation Report EIS/EIR, Volume II: Appendix A, Attachment 1, Appendix 1E. U.S. Army Corps of Engineers, Sacramento District. Sacramento, CA.

U.S. Army Corps of Engineers (USACE). 2006. Final Environmental Assessment/Initial Study, American River Common Features Pocket Area Geotechnical Reaches 2 and 9. U.S. Army Corps of Engineers, Sacramento District. Sacramento, CA.

U.S. Army Corps of Engineers (USACE). 2008a. Environmental Impact Statement/ Environmental Impact Report, Natomas Levee Improvement Project and Phase 3 Landside Improvements Project. U.S. Army Corps of Engineers, Sacramento District. Sacramento, CA.

U.S. Army Corps of Engineers (USACE). 2008b. Final Environmental Assessment/Initial Study, American River Watershed Common Features Project, California Lower American River Features as Modified by WRDA 1999, Jacob Lane Levee Improvements Reaches A & B. U.S. Army Corps of Engineers, Sacramento District. Sacramento, CA.

U.S. Army Corps of Engineers (USACE). 2009. Final Environmental Assessment/Initial Study, American River Common Features WRDA 96 Remaining Sites Phase 1, Sites R1, R5, R6, L12. U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.

U.S. Environmental Protection Agency (EPA). 1971. Community Noise. Office of Noise Abatement and Control EPA-NTID 300.3. Washington, D.C.: U.S. Environmental Protection Agency; PB-207 124. Springfield, VA: National Technical Information Service.

U.S. Environmental Protection Agency (EPA). 2007. Area Designations for 1997 Fine Particle (PM2.5) Standards. http://www.epa.gov/pmdesignations/1997standards/ final/statemaps/California.htm.

U.S. Fish and Wildlife Service (USFWS). 1991. The Distribution, Habitat, and Status of the Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus*. Sacramento, California. http://www.fws.gov/sacramento/es/documents/VELB_Report/velb_report.htm.

U.S. Fish and Wildlife Service (USFWS). 2000. Fish and Wildlife Coordination Act Report for the American River Watershed Investigation, Common Features Modifications, Sacramento County, California [Draft].

Weatherbase. 2008. Sacramento, California. www.weatherbase.com/weather/weather.php3?s=38427&refer=.

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Environmental Resources Branch

FINDING OF NO SIGNIFICANT IMPACT
American River Common Features WRDA 96
Remaining Sites L7, L10, R3A, and R7

I have reviewed and evaluated the information presented in this Environmental Assessment/Initial Study (EA/IS) prepared for the American River Common Features, Water Resources Development Act of 1996 (WRDA 96) Remaining Sites L7, L10, R3A, and R7. The project would strengthen the levee by closing gaps remaining from previous slurry wall construction performed between 2000 and 2002. At the time, project design determined that several logistical factors were complicating the cutoff wall construction, and sites containing utilities, overpasses, abutments, or other appurtenances were left for later construction. Details for each site are as follows:

- Site L7 is located near River Mile (RM) 07 on the left (west) bank of the American River at the Fair Oaks Boulevard/J Street Bridge. The proposed staging area for this site is located across the American River on the waterside toe of the right (east) levee as proposed for Site R7. Alternative staging could take place in the Scottish Rite Masonic Center parking lot across from Camellia Avenue.

- Site L10 is located near RM 08 on the left (south) bank of the American River at the Howe Avenue Bridge. The staging area for this site is located on the landside toe of the levee under the Howe Avenue Bridge.

- Site R3A is located near RM 04 on the right (north) bank of the American River at the Capitol City Freeway Bridge. The staging area for this site is located on the landside toe of the levee at Cal Expo.

- Site R7 is located near RM 07 on the right (east) side of the American River at the Fair Oaks/J Street Bridge). The proposed staging area for this site would be located on the waterside toe of the levee on the upstream side of the Fair Oaks/J Street Bridge.

The possible consequences of the work described in the EA/IS have been studied with consideration given to environmental, socioeconomic, cultural, and engineering feasibility. I have also considered the views of other interested agencies, organizations, and individuals. The environmental effects have been coordinated with the U.S. Fish and Wildlife Service, the California State Historic Preservation Officer, the California Department of Fish and Game, the California Department of Water Resources, the Central Valley Flood Protection Board, and the Sacramento Area Flood Control Agency.

Construction of all four sites is expected to occur during 2014. Construction related activities would take between two and four months at each site. Signs, detour routes, and temporary diversion structures would be used at the construction sites to minimize impacts to recreation trails. Best management practices, avoidance protocols, and minimization and mitigation measures would be used during construction to reduce effects related to sensitive biological resources, air quality, water quality, cultural resources, noise, and utility systems. All areas disturbed by construction would be restored to pre-construction conditions.

Consultation with U.S. Fish and Wildlife Service under Section 7(c) of the Endangered Species Act of 1973, as amended (16 U.S.C 1531) was initiated on June 21, 2013 and a Biological Opinion was received on July 2, 2013. The Biological Opinion requires the planting of 0.11 acres of elderberry compensation, which would occur at a site located within the American River Parkway near Cal Expo. There would be no in-water work, no bank stabilization, and no removal of woody debris from the river. The project would have no effect on endangered fish species or their habitat; therefore, consultation with National Marine Fisheries Service was not required.

Based on my review of the EA/IS and my knowledge of the project area, I have determined that the proposed levee repair work, including access routes and staging areas, would have no significant, long-term effects on environmental or cultural resources. Based on these considerations, I am convinced that there is no need to prepare an environmental impact statement. Therefore, an EA and Finding of No Significant Impact provide adequate environmental documentation for the proposed action. This concludes the National Environmental Policy Act process for this project.

18 Nov 13
Date

Michael J. Farrell
Colonel, U.S. Army
District Engineer

for Jason Lemasters
LTC, EN
Dpty Cdr

MITIGATED NEGATIVE DECLARATION
AMERICAN RIVER WATERSHED COMMON FEATURES PROJECT IN SACRAMENTO, CALIFORNIA
LOWER AMERICAN RIVER COMMON FEATURES AS MODIFIED BY WATER RESOURCES DEVELOPMENT ACT OF 1996
REMAINING SITES
SITES L7, L10, R3A, and R7

Project Background

In 1998, the U.S. Army Corps of Engineers (USACE), the Central Valley Flood Protection Board (Board) (at the time named the Reclamation Board) and Sacramento Area Flood Control Agency (SAFCA) began work on features to strengthen the existing levees along the lower American River as authorized by Water Resources Development Act (WRDA) of 1996. Slurry walls were constructed to prevent through and under-seepage of the levees in 2000-2002.

This work left gaps in the slurry wall because of various infrastructure complications. These have been compiled into nineteen sites divided into four phases. The Environmental Assessment/Initial Study (EA/IS) for the Lower American River Common Features as Modified by Water Resources Development Act (WRDA) of 1996, Sites L7, L10, R3A, and R7 (Project) discusses the environmental issues and potential project impacts of the project, and provides mitigation measures to reduce impacts to a less than significant level. The potential impacts and mitigation measures are incorporated into this Mitigated Negative Declaration.

Previous environmental documentation includes the 1996 American River Watershed Supplemental Information Report and Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/SEIR), and Environmental Assessments/Initial Studies with Findings of No Significant Impact and Mitigated Negative Declarations for the separate stages of the 2000-2002 slurry wall construction.

Although the sites were already evaluated in the 1996 SEIS/SEIR, they were compiled under the title of the Lower American River Common Features WRDA 96 Remaining Sites Project. These sites were initially separated into phases based on initial geotechnical evaluations regarding risk of levee failure, with the Phase 1 sites having the highest risk.

Construction of Phase 1 (four sites) began in 2009 and is scheduled to be completed in 2012; Phase 2A (two sites) was completed in 2010. The scheduling and implementation of the remaining sites is based on considerations including obtaining additional geotechnical data,

complexity of design (based on original reasons for excluding the site), real estate issues, and the availability of funding. This document focuses on Sites L7, L10, R3A, and R7, which are are currently in design and are proposed to begin construction in 2014.

Project Location

Four sites along the American River in Sacramento, California are proposed for construction:

- Site L7 is located near River Mile (RM) 07 on the left (west) bank of the American River at the Fair Oaks Boulevard/J Street Bridge, locally known as the H Street Bridge, (H Street Bridge). The site extends for approximately 350 linear feet.

- Site L10 is located near RM 08 on the left (south) bank of the American River at the Howe Avenue Bridge. The site extends for approximately 540 linear feet.

- Site R3A is located near RM 04 on the right (north) bank of the American River at the Business 80 Bridge. This site extends for approximately 325 linear feet.

- Site R7 is located near RM 07 on the right (east) side of the American River at the H Street Bridge. The site extends for approximately 175 linear feet.

Project Description

All four sites will involve the construction of jet grout cutoff walls to a depth of approximately 50 feet. The cutoff walls will extend 12 feet beyond existing slurry walls to provide overlap.

Site L7 involves construction a cutoff wall along the waterside slope of the levee under the H Street Bridge on the left (west) bank. After the cutoff wall is installed, a blanket made of low permeability material would be constructed under the bridge on the waterside slope of the levee to tie in the newly constructed cutoff wall into the existing cutoff wall. The site extends for approximately 350 linear feet.

A multiple use staging area is proposed for use during the construction of Sites L7 and R7. If it is used, steel conduits containing jet grout, air, water, and waste pipelines would be placed along the pedestrian walkway on the south side of the H Street Bridge. If multi use staging area is not used, the Scottish Rite Masonic Center parking lot and side lawn could be used as a staging area. This proposed staging area is located at the corner of H Street and Camellia Avenue. Use of this staging area would require the construction of temporary pipes under

Camellia Avenue in order to pipe materials (grout, air, water, and waste) between the batch plant and the construction site. Construction materials, equipment, topsoil, the batch plant, and excess material would be temporarily stored in the staging area during the construction period. It would also provide a parking location for construction workers. After completion of the project, all staging areas would be returned to pre-construction conditions. Due to the uncertainty of the staging areas associated with this project, this proposed staging area may or may not be used.

Site L10 involves construction a cutoff wall on the left (south) bank of the American River at the Howe Avenue Bridge. The area directly under the bridge will be excavated to a depth of approximately 5 feet in order to create adequate overhead space to conduct the work. After the cutoff wall is installed, a blanket made of low permeability material will be constructed under the bridge on the waterside slope of the levee to tie in the newly constructed cutoff wall into the existing cutoff wall. Additionally, approximately 175 feet of the existing levee upstream of the Howe Avenue Bridge will be reshaped. The site extends for approximately 500 feet where the Howe Avenue Bridge crosses the American River levee.

Site R3A involves two separate jet grout cutoff wall sections on either side of the Business 80 Bridge. The cutoff wall will be approximately 70 feet long on the upstream side and approximately 80 feet long on the downstream side of the Business 80 Bridge. The site extends for approximately 325 feet on the right (north) bank of the American River at the Business 80 Bridge near Cal Expo.

Site R7 involves construction of a cutoff wall along the waterside slope of the levee under the H Street Bridge on the right (east) side of the American River. After the cutoff wall is installed, a blanket made of low permeability material would be constructed on the waterside slope of the levee to tie in the existing cutoff wall into the newly constructed cutoff wall. Approximately 390 cy of riprap would be placed on top of the seepage blanket for erosion control. Site extends for approximately 175 linear feet.
A multiple use staging area is proposed for use during the construction of Sites L7 and R7. If it is used, steel conduits containing jet grout, air, water, and waste pipelines would be placed along the pedestrian walkway on the south side of the. H Street Bridge.

<u>Potential Impacts</u>

Recreation

Site L7

The recreational trail located under the H Street Bridge would be closed during the four month construction period. Access to the recreational trail leading from Sacramento State University to the H Street Bridge would remain open; however, construction vehicles may utilize the ramp in order to access the levee.

If the proposed multiple use staging area is used during the construction of Sites L7 and R7, steel conduits containing jet grout, air, water, and waste pipelines would be placed along the pedestrian walkway on the south side of the H Street Bridge. The steel conduits would be placed as far to the side of the pedestrian walkway as possible; however, the walkway would be narrowed by approximately 12 inches. Bicyclists would be required to walk their bikes due to safety concerns.

Site L10

The recreational trail located under the Howe Avenue Bridge and the access points onto and off of the Howe Avenue Bridge would be temporarily closed during the four month construction period. Access from La Riviera Drive onto the recreational trail and the boat launch owned by County Parks would remain open; however, construction vehicles may utilize the ramp in order to access the levee.

Site R3A

The access ramp leading to the Jedediah Smith Memorial Trail from Tribute Road would remain open; however, construction trucks would also use this ramp in order to access the construction site. The levee crown maintenance roads on either side of the Business 80 Bridge would be closed.

Site R7

The levee maintenance trail between Spanos Court and the construction site would be closed to recreation, and the access points leading from the H Street Bridge to the Jedediah Smith Memorial Trail would be closed intermittently during construction. If the proposed multiple use staging area is used, steel conduits containing jet grout, air, water, and waste pipelines would be placed along the pedestrian walkway on the south side of the H Street Bridge. The steel conduits would be placed as far to the side of the pedestrian walkway as possible; however, the walkway would be narrowed by approximately 12 inches. Bicyclists would be required to walk their bikes due to safety concerns.

Although no long term impacts to recreational resources are anticipated, short term effects associated with the construction process may have potentially significant effects unless mitigated.

Mitigation Measures

Site L7

Recreationists travelling south under the H Street Bridge will be detoured from Glenn Hall Park to Carlson Drive. Recreationists traveling north from the levee crown to the H Street Bridge will be detoured off the levee crown using the Sacramento State University recreational path onto J Street. A temporary bike lane will be created with K-rail or other protective barrier for the duration of construction. Informational and detour signage will be posted a minimum of two weeks prior to site mobilization to inform the travelling public of the temporary closures and detours.

If the proposed multi-use staging area is used, jet grout materials will be piped along the recreational path on the south side of the H Street Bridge. The lines will be placed inside two steel conduits in order to protect the public and the environment from any potential leaks. The two steel conduits will be stacked on top of each other to reduce the amount of space required. The steel conduits will be attached to the bridge railings with steel straps, and a plywood barrier will be placed between the steel conduits and the pedestrian walkway. The recreational trail is required to remain ADA compliant; however, bicyclists crossing the American River at the H Street Bridge will be required to walk their bikes due to safety concerns.

Site L10

Recreationists travelling on the recreational trail will be temporarily detoured from the levee crown trail onto La Riviera Drive in order to avoid the construction area. On the west side of the construction site, a temporary access ramp will be constructed leading from La Riviera Drive back onto the recreational trail. On the east side of the construction site, the main access point leading from La Riviera Drive into the Howe Avenue River Access will remain open; however, construction trucks would also use this ramp in order to access the construction site. Traffic control will be used in order to maintain public safety. Information regarding the closures and detours will be posted at least two weeks prior to construction.

Site R3A

The access ramp leading to the Jedediah Smith Memorial Trail from Tribute Road will remain open; however, construction trucks will also use this ramp in order to access the construction site. Traffic control, such as flaggers and signs, will be implemented in order to maintain public safety.

Site R7

Recreation will be restricted on the levee maintenance trail between Spanos court and the construction area; however, the Campus Commons Golf Course access would remain open. Traffic control, such as flaggers and signs, would be utilized in order to maintain public safety.

Access to and from the H Street Bridge will be intermittently closed when the construction will be taking place on the levee crown and/or adjacent to the access ramp from the bridge. During closures, recreationists travelling north to access the bridge will be detoured off the levee crown and on to the maintenance access ramp located to the east of the bridge. Recreationists could then travel west onto the H Street Bridge. Recreationists travelling south on the levee maintenance trail to access the bridge will be detoured off the levee crown at the Campus Commons Golf Course, travel south on Cadillac Drive, cross Fair Oaks Boulevard at the crosswalk and continue to travel west along the pedestrian walkway across the H Street Bridge.

If the proposed multi-use staging area is used, bicyclists crossing the American River the H Street Bridge will be required to walk their bikes due to safety concerns. Informational and detour signage will be posted a minimum of two weeks prior to site mobilization.

To further ensure public safety at all sites, warning and restricted access signs will be posted before and during construction. In areas where recreational traffic intersects with construction vehicles, traffic control will be used in order to maintain public safety. Active construction areas, including staging areas, will be enclosed with security fencing. Public outreach will be conducted prior to construction through mailings, public meetings, and Internet sites. Coordination with local bicycle groups, residents, businesses, and other interested groups will keep the public informed of the upcoming construction. Any effects to recreation will be temporary, and the proposed mitigation measures would reduce impacts to less than significant. Therefore, no further mitigation measures would be required.

Vegetation and Wildlife

Site L7

One cottonwood tree and several ornamental shrubs will require trimming. The use of the grassy area associated with the Scottish Rite Masonic Center would involve the removal of the landscaped grasses. An elderberry shrub located on the landside of the levee adjacent to the Seventh Day Adventist parking lot will be protected with fencing.

Site L10

Two elderberry shrubs in poor health located in the proposed staging area under Howe Avenue Bridge will be removed and transplanted into a mitigation site using mitigation requirements coordinated with USFWS. Other herbaceous vegetation on the levee slopes between the Howe Avenue Bridge and the La Riviera River Access ramp will be removed in preparation for the levee reshaping proposed for this site. Grasses will be removed from the staging area, and some trees overhanging the site will require trimming. All other shrubs and vegetation will be protected in place.

Site R3A

The landscaped grasses located in the staging area will be removed, and some of the trees overhanging the construction site may require trimming.

Site R7

Trees overhanging the levee access ramp located at Spanos Court will be trimmed. There are several large oak trees located in the proposed staging area on the waterside toe of the levee. These trees will be protected in place; however, some trimming may be necessary. The proposed waterside staging area also overlaps an area of the Parkway that was restored with native vegetation by SRCSD in 2006. If this area is used for staging, shrubs and trees will be protected in place; however, up to one acre of restored native grasses will be removed. There are two elderberry shrubs in the staging area and several elderberry shrubs within 100 feet of the project area; these shrubs will be protected in place.

Construction activities may require minimal trimming of native oak and other large trees adjacent to the project areas. Temporary displacement of local wildlife populations due to noise and increased human presence is likely to occur during construction activities. Some trees and shrubs might be removed as a part of this project. The effects to vegetation and wildlife are temporary and would be less than significant once the mitigation measures described below are implemented.

Mitigation Measures

Some trees and shrubs might be removed as a part of this project. Trees and shrubs that must be removed as part of the project will be identified and removed between the months of November and February in order to reduce impacts to nesting birds. Trimming or removal will be conducted under the observation or direction of a qualified arborist. Trees that must be removed will either be replaced with like species or with native tree species, such as valley oaks and sycamores, which will enhance the quality of the environment.

Trees and shrubs within the construction footprint that will not be removed will be protected in place with temporary fencing placed one and a half times the dripline of each tree or shrub, when possible.

Grasses removed due to construction activities will be restored through reseeding. Landscaped ornamental grasses will be replaced in-kind

If the proposed staging area on the waterside toe of R7 is used, the restoration of the native vegetation mitigation site will be required. During mobilization and set-up activities, the first 12 inches of topsoil of the areas to be excavated will be segregated and stockpiled to the extent feasible in order to return the topsoil to the restoration site.

Effects associated with the trimming of trees and temporary removal of grasses would be less than significant after mitigation. If any further vegetation removal occurs, mitigation measures will be coordinated with USFWS under the Fish and Wildlife Coordination Act. The mitigation measures will be conducted in or near the areas that the vegetation was removed. Mitigation measures will reduce impacts to less than significant.

Fisheries

Construction will not directly interfere with fisheries, including aquatic areas, underlying substrates or associated biological communities. There will be no in-water work, no bank stabilization, and no removal of woody debris or SRA from the river. There is potential for fugitive dust and construction runoff to enter the American River, and the use of the waterside toe as a staging area could potentially affect fisheries if a high water event washed unstable soil into the river.

The possibility exists that the proposed staging area for Site R7 could also be used during the construction of Site L7. If the Site R7 staging area is used for the batch plant and drying bed area, it would be necessary to pipe jet grout and waste material across the H Street Bridge. If

the proposed multiple use staging area is used, the pipeline will be placed along the pedestrian walkway on the south side of the bridge. Although a breakage in the line is highly unlikely, any material spilled from the line while on the bridge would flow directly into the American River. If a large amount of material was spilled, the spilled material and following clean-up activities could affect EFH and fisheries.

Mitigation Measures

If material is piped over the American River, the pipelines will be placed in two steel conduits that will contain any potential leaks. The steel conduits will be placed along the recreational path on the south side of the H Street Bridge. The jet grout system will be monitored for fluctuations in pressure (signifying a leak). Additionally, the jet grout system is equipped with an automatic shut-off system that will activate with large fluctuations in pressure. Any material that escapes from the pipeline into the steel conduits will flow into the staging areas where it will be contained and cleaned up. If any leaks occur from the lines into the steel conduits, construction will stop until damage has been repaired or replaced. Additional containment systems are under discussion. With these and other containment systems in place, the potential for material to flow into the American River will be minimized; therefore, the potential to affect EFH will be minimal.

No work will occur in a wet or aquatic environment and the work will be of limited duration; therefore, the proposed action is not expected to affect fishery or aquatic resources. Any potential effects will be minimized through mitigation measures proposed under Air Quality and Water Quality and Resources. The contractor will be required to develop and submit a Storm Water Pollution Prevention Plan (SWPPP) and a Spill Preventions and Countermeasure Plan (SPCP) prior to initiating construction activities to minimize the potential for soil or other contaminants to enter the river. The SWPPP and SPCP must be approved by USACE.

No liquids will be disposed of into the American River. Water trucks will be used for dust suppression along all areas of disturbed soil and along the haul routes; trucks will be monitored so over watering and runoff does not occur. The contractor will not be allowed to store fuels, lubricants or other potential hazardous substances on site. If equipment is to be refueled on site, BMPs will be used to avoid and contain any spills.

With these BMPs in place, this project is expected to have no effect on fisheries, fish habitat or EFH; therefore, impacts will be considered less than significant.

Special Status Species

Effects to Valley Elderberry Longhorn Beetle.

Construction of the levee improvements would potentially result in direct and indirect effects to elderberry shrubs, the host plant of the VELB. Direct effects would include removal or damage to the plants during site preparation and construction activities. Indirect effects would include physical vibration and an increase in dust during operation of equipment and trucks during construction activities.

Biological surveys were conducted by DWR, USACE, and USFWS biologists on March 13, 2013. Survey results and maps are included in Appendix A of attached EA/IS; site specific details on elderberry shrubs are described below.

Site L7

One large elderberry shrub is located on the landside of the levee near the Seventh Day Adventist Church. The truck haul route will be constructed within twenty feet of the elderberry shrub, potentially causing indirect effects to the shrub and/or stress to VELB residing in the shrub.

Site L10

As well as a large thicket of elderberry shrubs on the downstream end of the project area, there are three elderberry shrubs adjacent to the project area on the waterside toe of the levee. Additionally, two elderberry shrubs are located within the landside staging area located under the Howe Avenue Bridge. Through consultation with USFWS, it was determined that these shrubs should be transplanted into a mitigation site prior to construction in order to reduce impacts to VELB to less than significant. Compensation for the removal and transplanting of the 2 elderberry shrubs would require an additional 13 elderberry seedlings and 13 associated native trees or shrubs to be planted in a conservation site located downstream of Cal Expo or other approved conservation area along the American River Parkway.

Site R3A

There are several elderberry shrubs located on the waterside toe of the proposed project area. While no construction activities are proposed for that area, construction vehicles will pass less than 100 feet from the elderberry shrubs. Elderberry shrubs and VELB could be indirectly affected by vibration and dust.

Site R7

There are more than 14 elderberry shrubs adjacent to the project area, including one large elderberry shrub located within the proposed staging area on the waterside toe. . The construction at Site R7 is anticipated to begin on April 15, during the fly season of the VELB. Due to the small size of the staging area, it would not be feasible to adhere to the recommended 100 foot buffer zone around the elderberry shrubs located in the staging area. Elderberry shrubs will be protected in place; however, elderberry shrubs and VELB could be indirectly affected by vibration and dust.

Effects to White-tailed Kite, Swainson's Hawk, and Cooper's Hawk

Construction of the levee improvements would not directly affect white-tailed kites, Swainson's hawks, or Cooper's hawks. Indirect effects would include physical vibration, and presence of construction vehicles and workers. Construction activities in the vicinity of a nest have the potential to result in forced fledging or nest abandonment by adult hawks, potentially causing significant effects due to the direct mortality and/or reduction in the success of a listed species.

Effects to Bank Swallows

Construction of the levee improvements could potentially result in direct and/or indirect affects to bank swallows if this species begins nesting in or adjacent to the project area prior to construction. Construction activities in the vicinity of bank swallow nesting areas could cause destruction of nesting habitat, and direct mortality could be caused by the sloughing of the embankment due to vibration, potentially causing significant effects due to the direct mortality and/or reduction in the success of a listed species.

Effects to Central Valley Steelhead, Sacramento River Winter-Run Chinook Salmon, and Central Valley Spring-run Chinook Salmon

The American River is considered critical habitat for the Central Valley steelhead, Sacramento River winter-run Chinook salmon, and Central Valley spring-run Chinook salmon. Construction at Sites L7, L10, R3A, and R7 is not expected to adversely affect fish species or their associated habitats. There would be no in-water work, and no riverine habitat would be removed. There is potential for fugitive dust and construction runoff to enter the American River, indirectly affecting the critical habitat of listed fish species. Mitigation measures for water quality would be implemented to reduce impacts on EFH to less than significant at these sites.

Mitigation Measures

Prior to ground disturbance, all on-site construction personnel would be given instruction regarding the presence of sensitive species and the importance of avoiding these species and

their habitats. Additional avoidance, minimization, and mitigation measures would follow the recommendations provided by USFWS under the Fish and Wildlife Coordination Act, including but not limited to:

- Avoid impacts to trees and shrubs. Any trees or shrubs removed would be replaced on-site with container plantings. These plantings would be monitored for 5 years or until they are established and self-sustaining.
- Avoid impacts to nesting migratory birds by conducting pre-construction surveys for active nests near the work areas. Work activity around active nests would be avoided until the young have fledged.
- Minimize project impacts by reseeding all disturbed areas at the completion of construction.
- Contact CDFW regarding possible effects of the project on State-listed species.

The USFWS Planning Aid Letter is included in Appendix C. These measures, as a requirement of ESA compliance, would reduce the effects on sensitive species to less than significant. Species-specific avoidance, minimization, and mitigation measures are described below.

Valley Elderberry Longhorn Beetle

In a letter sent on June 21th, 2013, USACE reinitiated consultation with USFWS with the determination that potential project impacts may affect the VELB. USACE proposes to remove and transplant two elderberry shrubs located in the staging area of Site L10 to the compensation site located at Cal Expo. Compensation would require the planting of 13 elderberry seedlings and 13 associated native plants on 0.11 acres. Additionally, on August 8, 2013, USACE reinitiated consultation with USFWS in order to request that two elderberry shrubs located in the proposed staging area at Site R7 be protected in place with a 20 foot buffer zone between April 15, 2014 until the completion of construction.

Elderberry shrubs located on the waterside toe of Site L10, as well as elderberry shrubs located at Sites L7, R3A, and R7 would be protected in place. To avoid potential take of the VELB, the following measures taken from USFWS's "Conservation Guidelines for the Valley Elderberry Longhorn Beetle," July 1999 would be incorporated into the project:

- With the exception of the elderberry shrub located in the proposed staging area at Site R7, a minimum setback of 100 feet from the dripline of all elderberry shrubs would be established, if possible. If the 100 foot minimum buffer zone is not possible, the next

maximum distance allowable would be established. This area would be fenced, flagged and maintained during construction.

- Environmental awareness training would be conducted for all workers before they begin work. The training would include status, the need to avoid adversely affecting the elderberry shrubs, avoidance areas and measures taken by the workers during construction, and contact information.
- Dust suppression measures would be used and a biological monitor would provide instruction on establishing the buffer zones for the shrubs.
- Signs would be placed every 50 feet along the edge of the elderberry buffer zones. The signs would include: "This area is the habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be readable from a distance of 20 feet and would be maintained during construction.

The proposed mitigation measures would reduce the effects on the VELB to less than significant.

Sensitive Raptors

Effects to Sensitive Raptors

Prior to the onset of construction, biological surveys for the presence of nesting raptors (white-tailed kites, Swainson's hawks, and Cooper's hawks) will be conducted within one-half mile of the proposed construction area. If a survey determines that a nesting pair is present, USACE would coordinate with CDFW and USFWS. To avoid potential effects to nesting raptors, CDFW typically requires the avoidance of nesting sites during construction activities and/or avoiding construction during the nesting season. If construction activities are determined to be necessary during the nesting season, then an on-site biologist/monitor experienced with raptor behavior would be available to monitor the nest while construction-related activities are taking place. If raptors exhibit agitated behavior in response to construction-related activities, the biological monitor would have the authority to stop work and would consult with CDFW and USFWS to determine the best course of action necessary to avoid nest abandonment or take of individuals. The proposed mitigation measures would reduce the effects on white-tailed kites, Swainson's hawks, and Cooper's hawks to less than significant.

Bank Swallow

Prior to the onset of construction, biological surveys for the presence of bank swallows would be conducted within one-half mile of the proposed construction areas. Two weeks prior to the onset of construction, biological surveys would be conducted in order to confirm the results from the previous surveys. If a survey determines that a nesting colony is nearby, USACE would coordinate with CDFG and the proper avoidance and minimization measures would be implemented. With the implementation of CDFG's avoidance and minimization measures, there would be no effect on bank swallows.

Central Valley steelhead and Central Valley winter-run Chinook salmon

Effects to Central Valley steelhead and Central Valley winter-run Chinook salmon

Construction of levee improvements may potentially indirectly affect the Central Valley steelhead, the Central Valley winter-run Chinook salmon, or their associated critical habitats from fugitive dust and construction runoff to the American River. No in-water work would occur. No riparian habitat or SRA would be removed. No trees at, or near, the banks of the river would be removed. The potential for fugitive dust and construction runoff to enter the water would be minimized through mitigation measures proposed under Air Quality and Water Quality and Resources through sediment control, erosion control, and dust abatement. The contractor would be required to develop and submit a SWPPP to minimize the potential for soil or other contaminants to enter the river. The contractor would also be required to develop and submit a SPCP prior to initiating construction activities. The SWPPP and SPCP must be approved by USACE. The proposed mitigation measures would reduce the effects on the Central Valley steelhead, the Central Valley spring-run Chinook salmon, and the Sacramento River winter-run Chinook salmon to less than significant.

Prior to ground disturbance, all on-site construction personnel would be given instruction regarding the presence of sensitive species and the importance of avoiding these species and their habitats. Mitigation measures would follow with the recommendations provided by USFWS and CDFG. These mitigation measures, as a requirement of ESA compliance, would reduce the effects on sensitive species to less than significant.

Air Quality

Combustion emissions would result from the use of construction equipment, truck haul trips to and from the borrow sites, and worker vehicle trips to and from the construction site. The contractor would submit a list of vehicles to be used in the construction project for approval by USACE and SMAQMD. SMAQMD would approve the list only if the total fleet emissions would

meet a 20% reduction in NOx and a 45% reduction in PM_{10} in comparison to the state fleet emissions average. In order to achieve the required reductions in emissions, the following construction mitigation procedures would be followed, in accordance to the SMAQMD Recommended Mitigation for Reducing Emissions from Heavy-Duty Construction Vehicles (Appendix B):

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment would be checked by a certified mechanic and determined to be running in proper condition before it is operated.
- Use diesel-fueled equipment manufactured in 2003 or later, or retrofit equipment manufactured prior to 2003 with diesel oxidation catalysts; use low-emission diesel products, alternative fuels, after-treatment products, and/or other options as they become available.
- Any equipment found to exceed 40% opacity (or Ringelmann 2.0) would be repaired immediately, and USACE and SMAQMD would be notified within 48 hours of identification of non-compliant equipment.
- Any remaining emissions over the NO_x threshold would be reduced to zero through the payment of a mitigation fee. The cost of reducing one ton of NO_x as of July 1, 2013, is $17,460 ($8.73/lb). The contractor would be responsible for payment of any required mitigation and administrative fees.

At least 48 hours prior to the use of subject heavy-duty off-road equipment, the contractor would provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Details of the full mitigation program are located in Appendix B of attached EA/IS.

Implementation of the BMPs listed below would reduce air quality degradation caused by dust and other contaminants:

- Implement all appropriate dust control measures, such as tarps or covers on dirt piles, in a timely and effective manner during construction;
- Periodically water all construction areas having vehicle traffic, including unpaved areas, to reduce generation of dust. Application of water would not be excessive or result in runoff into storm drains;

- Sweep paved streets adjacent to construction sites, as necessary, at the end of each day to remove excessive accumulations of soil or dust;
- Cover all trucks hauling dirt, sand, soil, or other loose material, or maintain at least 2 feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114. This provision would be enforced by local law enforcement agencies; and
- Revegetate or pave areas cleared by construction in a timely manner to control fugitive dust.

Any effects to air quality would be temporary, and localized. Sensitive receptors, such as schools, residences, or hospitals would not be exposed to substantial pollutant concentrations. Avoidance, minimization and mitigation measures would reduce impacts to less than significant.

Climate Change

There would be no increase of long-term emissions (permanent sources) of greenhouse gases from this project. Long-term emissions would be the same with or without the project; maintenance emissions would be the same, and the slurry wall itself has no net long-term emissions. This project does not conflict with any statewide or local goals with regard to reduction of GHG.

BMPs and implementation of the standard construction mitigation measures as recommended by SMAQMD (Appendix B of EA/IS) would reduce greenhouse gas emissions through the same processes that reduce total NOx and PM_{10} emissions.

BMPs and implementation of the standard construction mitigation measures as recommended in the SMAQMD's "Guidance for Construction GHG Emissions Reductions" would further reduce GHG emissions:

- Minimize the idling time of construction equipment to no more than three minutes or shut equipment off when not in use;
- Maintain all construction equipment in proper working condition;
- Encourage carpools, shuttle vans, and/or alternative modes of transportation for construction worker commutes;
- Use locally sourced or recycled materials for construction materials as much as practicable; and
- Develop a plan to efficiently use water for adequate dust control.

Water Resources and Quality

To prevent sediments from escaping the site and entering the American River, sediment control measures will be installed around the construction sites. If the proposed multiple-use staging area and associated jet grout material conduit across the American River is used, the pipelines will be placed in two steel conduits that will contain any potential leaks. The steel conduits will be placed along the recreational path on the south side of the H Street Bridge. The jet grout system would be monitored for fluctuations in pressure (signifying a leak). Additionally, the jet grout system is equipped with an automatic shut-off system that would activate with large fluctuations in pressure. Any material that escapes from the pipeline into the steel conduits will flow into the staging areas where it would be contained and cleaned up. If any leaks occur from the pipelines into the steel conduits, construction will stop until the damage has been repaired or replaced. Additional containment systems are under discussion.

The contractor will be required to obtain a National Pollution Discharge Elimination System permit from the Regional Water Quality Control Board (RWQCB), Central Valley Region. As part of the permit, the contractor will be required to prepare a SWPPP and a SPCP prior to initiating construction activities, identifying BMPs to be used to avoid or minimize any adverse effects during construction to surface waters.

The following BMPs will be incorporated into the project:

- Implement appropriate measures to prevent debris, soil, rock, or other material from entering the water.
- Use a water truck or other appropriate measures to control dust on haul roads, construction areas, and stockpiles.
- Properly dispose of oil or other liquids.
- Fuel and maintain vehicles in a specified area that is designed to capture spills. This area cannot be near any ditch, stream, or other body of water or feature that may convey water to a nearby body of water.
- Fuels and hazardous materials will not be stored on site.
- Inspect and maintain vehicles and equipment to prevent the dripping of oil or other fluids.
- Schedule construction to avoid the rainy season as much as possible. Ground disturbance activities are expected to begin in the summer of 2014. If rains are

forecasted during construction, additional erosion and sedimentation control measures will be implemented.

- Maintain sediment and erosion control measures during construction. Inspect the control measures before, during, and after a rain event.
- Train construction workers in storm water pollution prevention practices.
- Revegetate disturbed areas in a timely manner to control erosion.

Since no significant adverse affects to groundwater or surface water resources are anticipated, no additional mitigation measures are required. Any effects to water quality will be temporary, and BMPs and proposed mitigation measures will further reduce impacts.

Traffic and circulation

Site L7

Construction vehicles will use US Highway 50, turning north onto Howe Avenue and west onto Fair Oaks Boulevard, crossing the American River using the H Street Bridge. Construction vehicles will then turn right onto Camellia Avenue to enter the construction site from the Sacramento Central Seventh-Day Adventist Church parking lot. After on-loading or off-loading the material, construction vehicles will exit onto Camellia Avenue and turn right onto H Street, turning left at Carlson Drive and left again onto J Street. From J Street, construction vehicles will travel the Fair Oaks/ J Street Bridge to Howe Avenue and back to US Highway 50.

Site L10

Construction vehicles will use US Highway 50, turning north onto Howe Avenue and exiting toward the American River Access ramp at La Riviera Drive. Construction vehicles will then either enter the staging area under the Howe Avenue Bridge or access the levee crown using the American River Access ramp. After on-loading or off-loading the material, the construction vehicles will exit the project area to travel west on La Riviera Drive, continuing south to the intersection with College Town Drive. Construction vehicles will then turn east onto Howe Avenue to continue onto US Highway 50. Alternatively, construction vehicles could turn west onto College Town Drive and south on Hornet Drive to access US Highway 50.

Site R3A

Construction vehicles will use either Business 80 or Highway 160 to exit on Exposition Boulevard. From Exposition Boulevard, construction vehicles will turn south onto Tribute Road

and access the site using regional roadways between the project area and the staging area. After on-loading or off-loading the material, the construction vehicles will exit the project area using Tribute Road back toward Exposition Boulevard and Business 80.

Site R7

Construction vehicles will enter the American River Parkway using the Spanos Court access road and drive on the levee crown maintenance road south to the project site. After on-loading or off-loading the material, the haul trucks will exit the project area using the levee access road to the south of Fair Oaks Boulevard (Plate 5). Trucks will only exit right onto this access road, travelling northeast on Fair Oaks Boulevard to turn right on Howe Avenue and returning to US Highway 50.

Construction at Sites L7, L10, R3A, and R7 will impact traffic conditions on Fair Oaks Boulevard, Camellia Avenue, J Street, University Avenue, American River Drive, La Riviera Drive, College Town Drive, and Howe Avenue due to the presence of construction vehicles on small residential streets, as well as the addition of construction vehicles onto congested roadways. During the height of construction, there may be as many as 20 haul truck round trips per day at each site. The addition of 20 haul trucks on small residential streets would not be a substantial increase in traffic and would therefore be less than significant.

Mitigation Measures

The contractor will be required to develop a Traffic Control Plan, which will be reviewed and approved by CSUS, the City of Sacramento, Sacramento County, CalTrans, and USACE prior to construction. This plan will include the following measures:

- Do not permit construction vehicles to block any roadways or private driveways.
- Provide access for emergency vehicles at all times.
- Select haul routes to avoid schools, parks, and high pedestrian use areas when possible. Crossing guards provided by the contractor will be used when truck trips coincide with schools hours and when haul routes cross student travel path.
- Obey all speed limits, traffic laws, and transportation regulations during construction. If speed limits are not posted, construction vehicles would not exceed 15 miles per hour on unpaved levee roads.
- Use signs and flagmen, as needed, to alert motorists, bicyclists, and pedestrians to avoid conflict with construction vehicles or equipment.

- Flagmen will be used at each roadway that crosses the levee to safely circulate traffic through the construction site.
- Use separate entrances and exits to the construction site when possible.
- Construction employee parking will be restricted to the designated staging areas.
- No road closures are anticipated; however, in the event that road closures are necessary, local agencies and affected organizations will be notified prior to construction.
- Closure of levee roads, construction sites, and public access areas for construction use will be clearly fenced and delineated with appropriate closure signage.

The 30-day public review has been conducted, and copies of this draft EA/IS were distributed to local libraries and agencies, as well as upon request to interested parties and individuals. Additional public outreach (including public meetings) to inform the local residents, businesses, and media of the type of construction, the duration of construction, and expected impacts will be conducted at least two weeks prior to mobilization for construction. Hours of construction will be clearly marked with signs on or adjacent to the project sites prior to construction. The proposed mitigation measures will reduce the effects on traffic and circulation to less than significant.

Public Utilities and Services

Site L7

More than 14 utilities cross the work area at Site L7. Two power poles located just upstream of the H Street Bridge support overhead power, cable, and telephone lines. Additionally, fiber optic lines, water lines, and power lines are located along the bridge in existing conduits.

Site L10

More than 16 utilities cross the L10 project area. Most of the utilities in this area are electrical lines associated with the power towers located on the waterside toe of the site. Additionally, storm drain pipes associated with Sump 91.

Site R3A

More than 22 utilities cross the R3A project site, including but not limited to sewer mains, storm drain pipes, electrical lines, and telephone lines.

Site R7

More than 12 utilities cross the R7 project area, including fiber optic lines, power cables, sewer mains, and storm drain pipes. Many of the utilities cross the H Street Bridge to cross the L7 project site area.

Mitigation Measures

Prior to initiating ground disturbing activities, the contractor will coordinate with Underground Service Alert to insure that all underground utilities are identified and marked. All utilities will be protected in place. No disruption of service is expected. If for any reason utilities will require a disruption in service, residents and businesses within the potentially affected area will be given notice of the anticipated time and duration of the disruption of service before the start of construction.

Noise and Vibration

Construction activity noise and vibration levels at and near the construction areas would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Construction-related material haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. Construction would be short-term in nature and would not involve high-effect activities like pile-driving; however, impacts could be considered significant unless mitigated.

Mitigation Measures

The following measures will be implemented to reduce the effects of the noise as much as possible:

- Construction times would be limited in accordance with the City of Sacramento Noise Ordinance exemption for construction (City of Sacramento, 2009). Construction at Site L7 will occur between the hours of 7:00 a.m. to 6:00 p.m., Monday through Saturday, and 9:00 a.m. through 6:00 p.m. on Sunday. Construction at Site L10 will occur between the hours of 7:00 a.m. through 4:00 p.m., Monday through Saturday, and 9:00 a.m. through 4:00 p.m. on Sunday. Construction at Sites R3A and R7 will occur between the hours of 7:00 a.m. to 6:00 p.m., Monday through Saturday, and 9:00 a.m. to 6:00 p.m. on Sunday.
- Construction equipment noise will be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools.

- All equipment, haul trucks, and worker vehicles will be turned off when not in use for more than 30 minutes.
- Residences and businesses will be notified about the type and schedule of construction at least two weeks prior to mobilization.
- The contractor would measure surface velocity waves caused by equipment, monitoring vibration up to a threshold value established and approved in writing by USACE. There would be no vibration exceeding 0.2 inch per second.

Public meetings will be scheduled with affected residents to ensure they are informed of the project schedule, its potential effects, and policies regarding reimbursement. Due to the short nature of the construction and the proposed mitigation measures, the impact after mitigation is less than significant.

Aesthetics/Visual Resources

Construction of the levee repairs at all sites will temporarily affect the aesthetics in the project area. Short-term effects will include the temporary removal of the levee crown and the construction itself, temporary alterations to the proposed staging areas and the presence and activities of construction equipment and workers in the project areas. There will also be temporary changes in vegetation structure as the construction will involve the removal and re-establishment of vegetation. These changes could be considered significant unless mitigated.

Mitigation Measures

During construction, impacts to the aesthetic value of the American River Parkway will be reduced as much as feasible. Construction equipment and materials will be confined to the project areas and staging areas. Trees and shrubs will be protected in place, allowing natural shielding of the construction activities to users within the American River Parkway.

After completion of construction, the site will be restored to preconstruction conditions. The reconstructed levee would remain consistent with the preconstruction visual resources of the project area and therefore will not significantly change the existing visual characteristics of the area. All areas affected by the project will be revegetated and restored to remain consistent with preconstruction conditions. Any effects to visual resources will be temporary, and the BMPs and the mitigation measures listed in Vegetation and Wildlife, Air Quality, and Water Resources and Quality will reduce impacts to less than significant.

Cultural Resources

A records and literature search was conducted and an archaeological field survey was conducted by qualified USACE archaeologists. USACE has initiated consultation with the California State Historic Preservation Officer (SHPO) and potentially interested Native American people and groups. Aside from the levees, no cultural resources were encountered within the area of potential effects.

A letter was sent to SHPO on July 17, 2013 requesting their concurrence with a finding of no adverse effects to historic properties in accordance with 36 CFR 800.5(d)(1). A letter from the SHPO dated October 15, 2013 concurred with this finding. USACE is in full compliance with this act.

USACE archaeologists make every effort to identify cultural resources that occur in the APE. However, the possibility still exists that potentially significant unidentified cultural remains could be encountered during project construction. If buried or otherwise obscured cultural resources are encountered during construction, activities in the area of the find would be halted, and a qualified archeologist will be consulted immediately to evaluate the find.

Should any potentially significant cultural resources be discovered, compliance with 36 CFR 800.13(b), "Discoveries without prior planning," will be implemented. Data recovery or other mitigation measures could be necessary to mitigate adverse effects to significant properties. Implementation of Mitigation Measure CUL-MM-1, Compliance With National Historic Preservation Act of 1966, Historic and Archeological Resources Protection Act, and Protection of Historic Properties, will reduce this effect to less than significant. A letter will be sent to SHPO requesting their concurrence with a finding of no adverse effect in accordance with 36 CFR 800.4(c)(2).

Hazardous, Toxic, and Radioactive Waste

Construction at Sites L7, L10, R3A, and R7 involves jet grout construction. One of the constituents associated with jet grout is cement. The cement will be delivered in large bags, which will be offloaded at the batch plant for mixing. The cement is a hazardous material, characterized as a caustic. As such, it would be stored and handled in compliance with all Federal, State, and local regulations, as well as in adherence to OSHA worker safety standards. Although design and construction considerations have significantly minimized the risk of impacts to the environment, spilled or improperly contained oil or fuels from construction equipment could result in soil contamination at the work or staging areas.

Mitigation Measures

The contractor would be required to properly store and dispose of any hazardous waste generated at the site. The contractor would be responsible for developing and implementing a SWPPP. All applicable spill prevention measures associated with the batch plant would be implemented, as well as measures to avoid the cement mixture or jet grout spoils from entering the American River. Any potential effects would be minimized through avoidance, minimization, and mitigation measures proposed under Air Quality and Water Quality and Resources. All spoil material or cuttings would be properly dried before being characterized and disposed of at a licensed regulated facility.

Identification, characterization, segregation, transportation, and disposal of all hazardous wastes would be conducted in accordance with all applicable Federal, State, and local regulations to ensure safety to workers and the public against exposure and contamination. These regulations and BMPs would reduce impacts to less than significant.

CUMULATIVE EFFECTS

Mitigation measures, BMP's, minimization practices, and project coordination with nearby will reduce possible impacts to less than significant.

Findings

Based on the information in the Environmental Assessment and Initial Study for the American River Watershed Common Features Project Lower American River Features as Modified by the Water Resources Development Act of 1996, Sites L7, L10, R3A, and R7 and the entire record, the Central Valley Flood Protection Board finds that although the Project could have a significant impact on the environment, mitigation measures have been incorporated into the Project that reduce these impacts to less than significant.

By: _____ Date: _____
William Edgar
President

By: _____ Date: _____
Jane Dolan

Secretary

MITIGATION, MONITORING, AND REPORTING PLAN

AMERICAN RIVER WATERSHED COMMON FEATURES

AS MODIFIED BY WRDA 1996

SITES L7, L10, R3A, and R7

SACRAMENTO COUNTY, CALIFORNIA

This mitigation monitoring or reporting plan (MMRP) is designed to fulfill Section 21081.6 (a) of the California Environmental Quality Act (CEQA). Which requires public agencies to adopt a reporting or monitoring program whenever a project or program is approved that includes mitigation measures identified in an environmental document for which the agency makes a finding pursuant to CEQA Section 21081 (a) (1). The mitigation measures and strategies described below and in the attached table are to be used to avoid, minimize, or reduce any potentially significant environmental impacts.

The MMRP table includes the following:

- Section and Impacts – identifies the issue area section of the EA/IS and corresponding impact.
- Mitigation Measures – lists the adopted mitigation measures from the EA/IS.
- Implementation Timing – identifies the timing of implementation of the action described in the mitigation measures.
- Responsible for Implementation – identifies the agency/party responsible for implementing the actions described in the mitigation measures.
- Responsible for Monitoring/Reporting Action – identifies the agency/party responsible for monitoring implementation of the actions described in the mitigation measures. Verification will be carried-out during the project and an MMRP completion report will be submitted to the CVFPB staff upon completion of the project.

Section and Impacts	Mitigation Measures	Implementation Timing	Responsible for Mitigation	Responsible for Monitoring/ Reporting Action
3.2.1 Recreation L7 Recreational trail under H Street Bridge will be closed during construction Construction vehicles may use the recreational trail from Sacramento State University to the H Street Bridge. Pipes containing jet grout, air, water, and waste materials will be placed along the pedestrian walkway- narrowing it by approximately 12 inches. L10 Temporary closures of recreational trail under Howe Avenue Bridge and access points on and off bridge. Construction vehicles will utilize access from La Riviera Drive. R3A	L7 Informational and detour signage would be posted upstream and downstream of the access points. Information regarding the closures and detours would be posted at least two weeks prior to construction. A temporary bike lane will be created with K-rail (or similar). The pipes would be placed inside steel conduits that will be attached to the bridge railings with steel strap, a plywood barrier would be placed between the conduits and the pedestrian walkway. Walkway will remain ADA compliant but cyclists will be required to walk bikes. L10 Informational and detour signage would be posted upstream and downstream of the access points. Information regarding the closures and detours would be posted at least two weeks prior to construction. Traffic control would be utilized in order to maintain public safety.	D,P,C	USACE	CVFPB Monitor measures applicable to site: Verify that informational and detour signage is in place Verify installation of bike lane Verify grout line in encased in steel pipe. Verify barrier is strapped to bridge and blocked with plywood Verify that the

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Construction vehicles may use access ramp leading to the American River Recreational Trail. R7 Intermittent closure of access points to the American River Bike Trail at H Street Bridge. Pipes containing jet grout, air, water, and waste materials will be placed along the pedestrian walkway- narrowing it by approximately 12 inches.	R3A Traffic control would be utilized in order to maintain public safety. R7 Informational and detour signage would be posted upstream and downstream of the access points. Information regarding the closures and detours would be posted at least two weeks prior to construction. A temporary bike lane will be created with K-rail (or similar). The pipes would be placed inside steel conduits that will be attached to the bridge railings with steel strap, a plywood barrier would be placed between the conduits and the pedestrian walkway. Walkway will remain ADA compliant but cyclists will be required to walk bikes.			residents, bicycle groups, and local businesses have been informed
3.2.2 Vegetation and Wildlife Construction activities may require minimal trimming of native oak and other large trees adjacent to the project areas. Temporary displacement of local wildlife populations due to noise and increased human presence is likely to occur during construction activities. Some trees and shrubs might be removed as a part of this project.	Trees and shrubs that must be removed as part of the project will be identified and removed between the months of November and February in order to reduce impacts to nesting birds. Trimming or removal will be conducted under the observation or direction of a qualified arborist. Trees that must be removed will either be replaced with like species or with native tree species, such as valley oaks and sycamores, which will enhance the quality of the environment.	P, C	USACE	CVFPB Verify placement of security fencing Verify supervision by certified arborist

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	Grasses removed due to construction activities would be restored through reseeding. The reseeding mix would consist of native vegetation including California brome (*Bromus carinatus*), small fescue (*Vulpina microstachys*), and creeping wildrye (*Leymus triticoides*). Reseeded areas would be periodically monitored until 85% vegetation cover is achieved, or until May 1 of the year following the reseeding. If the proposed staging area on the waterside toe of R7 is used, the restoration of the native vegetation mitigation site would be required. During mobilization and set-up activities, the first 12 inches of topsoil of the areas to be excavated would be segregated and stockpiled to the extent feasible in order to return the topsoil to the restoration site.			Verify tree replacement Verify that areas are reseeded and appropriate vegetation coverage is achieved Verify that topsoil stockpiled and reused
3.2.3 Fisheries There is potential for fugitive dust, fuel, and construction runoff to enter the American River, which has the potential to affect fish habitat.	No materials would be disposed of into the American River. Water trucks would be used for dust suppression along all areas of disturbed soil and along the haul routes; trucks would be monitored so over watering and runoff does not occur. The contractor would not be allowed to store fuels, lubricants or other potential hazardous substances on site. If equipment is to be refueled on site, the contractor would take measures to avoid and contain any spills.	P, C	USACE	CVFPB Verify that dust and runoff control measures are implemented Verify grout line

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If the Site R7 staging area is used for the batch plant and drying bed area, it would be necessary to pipe jet grout and waste material across the H Street Bridge. The pipes would be placed along the pedestrian walkway on the south side of the bridge. Any material spilled from the pipe while on the bridge would flow directly into the American River. If a large amount of material was spilled, the spilled material and following clean-up activities could affect Essential Fish Habitat (EFH) and fisheries.	If material is piped over the American River, the pipelines would be placed in two steel conduits that would contain any potential leaks. The conduits would be placed along the recreational path on the south side of the Fair Oaks Boulevard/J Street Bridge. The jet grout system would be monitored for fluctuations in pressure (signifying a leak). Additionally, the jet grout system is equipped with an automatic shut-off system that would activate with large fluctuations in pressure. Any material that escapes from the pipeline into the steel conduits would flow into the staging areas where it would be contained and cleaned up. If any leaks occur from the pipes into the conduits, construction would stop until the pipes are repaired or replaced. Additional containment systems are under discussion.			is encased in steel pipe. Verify barrier is strapped to bridge and blocked with plywood Verify that staging area is capable of containing spills/grout leaks
3.2.4 Special Status Species The following Federal and State listed species were identified as having the potential to occur in the vicinity of the project areas and could be impacted by construction activities: • Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (VELB) (Federal Threatened) and critical habitat; • White-tailed kite (*Elanus leucurus*) (CDFG Fully	Prior to ground disturbance, all on-site construction personnel would be given instruction regarding the presence of sensitive species and the importance of avoiding these species and their habitats. Additional avoidance, minimization, and mitigation measures would follow the recommendations provided by USFWS under the Fish and Wildlife Coordination Act, including but not limited to: Avoid impacts to trees and shrubs. Any trees or shrubs removed would be replaced on-site with container plantings. These plantings would be monitored for 5 years or until they are established and self-sustaining.	P, C	USACE	CVFPB Verify setback distances Verify that

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Protected); • Swainson's hawk (*Buteo swainsoni*) (State Threatened); • Cooper's hawk (*Accipiter cooperii*) (State Species of Concern); • Bank swallow (*Riparia riparia*) (State Threatened); • Central Valley steelhead (*Oncorhynchus mykiss*) (Federally Threatened) and critical habitat; • Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*) (Federally and State Endangered), Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*), and critical habitat.	Avoid impacts to nesting migratory birds by conducting pre-construction surveys for active nests near the work areas. Work activity around active nests would be avoided until the young have fledged. Minimize project impacts by reseeding all disturbed areas at the completion of construction. Contact CDFW regarding possible effects of the project on State-listed species. <u>Valley Elderberry Longhorn Beetle</u>. To avoid potential take of the VELB, the following measures taken from USFWS's "Conservation Guidelines for the Valley Elderberry Longhorn Beetle," July 1999 would be incorporated into the project: A minimum setback of 100 feet from the dripline of all elderberry shrubs would be established, if possible. If the 100 foot minimum buffer zone is not possible, the next maximum distance allowable would be established. This area would be fenced, flagged and maintained during construction. Environmental awareness training would be conducted for all workers before they begin work. The training would include status, the need to avoid adversely affecting the elderberry shrubs, avoidance areas and measures taken by the workers during construction, and contact information.			environmental awareness training has been implemented Verify tree or shrub replacement Verify sign placement Verify installation of silt fences Verify proper avoidance and

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	Dust suppression measures would be used and a biological monitor would provide instruction on establishing the buffer zones for the shrubs. Signs would be placed every 50 feet along the edge of the elderberry buffer zones. The signs would include: "This area is the habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be readable from a distance of 20 feet and would be maintained during construction. Remove and transplant two elderberry shrubs located in the staging area of Site L10 to the compensation site located at Cal Expo. Compensation would require the planting of 13 elderberry seedlings and 13 associated native plants on 0.11 acres. Monitor survival of elderberry and associated plantings over a period of either ten (10) consecutive years or for seven (7) years over a 15-year period, as prescribed in the USFWS "Conservation Guidelines for the Valley Elderberry Longhorn Beetle" Report survival success in annual monitoring reports <u>White-tailed Kite, Swainson's Hawk, and Cooper's</u>			minimization measures are implemented Verify proper avoidance and minimization measures are implemented Verify monitoring and surveys Review monitoring reports

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	Hawk. Prior to the onset of construction, biological surveys for the presence of nesting raptors (white-tailed kites, Swainson's hawks, and Cooper's hawks) would be conducted within one-half mile of the proposed construction area. If a survey determines that a nesting pair is present, USACE would coordinate with CDFW. To avoid potential effects to nesting raptors, CDFW typically requires the avoidance of nesting sites during construction activities and/or avoiding construction during the nesting season. If construction activities are determined to be necessary during the nesting season, then an on-site biologist/monitor experienced with raptor behavior would monitor the nest while construction-related activities are taking place. If raptors exhibit agitated behavior in response to construction-related activities, the biological monitor would have the authority to stop work and would consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Bank Swallow. Prior to the onset of construction, biological surveys for the presence of bank swallows would be conducted within one-half mile of the proposed construction areas. Two weeks prior to the onset of construction, biological surveys would be conducted in order to confirm the results from the previous surveys. If a survey determines that a nesting colony is nearby, USACE would coordinate with CDFG and the proper avoidance and minimization measures			Verify that mitigation measures proposed under Air Quality (Section 3.2.5) and Water Quality and Resources (Section 3.2.7) are implemented Verify approval of the SWPPP and SPCP by USACE

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	would be implemented <u>Central Valley Steelhead, Central Valley Spring-run Chinook Salmon, and Sacramento River Winter-Run Chinook Salmon</u>. Construction of levee improvements may potentially indirectly affect the Central Valley steelhead, the Central Valley winter-run Chinook salmon, or their associated critical habitats from fugitive dust and construction runoff to the American River. No in-water work would occur. No riparian habitat or SRA would be removed. No trees at, or near, the banks of the river would be removed. The potential for fugitive dust and construction runoff to enter the water would be minimized through mitigation measures proposed under Air Quality and Water Quality and Resources through sediment control, erosion control, and dust abatement. The contractor would be required to develop and submit a Storm Water Pollution Prevention Plan (SWPPP) to minimize the potential for soil or other contaminants to enter the river. The contractor would also be required to develop and submit a Spill Preventions and Countermeasure Plan (SPCP) prior to initiating construction activities. The SWPPP and SPCP must be approved by USACE.			Verify measures identified in the SWPPP and SPCP are being implemented
3.2.5 Air Quality Combustion emissions would result from the use of construction equipment, truck haul trips to and from the borrow sites, and worker vehicle trips to and from the construction site. In order to	Maintain properly functioning emission control devices on all vehicles and equipment. Use diesel-fueled equipment manufactured in 2003 or later, or retrofit equipment manufactured	D, P, C	USACE	CVFPB Verify that USACE is implementing air

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achieve the required reductions in emissions, the following construction mitigation procedures would be followed, in accordance to the SMAQMD Recommended Mitigation for Reducing Emissions from Heavy-Duty Construction Vehicles.	prior to 2003 with diesel oxidation catalysts; use low-emission diesel products, alternative fuels, after-treatment products, and/or other options as they become available. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) would be repaired immediately, and USACE and SMAQMD would be notified within 48 hours of identification of non-compliant equipment. Any remaining emissions over the NOx threshold would be reduced to zero through the payment of a mitigation fee. The cost of reducing one ton of NOx as of July 1, 2013, is $17,460 ($8.73/lb).The contractor would be responsible for payment of any required mitigation and administrative fees. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the contractor would provide SMAQMD with the anticipated construction timeline including start date, and name and phone number of the project manager, and on-site foreman. SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Full mitigation program language is located in Appendix B. Implementation of the BMPs listed below would reduce air quality degradation caused by dust and other contaminants: • During construction, implement all appropriate dust control measures, such			quality mitigation measures Verify that the contractor paid the required mitigation fees Verify that the contractor provided SMAQMD the required information to implement inspection program Verify that BMPs were implemented

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	as tarps or covers on dirt piles, in a timely and effective manner. • Periodically water all construction areas having vehicle traffic, including unpaved areas, to reduce generation of dust. Application of water would not be excessive or result in runoff into storm drains. • Sweep paved streets adjacent to construction sites, as necessary, at the end of each day to remove excessive accumulations of soil or dust. • Cover all trucks hauling dirt, sand, soil, or other loose material, or maintain at least 2 feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code Section 23114. This provision would be enforced by local law enforcement agencies. • Revegetate or pave areas cleared by construction in a timely manner to control fugitive dust.			
3.2.6 Climate Change The proposed construction would use large, diesel fueled construction vehicles during all phases of the project at all	BMPs and the standard construction avoidance, minimization, and mitigation measures as	P,C	USACE	CVFPB Verify that BMP's

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four sites. The partial degrade of the levee crown would result in emissions from bulldozers and graders, as well as emissions from the haul trucks used to dispose of material. The construction of the jet grout cutoff wall would result in emissions from the jet grout equipment and haul trucks, as well as the diesel powered mixers required for the mixing of the cement and bentonite. Diesel-powered cement mixers, pavers, and haul trucks for borrow materials would be used for the re-construction of the levee crown. In addition to the construction vehicles, mixers, and haul trucks involved in the actual construction of the project, there would also be GHG emissions from the workforce vehicles. Workers would commute from their homes to the construction site and park in the staging area.	recommended in the SMAQMD's "Guidance for Construction GHG Emissions Reductions" would be implemented to further reduce GHG emissions. Additional measures are included in Appendix B and Section 3.2.5 . • Minimize the idling time of construction equipment to no more than three minutes or shutting equipment off when not in use; • Maintain all construction equipment in proper working condition; • Encourage carpools, shuttle vans, and/or alternative modes of transportation for construction worker commutes; • Use locally sourced or recycled materials for construction materials as much as practicable; and • Develop a plan to efficiently use water for adequate dust control.			recommended in the SMAQMD's "Guidance for Construction GHG Emissions Reductions" are being implemented
3.2.7 Water Resources and Quality There is the potential for sediment to escape the site and enter the American River during construction, impacting water quality	Sediment control measures would be installed around the construction sites. No materials would be disposed into the American River. The contractor would be required to obtain a National Pollution Discharge Elimination System permit from the Regional Water Quality Control	D, P, C	USACE	CVFPB Verify sediment control measures are in place

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	Board (RWQCB), Central Valley Region. As part of the permit, the contractor would be required to prepare a SWPPP and a SPCP prior to initiating construction activities, identifying BMPs to be used to avoid or minimize any adverse effects during construction to surface waters. The following BMPs would be incorporated into the project: • Implement appropriate measures to prevent debris, soil, rock, or other material from entering the water. Use a water truck or other appropriate measures to control dust on haul roads, construction areas, and stockpiles. • Properly dispose of oil or other liquids. • Fuel and maintain vehicles in a specified area that is designed to capture spills. This area cannot be near any ditch, stream, or other body of water or feature that may convey water to a nearby body of water. • Fuels and hazardous materials would not be stored on site. • Inspect and maintain vehicles and equipment to prevent the dripping of oil or other fluids.			Verify that the NPDES permit was obtained Verify that the SWPPP and SPCP has been prepared Verify grout line in encased in steel pipe. Verify barrier is strapped to bridge and blocked with plywood Verify that staging area is capable of containing spills/grout leaks

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	• Schedule construction to avoid the rainy season as much as possible. Ground disturbance activities are expected to begin in the summer of 2014. If rains are forecasted during construction, additional erosion and sedimentation control measures would be implemented. • Maintain sediment and erosion control measures during construction. Inspect the control measures before, during, and after a rain event. • Train construction workers in storm water pollution prevention practices. • Revegetate disturbed areas in a timely manner to control erosion.			
If proposed staging area for Site R7 is used during the construction of Site L7. If the Site R7 staging area is used for the batch plant and drying bed area, it would be necessary to pipe jet grout, water, air, and waste material across the H Street Bridge. If the proposed multiple use staging area is utilized, the pipes	If the proposed multiple use staging area and associated jet grout material conduit across the American River is used, the pipelines would be placed in two steel conduits that would contain any potential leaks. The conduits would be placed along the recreational path on the south side of the H Street Bridge. The jet grout system would be monitored for fluctuations in pressure (signifying a leak). Additionally, the jet grout system is equipped with an automatic shut-off system that would activate with large fluctuations in pressure. Any material that escapes from the			

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would be placed along the pedestrian walkway on the south side of the bridge.	pipeline into the steel conduits would flow into the staging areas where it would be contained and cleaned up. If any leaks occur from the pipes into the conduits, construction would stop until the pipes are repaired or replaced. Additional containment systems are under discussion.			
3.2.8 Traffic and Circulation Construction at Sites L7, L10, R3A and R7 would temporarily affect local residential roads and major urban connector roads that would be used as haul routes during construction. The type and duration of construction vehicles on the roadways would vary depending on the time of day and the type of materials being hauled. Haul trucks would cause a temporary increase in traffic volume and may reduce traffic speeds on local residential roads. Increases in traffic volume on these roadways would return to previous levels at the completion of construction. During construction, haul trucks would travel between the construction site and the commercial disposal site. During the height of construction, there may be as many as 20 haul truck round trips per day at each site.	The contractor would be required to develop a Traffic Control Plan, which would be reviewed and approved by CSUS, the City of Sacramento, Sacramento County, CalTrans, and USACE prior to construction. This plan would include the following measures: • Do not permit construction vehicles to block any roadways or private driveways. • Provide access for emergency vehicles at all times. • Select haul routes to avoid schools, parks, and high pedestrian use areas when possible. Crossing guards provided by the contractor would be used when truck trips coincide with schools hours and when haul routes cross student travel path. • Obey all speed limits, traffic laws, and transportation regulations during construction. If speed limits are not posted, construction vehicles would not	D, P, C	USACE	CVFPB Verify that the Traffic Control Plan is approved prior to construction

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	• Do not exceed 15 miles per hour on unpaved levee roads. • Use signs and flagmen, as needed, to alert motorists, bicyclists, and pedestrians to avoid conflict with construction vehicles or equipment. • Flagmen would be used at each roadway that crosses the levee to safely circulate traffic through the construction site. • Use separate entrances and exits to the construction site when possible. • Construction employee parking would be restricted to the designated staging areas. • Closure of levee roads, construction sites, and public access areas for construction use would be clearly fenced and delineated with appropriate closure signage. Public outreach (including public meetings) to inform the local residents, businesses, and media of the type of construction, the duration of construction, and expected impacts would be conducted at least two weeks prior to mobilization for construction.			Verify public outreach
3.2.9 Public Utilities and Services				

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Damage to public utility and service facilities, pipelines, conduits, or power lines during construction could potentially disrupt services.	Prior to initiating ground disturbing activities, the contractor would coordinate with Underground Service Alert to insure that all underground utilities are identified and marked. Utilities would be protected in place. If any utilities require disruption of service, residents and businesses within the potentially affected area would be given notice of the anticipated time and duration of the disruption of service before the start of construction.	P, C	USACE	CVFPB Verify that utilities are marked and protected in place. Verify that notices are given if power is interrupted.
3.2.10 Noise and Vibration Residents, wildlife, and recreationists would experience noise from construction vehicle motors and construction activities. Construction activities associated with the project may result in some minor amount of ground vibration.	The following measures would be implemented to reduce the adverse effects on noise as much as possible: • Construction times would be limited in accordance with the City of Sacramento Noise Ordinance exemption for construction (City of Sacramento, 2009). Construction at Site L7 would occur between the hours of 7:00 a.m. to 6:00 p.m., Monday through Saturday, and 9:00 a.m. through 6:00 p.m. on Sunday. Construction at Site L10 would occur between the hours of 7:00 a.m. through 4:00 p.m., Monday through Saturday, and 9:00 a.m. through 4:00 p.m. on Sunday. Construction at Sites R3A and R7 would occur between the hours of 7:00 a.m. to 6:00 p.m., Monday through Saturday, and 9:00 a.m. to 6:00 p.m. on	D, P, C	USACE	CVFPB Verify that vibration monitor is in place Verify notification of businesses and residences

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	Sunday. • Construction equipment noise would be minimized during project construction by muffling and shielding intakes and exhaust on construction equipment (per the manufacturer's specifications) and by shrouding or shielding impact tools. • All equipment, haul trucks, and worker vehicles would be turned off when not in use for more than 3 minutes. • Residences and businesses would be notified about the type and schedule of construction at least two weeks prior to mobilization. • Contractor will measure surface velocity waves caused by equipment, monitoring vibration up to a threshold value established and approved by USACE.			
3.2.11 Aesthetics/Visual Resources Construction of the levee repairs at all sites would temporarily affect the aesthetics in the project area. Short-term effects would include the temporary removal of the levee crown and the construction itself, temporary alterations to the proposed staging areas and the presence and activities of construction equipment and workers in	• Confine construction equipment and materials to the project areas and staging areas. • Protect trees and shrubs in place, when feasible, to allow the natural shielding of the construction activities to users within the American River Parkway. After completion of construction: • Revegetate and restore all areas affected	D, P, C	USACE	CVFPB Verify placement of construction equipment and materials Verify tree/shrub protection Verify

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the project areas. There would also be temporary changes in vegetation structure as the construction would involve the removal and re-establishment of vegetation.	by the project to preconstruction conditions.			revegetation and restoration
3.2.12 Cultural Resources The possibility exists that potentially significant unidentified cultural remains could be encountered during project construction	If buried or otherwise obscured cultural resources are encountered during construction, activities in the area of the find would be halted, and a qualified archeologist would be consulted immediately to evaluate the find. Should any potentially significant cultural resources be discovered, compliance with 36 CFR 800.13(b), "Discoveries without prior planning," would be implemented.	C	USACE	CVFPB Verify that activities have been halted if cultural resources are discovered

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Notice of Determination

Appendix D

To:

☐ Office of Planning and Research

For U.S. Mail: P.O. Box 3044, Sacramento, CA 95812-3044

Street Address: 1400 Tenth St., Sacramento, CA 95814

☐ County Clerk

County of: _____

Address: _____

_____

From:

Public Agency: _____

Address: _____

_____

Contact: _____

Phone: _____

Lead Agency (if different from above):

_____

Address: _____

_____

Contact: _____

Phone: _____

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): _____

Project Title: _____

Project Location (include county): _____

Project Description:

This is to advise that the _____ has approved the above described project on
☐ Lead Agency or ☐ Responsible Agency

_____ and has made the following determinations regarding the above described project:
(Date)

1. The project [☐ will ☐ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☐ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☐ were ☐ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☐ was ☐ was not] adopted for this project.
5. A statement of Overriding Considerations [☐ was ☐ was not] adopted for this project.
6. Findings [☐ were ☐ were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at: _____

Signature (Public Agency) _____ Title _____

Date _____ Date Received for filing at OPR _____

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

Revised 2005