RECLAMATION

Managing Water in the West

FINDING OF NO SIGNIFICANT IMPACT

Folsom Dam Safety and Flood Damage Reduction Project – Right Bank Stabilization

FONSI-15-02-CCAO

Recommended by: _____ Date: 2/6/15

Carolyn Bragg
Natural Resources Specialist
Central California Area Office

Concurred by: _____ Date: 2/6/15

Elizabeth Vasquez
Chief, Resources Management Division
Central California Area Office

Approved by: _____ Date: 2/9/15

Drew Lessard
Area Manager
Central California Area Office

U.S. Department of the Interior
Bureau of Reclamation
Central California Area Office

February 2015

Introduction

In accordance with section 102(2)(c) of the National Environmental Policy Act of 1969, as amended, the Bureau of Reclamation (Reclamation) has determined that providing a Land Use Agreement (LUA) to the U.S. Army Corps of Engineers (Corps) for the purposes of utilizing Reclamation lands for their proposed *Folsom Dam Safety and Flood Damage Reduction Project – Right Bank Stabilization* will not significantly affect the quality of the human environment and an Environmental Impact Statement is not required.

The Folsom Dam Safety and Flood Damage Reduction Project, is a cooperative effort between Reclamation, Corps, the State of California Central Valley Flood Protection Board (CVFPB), and the Sacramento Area Flood Control Agency (SAFCA). As part of the Folsom Dam Safety and Flood Damage Reduction Project, the Corps, along with the CVFPB and SAFCA, proposes to install approximately 40 rock bolts along 400 feet of the lower right bank slope of the American River to stabilize a large rock mass. In addition, a 20-foot wide access road and platform would be constructed to allow for mobilization of the required construction equipment.

The Corps is the federal lead agency for this action. Reclamation's Finding of No Significant Impact (FONSI) is supported by the Corps Final Supplemental Environmental Assessment/Environmental Impact Report prepared for the *Folsom Dam Safety and Flood Damage Reduction Project – Right Bank Stabilization,* which is hereby incorporated by reference. The potential environmental effects have been coordinated with the U.S. Fish and Wildlife Service, California State Historic Preservation Officer, the Department of Water Resources, CVFPB, and SAFCA.

The material contained in the referenced document adequately describes and discloses all relevant issues and addresses potential impacts associated with Reclamation's action. The information in the referenced report effectively evaluates and supports Reclamation's FONSI determinations for issuing a LUA to the Corps for their actions on Reclamation lands.

Proposed Action

Reclamation proposes to provide a LUA to the Corps for the purposes of utilizing Reclamation lands for their proposed *Folsom Dam Safety and Flood Damage Reduction Project – Right Bank Stabilization.*

Findings

Reclamation's action of providing a LUA to the Corps for the purposes of utilizing Reclamation lands would have a de minimus effect, including direct, indirect and cumulatively, to environmental resources. All activities associated with the Corps proposed *Folsom Dam Safety and Flood Damage Reduction Project – Right Bank Stabilization* will be the responsibility of the Corps. No significant impacts on environmental resources would result from the Corps proposed project. Best management practices, avoidance protocols, and minimization and mitigation measures would be implemented by the Corps during all associated Corps action's to reduce any

potential effects to environmental resources. In addition to resources analyzed in the referenced document, Reclamation's action does not have a potential to affect Indian Trust Assets nor are there any known Indian sacred sites identified within the footprint of the Corps proposed project area. There will be no impact to any populations; therefore, there will be no adverse human health or environmental effects to minority or low-income populations. This action would have no adverse effects on any cultural resources that are listed in or eligible for listing in the National Register of Historic Places. There are no other known past, present, and reasonably foreseeable future actions that will cumulatively result in significant impacts to the human environment when taking Reclamation's action into consideration.

Bragg, Carolyn <cbragg@usbr.gov>

Folsom Right Bank Stabilization Project

Williams, Scott <sawilliams@usbr.gov> Tue, Feb 10, 2015 at 2:30 PM
To: Carolyn Bragg <cbragg@usbr.gov>

Carolyn,

Pursuant to 36 CFR Part 800 (as amended 8-05-04), regulations implementing Section 106 of the National Historic Preservation Act, the Army Corps of Engineers (COE), Reclamation and the State of California Central Valley Flood Protection Board (CVRPB) continues consultation with the SHPO on the Folsom Joint Federal Project (JFP). The COE and CVFPB propose to implement design refinements to the Folsom JFP as analyzed in the Folsom Dam Safety and Flood Damage Reduction Final EIS/EIR by the Bureau of Reclamation in 2007. These design refinements for the current action are limited to the Right Bank Stabilization Project which will include slope protection measures along approximately 400 feet of the right bank of the American River downstream of the main Folsom Dam. The Folsom Dam is located at the confluence of the North and South Forks of the American River near the city of Folsom, California.

On April 26, 2014 concurred with the APE and the finding of No Historic Properties Affected.

Please retain a copy of this document with the project file to demonstrate that this action will have no significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by Reclamation (LND 02-01) (43 CFR 46.215 (g)).

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Scott A. Williams, M.A. Archaeologist
Bureau of Reclamation, Mid-Pacific Region
2800 Cottage Way, MP-153
Sacramento, CA 95825
916-978-5042

Bragg, Carolyn <cbragg@usbr.gov>

Re: ITA request

STEVENSON, RICHARD <rstevenson@usbr.gov> Fri, Feb 6, 2015 at 4:56 PM
To: "Bragg, Carolyn" <cbragg@usbr.gov>

I have reviewed the project description. Based on that description this project does not have the potential to impact any Indian Trust Assets.

Richard Stevenson

On Fri, Feb 6, 2015 at 1:47 PM, Bragg, Carolyn <cbragg@usbr.gov> wrote:

> Sorry for this late request but there is now a rush to get the FONSI signed. Let me know if you have any issues getting to this. Thanks a bunch!
> cb

--

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FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT/ ENVIRONMENTAL IMPACT REPORT

Folsom Dam Safety and Flood Damage Reduction Project Right Bank Stabilization

Janurary 2015
SCH #2006022091

US Army Corps of Engineers

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

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

SAFCA
Sacramento Area Flood Control Agency

Approved for public release; distribution is unlimited

EXECUTIVE SUMMARY

ES.1 Purpose of the SEIS/EIR

This Supplemental Environmental Assessment/Environmental Impact Report (EA/EIR) has been prepared for the Folsom Dam Safety Modification Project, Right Bank Stabilization. A Draft Supplemental EA/EIR for the Folsom Dam Modification Project, Right Bank Stabilization was completed July 2014 and a second draft EA/EIR was completed November 2014 based on changes to the project description. This final EA/EIR is a supplement to the 2007 Final EIS/EIR for the Folsom Dam Safety and Flood Damage Reduction Project (2007 FEIS/EIR), prepared by the U.S. Bureau of Reclamation. This project is also known as the Folsom Joint Federal Project (Folsom JFP). The Folsom JFP is a cooperative effort between the U.S. Army Corps of Engineers (Corps), the U.S. Bureau of Reclamation (USBR), the State of California Central Valley Flood Protection Board (CVFPB), and the Sacramento Area Flood Control Agency (SAFCA).

The 2007 FEIS/EIR stated that the design of the spillway approach channel would be determined in the Corps' pre-construction, engineering, and design phase and if needed, supplemental NEPA/CEQA documentation would be prepared. Subsequent technical studies and hydraulic modeling indicated that the convergence of flows from Folsom Dam and the new auxiliary spillway could erode and possibly destabilize the existing slope along the right bank of the American River where the two flows converge. This EA/EIR examines the impacts of proposed construction slope protection measures along approximately 400 feet of the right bank of the American River.

While this Supplemental EA/EIR builds upon and incorporates work already completed as part of the project development process, it does not reproduce in full the prior 2007 FEIS/EIR and ROD documentation. Detailed discussions of the changes to the project and/or conditions of the project area since 2007 are presented in the 2012 Folsom Dam Modification Project Approach Channel Supplemental Environmental Impact Statement/ Environmental Impact Report (2012 SEIS/EIR). The 2012 SEIS/EIR was supplemental to the 2007 FEIS/EIR and analyzed the construction of the approach channel to the auxiliary spillway. This Supplemental EA/EIR incorporates information from those documents by reference, where applicable.

The 2007 FEIS/EIR and ROD, and the 2012 SEIS/EIR and ROD can be reviewed at: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=1808 and http://www.spk.usace.army.mil/Missions/CivilWorks/FolsomDamAuxiliarySpillway.aspx

ES.2 Project Area

Folsom Dam is located at the confluence of the North and South Forks of the American River, approximately 29 miles upstream from the city of Sacramento, near the city of Folsom (Figure ES-1). The new auxiliary spillway is being constructed on the left abutment of the main dam, immediately downstream of the existing left wing dam.

Construction activities associated with the stabilization of the existing right bank slope will be confined to the lower right bank slope of the American River starting approximately 700 feet downstream from the Folsom Dam powerhouse. The project area for this Supplemental EA/EIR includes the right bank of the American River from the main dam to Folsom Lake Crossing Bridge, and USBR maintenance road to the powerhouse. The project area is shown on the map in Figure ES-2.

ES.3 Background and Need For Action

The evaluation in the 2007 FEIS/EIR was based on technical studies and the level of project design available at the time. Subsequent technical studies and hydraulic modeling indicated that the convergence of flows from the main dam and the auxiliary spillway could erode and possibly destabilize the existing slope along the right bank of the American River. After the auxiliary spillway becomes operational, changes in river hydraulics downstream of the stilling basin will occur that have not been experienced to date. Due to the orientation of the auxiliary spillway, an approximately 400 foot reach of the American River right bank slope may be more vulnerable to erosion and scour, depending on how the facilities are operated. As a result, concerns have been raised about what the impacts might be if erosion and scour are increased due to the new auxiliary spillway. Turbulent flow conditions along the right bank side of the American River could result in the displacement and/or release of large blocks of rock. This could result in a partial blockage/obstruction of flow; a rise in tailwater elevation, affecting power generation; and the potential for progressive failure of the upper bank slope.

This Supplemental EA/EIR provides this supplemental documentation and evaluates the direct, indirect, and cumulative environmental effects of slope protection measures and identifies mitigation measures to avoid, minimize, and compensate for impacts.

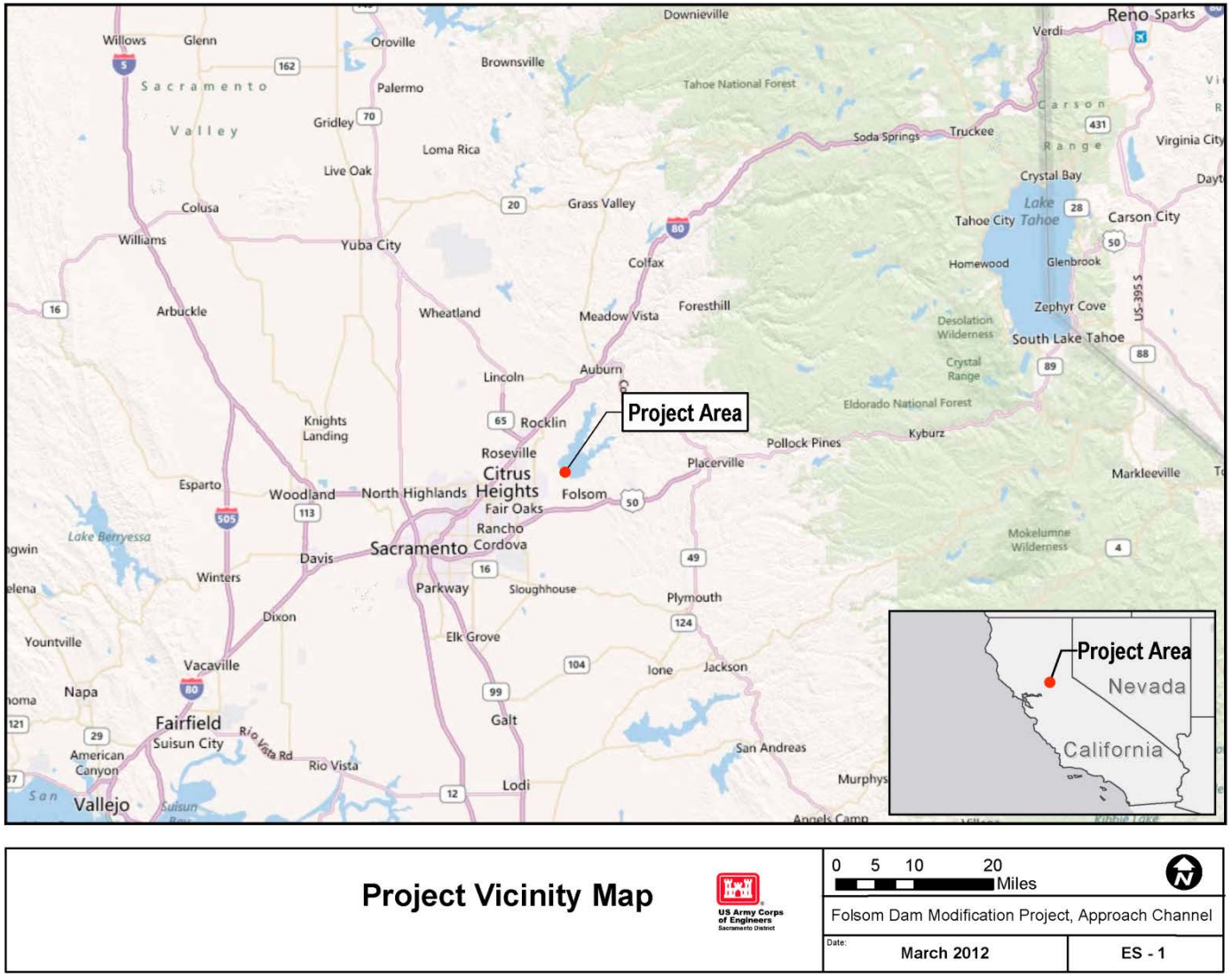

Figure ES-1. Project Vicinity Map.

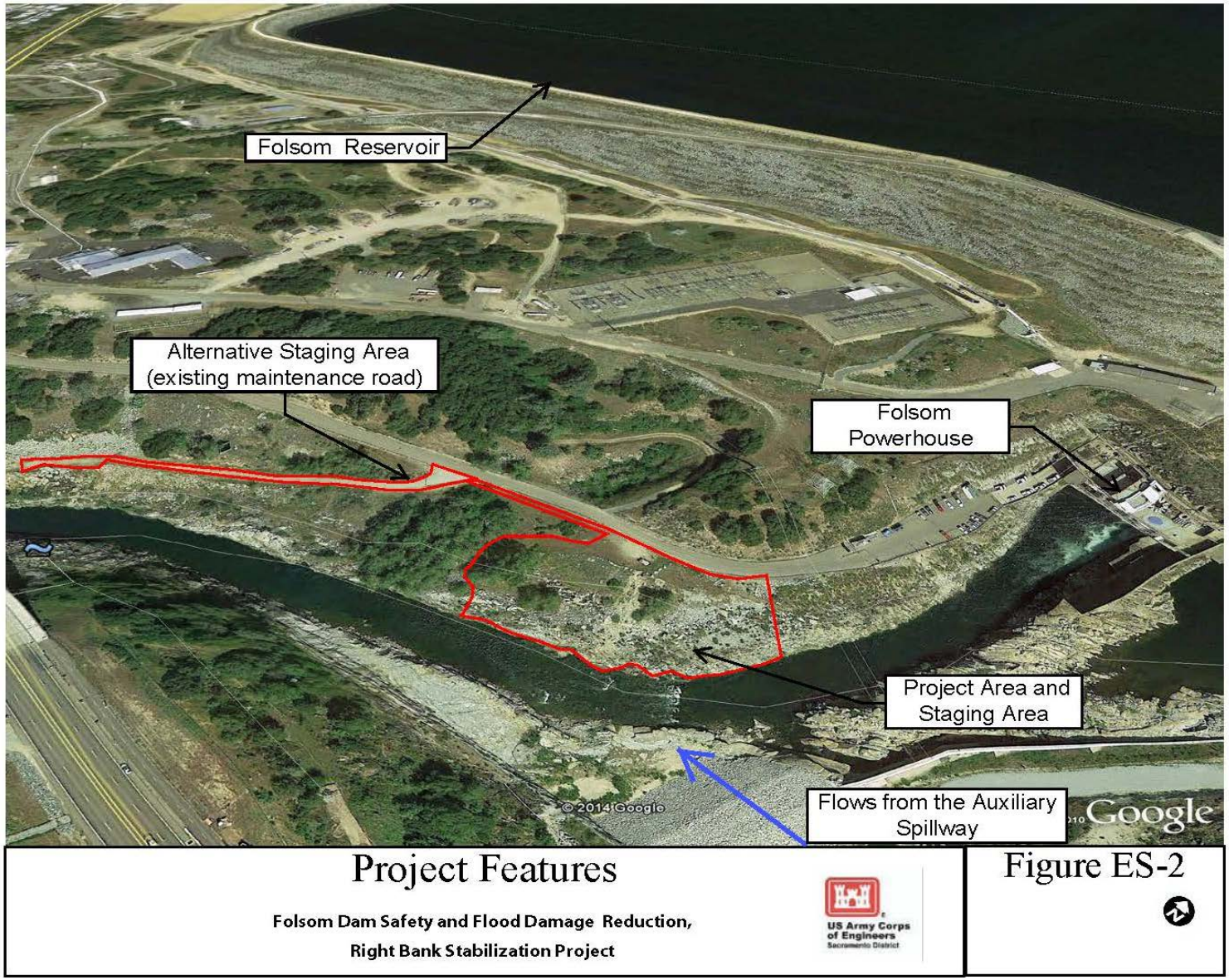

Figure ES-2. Project Area Map.

ES.4 Alternatives

ES.4.1 Alternative 1 – No Action

Under the no action alternative, the Corps and the CVFPB would not implement the slope protection measures proposed in this EA/EIR. During releases in high flow events, the tailwater could reach an elevation of 186.0 feet. Turbulent flow conditions along the right bank of the American River could result in the displacement and/or release of large blocks of rock. This could result in a partial blockage/obstruction of flow; a rise in tailwater elevation, affecting power generation; and the potential for progressive failure of the upper bank slope.

ES.4.2 Alternative 2 – Implement Slope Protection Measures (Preferred Action)

Alternative 2 consists of the permanent installation of approximately 40 rock bolts between 25 and 30 feet in length to pin the rock mass and the construction of a temporary 20-foot wide access road and a platform to allow for mobilization of the crane.

ES.6 Environmental Effects and Mitigation

There would be no significant effects to resources. The project would cause temporary effects to air quality, vegetation and wildlife and water quality, but these effects would be less than significant. Table ES-1 summarizes the potential effects of the alternatives, the significance of those effects, and any potential mitigation measures that would be implemented to reduce any effects to less than significance, if possible.

ES.7 Compliance With Applicable Laws, Policies, and Plans

This document will be adopted as a joint Supplemental EA/EIR and will fully comply with National Environmental Policy Act and California Environmental Quality Act requirements. The project will comply with all Federal laws, regulations, and Executive Orders. In addition, the non-Federal sponsor will comply with all State and local laws and permit requirements.

ES.8 Public Involvement

This Supplemental EA/EIR has been circulated for two 45-day review periods to Federal, State, and local agencies; organizations; and individuals who have an interest in the project. Comment letters and responses from the public comment periods are located in Appendix H. All comments received during the public reviews period have been considered and incorporated into the final Supplemental EA/EIR, as appropriate.

ES.9 Areas of Controversy

No significant issues have been identified for implementing the slope protection measures. Significant issues identified as areas of controversy by agencies and the public related to construction of the entire Folsom JFP are summarized below. These issues are based on

preliminary studies and comments from previous phases during formal and informal agency meetings, workshops, public meetings, telephone discourse, letters, and emails.

- Preliminary air quality emission calculations indicated that concurrent construction of the Folsom JFP project phases could result in air emissions above State ambient air quality standards and the Federal Clean Air Act (CAA).

- Construction is expected to increase noise levels, affecting local recreationists and adjacent residents, even under circumstances of compliance with the City of Folsom noise ordinances.

- Public comments to the 2007 EIS/EIR identified concerns over temporary curtailment of recreational activities in the project area. However, Folsom Point and the Folsom Point launch area will remain open to recreationists.

- Recreational experience may be degraded in and adjacent to the Folsom JFP project area. Noise, visual esthetics, and access will be compromised during construction during years 2013 to 2017.

ES.10 Unresolved Issues

At this time, there are no unresolved issues. The Corps will continue working with the Sacramento Metropolitan Air Quality Management District and the California Air Resources Board to ensure compliance with the CAA, as discussed in Section ES.9 above.

ES.11 Preferred Plan

Based on the results of the technical, economic, and environmental analyses; coordination with the non-Federal sponsor; and public input, Alternative 2 has been identified as the preferred plan. Based on geotechnical studies, Alternative 2 has been identified as the alternative that meets the public safety standards.

Table ES-1. Comparative Summary of Environmental Effects, Mitigation, and Levels of Significance.

	Alternative 1 – No Action	Alternative 2 – Implement Slope Protection Measures
Aesthetics		
Effect	No effect.	No effect.
Significance	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.
Fisheries		
Effect	No effect.	No effect.
Significance	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.
Hazardous, Toxic, and Radiological Wastes		
Effect	No effect.	No effect.
Significance	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.
Land Use and Socioeconomics		
Effect	No effect.	No effect.
Significance	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.
Noise		
Effect	No effect.	No effect.
Significance	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.
Recreation		
Effect	No effect.	No effect.
Significance	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.
Topography, Geology, and Soils		
Effect	No effect.	No effect.
Significance	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.

Traffic		
Effect	No effect.	No effect.
Significance	Not applicable.	Not applicable.
Mitigation	Not applicable.	Not applicable.
Air Quality		
Effect	No effect.	NOx will exceed SMAQMD standards.
Significance	Not applicable.	Less than significant with mitigation.
Mitigation	Not applicable.	Incorporation of SMAQMD Basic Construction Emission Control Practices and Enhanced Exhaust Control Practices.
Climate Change		
Effect	No effect.	Overall GHG emissions during 2015 have the potential to exceed the 25,000 metric ton CO2e threshold.
Significance	Not applicable.	Less than significant with mitigation.
Mitigation	Not applicable.	All applicable BMPs will be incorporated. If CO2e emissions exceed the 25,000 metric ton / year threshold, then a GHG reduction Plan will be implemented to reduce impacts to less than significant. Therefore, mitigation measures and BMPS will reduce GHG emissions to less than significant.
Cultural Resources		
Effect	No effect.	No adverse effect.
Significance	Not applicable.	Not applicable.
Mitigation	Not applicable.	If archeological deposits are found during project activities, work would be stopped pursuant to 36 CFR 800.13(b), Discoveries without Prior Planning, to determine the significance of the find and, if necessary, complete appropriate discovery procedures.
Special Status Species		
Effect	No effect.	Temporary disturbance to elderberry shrubs; if present, disturbance to Swainson's hawk, Cooper's hawk, and white-tailed kites.
Significance	Not applicable.	Less than significant with mitigation
Mitigation	Not applicable.	Incorporating measures from USFWS

		"Conservation Guidelines for the Valley Elderberry Longhorn Beetle. Conduct surveys for listed birds and if necessary implement CDFG recommendations.
Vegetation and Wildlife		
Effect	No effect.	Potential loss of up to 12 trees.
Significance	Not applicable.	Less than significant with mitigation
Mitigation	Not applicable.	Recommendations proposed by USFWS. Site restoration, planting of trees and/or mitigation bank credits.
Water Quality		
Effect	No effect.	Accidental spills of construction-related substances such as oils and fuels can contaminate both surface water and ground water. Potential for fugitive dust, construction runoff, and incidental fallback of materials to enter waterways.
Significance	Not applicable.	Less than significant with mitigation.
Mitigation	Not applicable.	Implementing standard BMPs to avoid or minimize any effects of construction on surface waters as part of the SWPPP and NPDES permits.

CONTENTS

TABLES

FIGURES

PLATES

APPENDICES

ACRONYMS & ABBREVIATIONS

APE	area of potential effects
BMPs	best management practices
CARB	California Air Resources Board
CAA	Clean Air Act
CCAA	California Clean Air Act
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH_4	methane
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
Corps	U.S. Army Corps of Engineers
CVP	Central Valley Project
CVFPB	Central Valley Flood Protection Board
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dB	decibels
dBA	"A-weighted" decibel
EA	Environmental Assessment
EA/EIR	Environmental Assessment/Environmental Impact Report
EA/IS	Environmental Assessment/Initial Study
EFH	essential fish habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
°F	degrees Fahrenheit
FEIS/EIR	Final Environmental Impact Statement/Environmental Impact Report
Folsom Facility	Folsom Dam and its associated facilities
FONSI	Finding of No Significant Impact
GCR	General Conformity Rule
GHG	greenhouse gas
HFC	hydrofluorocarbons
HOV lanes	bus/carpool lanes
HTRW	hazardous, toxic, and radiological wastes
JFP	Joint Federal Project
L_{50}	noise level exceeded more than 30 minutes per hour
LOS	level of service
µg/m3	micrograms per cubic meter
MIAD	Mormon Island Auxiliary Dam
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act

NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OPR	Governor's Office of Planning and Research
Pb	lead
PFC	perfluorocarbons
PM	particulate matter
$PM_{2.5}$	fine particulate matter
PM_{10}	inhalable particulate matter
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SAFCA	Sacramento Area Flood Protection Agency
SF_6	sulfur hexafluoride
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
USBR	U.S. Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service
WRDA	Water Resources Development Act

1.0 INTRODUCTION

1.1 Proposed Action

The U.S. Army Corps of Engineers (Corps) and the State of California Central Valley Flood Protection Board (CVFPB) propose to implement design refinements to the Folsom Dam Safety and Flood Damage Reduction Project (Folsom JFP), previously addressed in the Final Environmental Impact Statement/Environmental Impact Report on the Dam Safety and Flood Damage Reduction Project (2007 FEIS/EIR), issued by the U.S. Bureau of Reclamation (USBR) in 2007 (USBR 2007). These design refinements include slope protection measures along approximately 400 feet of the right bank of the American River downstream of the main dam. The purposed action would ensure the right bank slope remains stable where flows from the main dam and the auxiliary spillway converge. Construction details of these design refinements are included in Section 2.2.

1.2 Background and Need

The Folsom JFP is a cooperative effort among the Corps, CVFPB, USBR, and the Sacramento Area Flood Control Agency (SAFCA). The Folsom JFP is designed to improve the dam safety, security, and flood damage reduction features at Folsom Dam and associated facilities, including construction of a gated auxiliary spillway southeast of the main dam. Folsom Dam is a concrete gravity dam 340 feet high and 1,400 feet long flanked by left and right earthfill wing dams. The Folsom Facility also includes Morman Island Auxiliary Dam and eight earthfill dikes. The storage capacity for the reservoir is 977,000 acre-feet at an elevation of 466 feet. Construction of Folsom Dam by the Corps began in October 1948 and was completed in May 1956. The auxiliary spillway is currently under construction by the Corps and will be completed in approximately Fall 2017.

Operation of this spillway would increase water discharge capability from the reservoir and help to provide a 200-year level of flood protection to the Sacramento area. The potential effects of the Folsom JFP on environmental resources were evaluated by USBR in the 2007 FEIS/EIR. The Corps was a cooperating agency in the development of the 2007 FEIS/EIR, and a joint Record of Decision was signed on May 3, 2007. A Notice of Determination (NOD) and Statement of Findings were issued by the CVFPB on July 20, 2007.

The evaluation in the 2007 FEIS/EIR was based on technical studies and the level of project design available at the time. Subsequent technical studies and hydraulic modeling indicated that the convergence of flows from the main dam and the auxiliary spillway could erode and possibly destabilize the existing slope along the right bank of the American River where the flows from the main dam and auxiliary spillway converge. After the auxiliary spillway becomes operational, changes in river hydraulics downstream of the stilling basin will occur that have not been experienced to date. Due to the orientation of the auxiliary spillway, an approximately 400 foot reach of the American River right bank slope may be more vulnerable to erosion and scour, depending on how the facilities are operated. As a result, concerns have been raised about what the impacts might be if erosion and scour are increased due to the new auxiliary spillway. Turbulent flow conditions along the right bank side of the American River could result in the

displacement and/or release of large blocks of rock. This could result in a partial blockage/obstruction of flow; a rise in tailwater elevation, affecting power generation; and the potential for progressive failure of the upper bank slope.

Before a decision can be made to proceed with the bank stabilization action, the effects of the slope protection measures must be evaluated to determine whether they would have any significant environmental effects that could not be avoided or mitigated to less than significant. Without these slope protection measures, turbulent forces could cause erosion or cause displacement of rock blocks in the lower, steeper portion of the bank slope.

1.3 Project Area

Folsom Dam is located at the confluence of the North and South Forks of the American River, approximately 29 miles upstream from the city of Sacramento, near the city of Folsom (Plate 1). The new auxiliary spillway is being constructed on the left abutment of the main dam, immediately downstream of the existing left wing dam.

Construction activities associated with the stabilization of the existing right bank slope will be confined to the lower right bank slope of the American River starting approximately 700 feet downstream from the powerhouse. The project area for this Supplemental EA/EIR includes the right bank of the American River from the main dam to Folsom Lake Crossing Bridge, and USBR's maintenance road to the powerhouse (Plate 2).

1.4 Folsom JFP Authority

Construction of the auxiliary spillway was authorized by Section 101(a)(6)(A) of the Water Resources Development Act (WRDA) of 1999 (1113 Stat. 274) and modified by Section 128 of the Energy and Water Development and Appropriations Act of 2006 (119 Stat. 2259). Specifically, Section 128 of the 2006 Act authorizes the Secretary of the Army and the Secretary of the Interior to collaborate on developing alternatives to provide flood damage reduction improvements and dam safety measures at Folsom Dam, including an auxiliary spillway. Formal authorization for the Folsom JFP was included in Section 3029(b) of WRDA 2007, authorizing the Corps and USBR to construct the auxiliary spillway generally in accordance with Corps' Post Authorization Change Report, American River Watershed Project (Folsom Dam Modifications and Folsom Dam Raise) (Corps 2007).

1.5 Purpose of the Supplemental EA/EIR

This Supplemental EA/EIR (1) describes the existing environmental and cultural resources in the project area; (2) evaluates the effects and significance of the proposed bank stabilization measures on these resources; and (3) proposes measures to avoid, minimize, or mitigate any adverse effects to less than significance. This EA/EIR has been prepared in accordance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). This EA/EIR is intended to supplement the 2007 FEIS/EIR.

Based on the results of the EA/EIR, the District Engineer, Commander of the Sacramento District, will decide whether or not the proposed action qualifies for a Finding of No Significant Impact (FONSI) under NEPA or whether a supplemental EIS must be prepared. An EA and a FONSI will be sufficient if the proposed refinements are determined to not result in new significant effects on the environment beyond the significant effects identified in the 2007 FEIS/EIR and the scope and magnitude of impacts are within the range of impacts identified in the 2007 FEIS/EIR. In addition, CVFPB will consider certifying the EIR and adopting its findings, adopting the mitigation and monitoring plan, and approving the design refinements to the project.

1.6 Related Documents

The following documents are relevant to the modifications and are incorporated by reference in this Supplemental EA/EIR.

- 2007 Folsom Dam Safety and Flood Damage Reduction FEIS/EIR. The 2007 FEIS/EIR was prepared by USBR and contains the initial analysis of environmental effects and potential mitigation associated with the overall Folsom JFP.

- 2010 Folsom Dam Safety and Flood Damage Reduction EA/EIR, Control Structure, Chute, and Stilling Basin. The 2010 EA/EIR was supplemental to the 2007 FEIS/EIR and analyzed design refinements for the auxiliary spillway's chute, stilling basin, and construction of the control structure.

- 2012 Folsom Dam Safety and Flood Damage Reduction Project EA/EIR, Prison Staging Area and Stilling Basin Drain. The 2012 EA/EIR was supplemental to the 2007 FEIS/EIR and analyzed design refinements to use Folsom State Prison land as a staging area and to construct a drain at the stilling basin.

- 2012 Folsom Dam Modification Project Approach Channel SEIS/EIR. The 2012 SEIS/EIR was supplemental to the 2007 FEIS/EIR and analyzed the construction of the approach channel to the auxiliary spillway.

2.0 ALTERNATIVES

2.1 Alternatives Not Considered Further

The project area is situated in a narrow corridor adjacent to the American River where flows from the main Folsom dam and the auxiliary spillway converge. The purpose of this project is to protect and reinforce the right bank of the American River.

Structures designed to protect the areas around a slope from falling rocks include mesh or cable nets, barriers and fences, and catchment areas. These devices allow rocks to fall but prevent them from causing any damage. These types of protection can stop a rock, control its trajectory, reduce its energy, and/or provide a catchment.

Mesh or cable nets provided rockfall protection by holding rocks behind the mesh/net or direct them to a catchment area at the bottom of the slope. Nets were determined not to be feasible because they are limited to catch smaller sized rocks than what is located in the project area and would require a debris-collection catchment area. Barriers and fences are installed at the bottom of the slope and provide rockfall protection by catching and stopping falling rocks. These were determined not to be feasible due to the limited space of the project area, require too much maintenance and they not as aesthetically pleasing. Catchment areas are ditches or trenches dug along the foot of a slope used to dissipate falling rocks and collect rocks or debris that become detached from the slope. Catchment areas were determined not to be feasible due to the limited space of the project area and require maintenance.

2.2 Alternative 1 - No Action

Under the no action alternative, the Corps and the CVFPB would not implement the slope protection measures proposed in this Supplemental EA/EIR. During releases in high flow events, the tailwater could reach an elevation of 186.0 feet. Turbulent flow conditions along the right bank side of the American River could result in the displacement and/or release of large blocks of rock. This could result in a partial blockage/obstruction of flow; a rise in tailwater elevation, affecting power generation; and the potential for progressive failure of the upper bank slope.

2.3 Alternative 2 – Implement Slope Protection Measures (Preferred Action)

This section describes the proposed slope protection measures to the right bank of the American River. Other construction features described in the 2007 FEIS/EIR and supplemental documents would remain the same. Photographs of existing site conditions are provided in Plate 3.

2.3.1 Construction Details

Permits and Utilities. Prior to initiation of the project, the construction contractor would be required to obtain all Federal, State, and local permits and approvals necessary to perform the work, including those related to storm water discharge, air quality, and traffic safety. There are no known utilities located in the project area. The contractor would be required to verify if any utilities exist in or near the project area and ensure that any found would not be damaged or disrupted. If utilities are found, potentially affected utility companies would be contacted by the contractor concerning the timing and scope of the proposed work.

Mobilization and Staging. Access to the site would be from the west of the project area by way of Folsom-Auburn Road. Approximately one-quarter mile to the north of the signaled intersection of Folsom-Auburn Road and Folsom Lake Crossing Road, vehicles would turn right at the entrance to USBR's Central California Area Office (CCAO) facility (Figure 1). Access to the project area would be through USBR's property controlled by CCAO.

The project area is approximately 2 acres although the actual area of work to install the rock bolts would be confined to a much smaller area (approximately one-half acre). Staging area space is limited at the project area. There is an existing unpaved turnout area near the powerhouse in close proximity to the project area which would be used for staging and vehicle parking (Figure 2). A second staging area located along approximately 0.5 acres of an existing dirt road located may

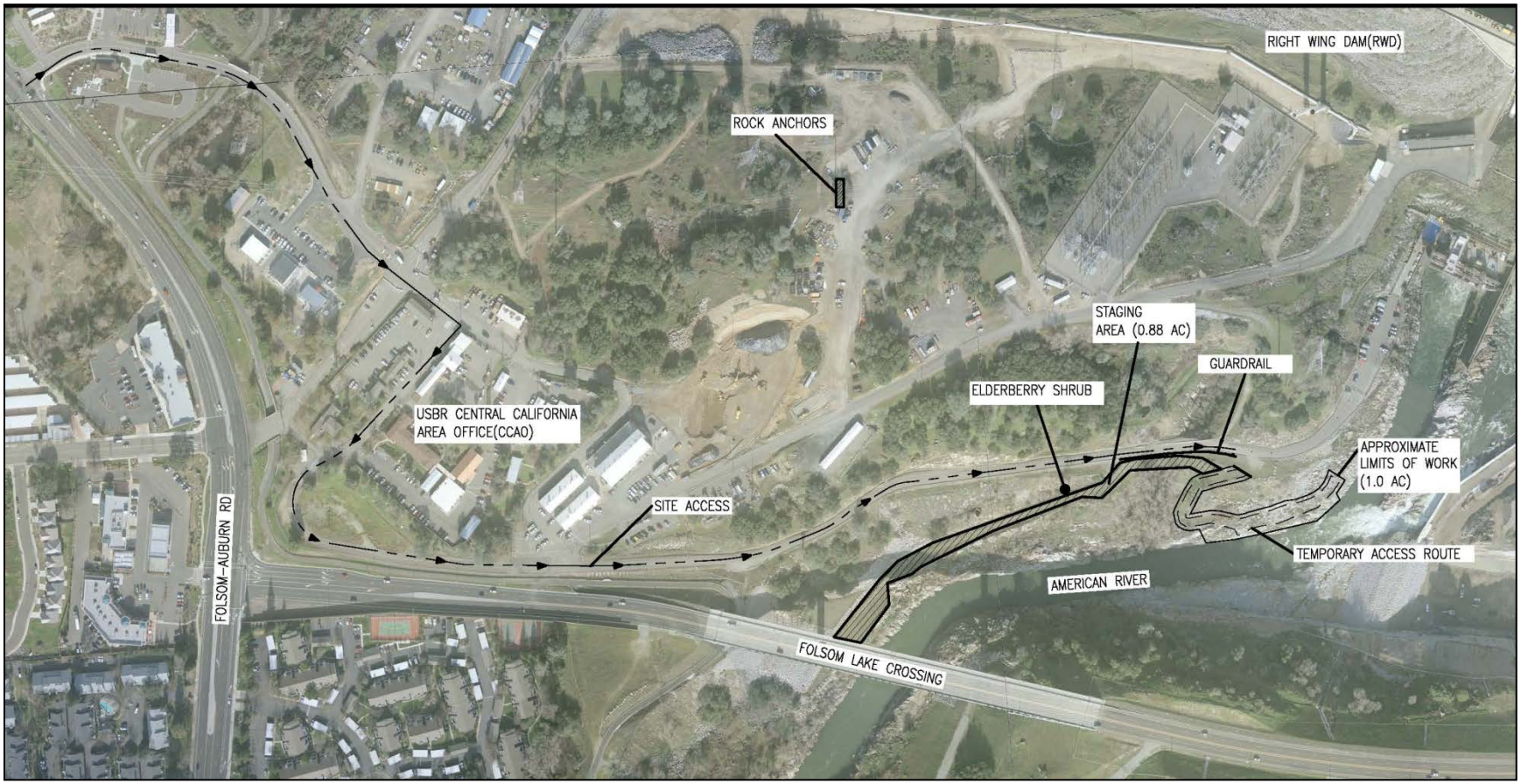

Figure 1. Access to the Project Area

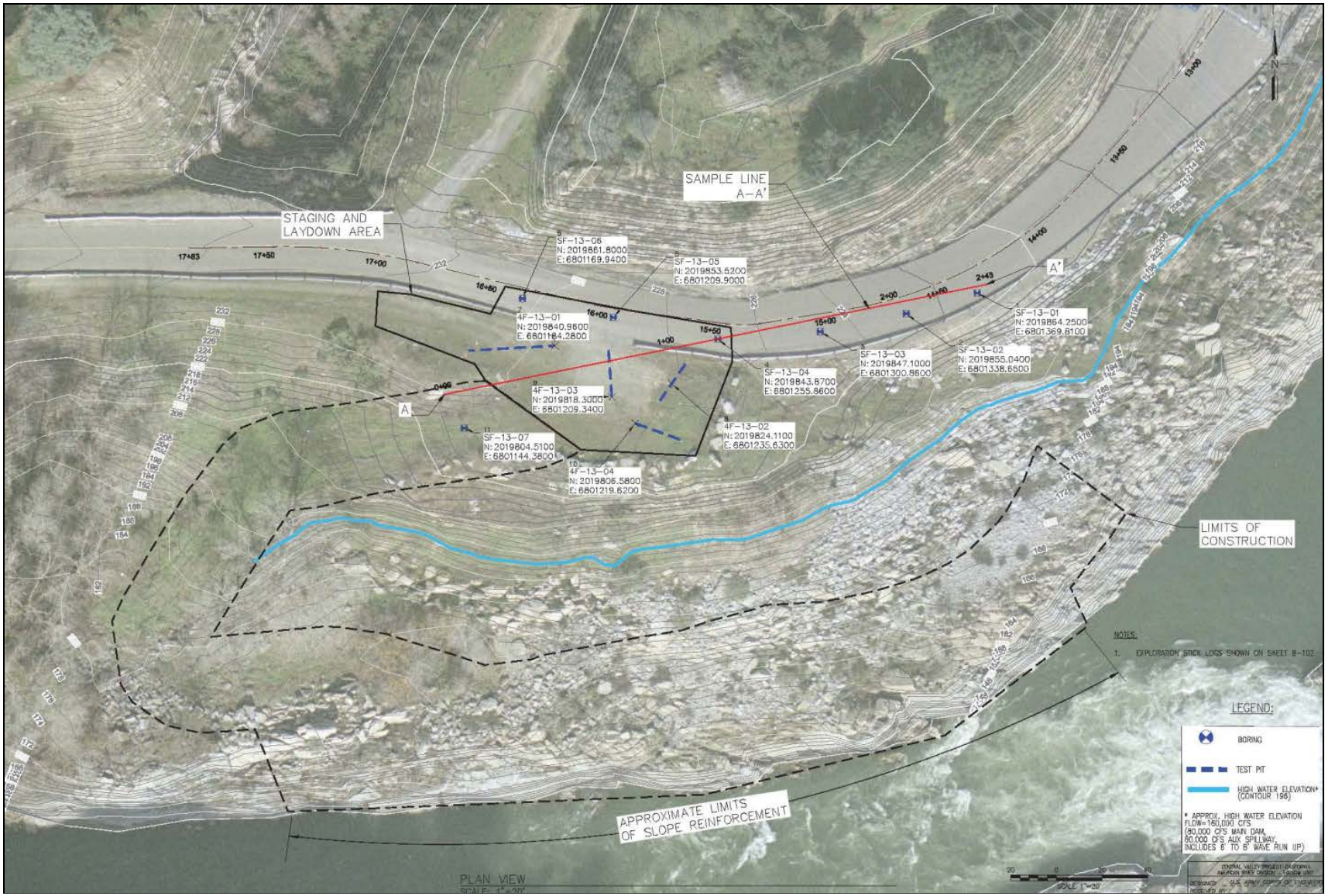

Figure 2. Staging Area and Access Road Alignment

Figure 3. Approximate Rock Bolt Locations

be used if additional space is required (Plate 2). Access to the powerhouse is controlled by USBR and the use of this area would be coordinated with CCAO. Due to the scope and nature of work involved, the need for vehicular parking, staging and laydown areas would be small. Minimal grading would be required to enlarge the existing unpaved turnout area to develop sufficient space for staging and vehicles. Prior to initiation of the work, the staging area would be fenced.

Lower Slope Protection. To ensure the slope of the right bank remains stable between elevations 130 and 155, post-tensioned rock bolts would be installed below elevation 155 (Figure 3). A rock bolt is a long anchor bolt which is used to stabilize rock. Rock bolts generally consist of steel elements (bars or strands) grouted in a drilled hole. Rock bolts actively transfer loading between the unstable exterior, to the stable, stronger interior of the rock, thereby lowering the structure's center of gravity. Rock bolts work by 'knitting' the rock mass together sufficiently before it can move enough to loosen and fail Approximately 40 rock bolts between 25 and 30 feet in length would be placed to pin the rock mass. Holes would be drilled into the rock slope and then filled with cement grout or resin grout to hold the rock bolts in place. Rock bolts would be installed perpendicular to the slope and subsequently tensioned. In addition to the installation of rock bolts, formed concrete could be required to fill in joint cavities directed inward to prevent the potential dislodging of several large rock blocks in the vicinity.

Site Preparation. The project site is located along a steep slope, which is difficult for drilling equipment to access. Site preparation would involve clearing an area for a work platform to place a crane and other equipment needed for installing rock bolts. A crane platform could be setup on either the upper-slope staging area or on a mid-slope area. The crane would lower the crew and drilling equipment over the edge to install the rock bolts. Alternatively, to access hard-to-reach rock bolt locations, the contractor could use a barge to conduct drilling operations. The barge would allow a track-mounted drill rig to be transported to the shoreline to access the rock bolt locations.

Access Road. A 20-foot wide access road and a platform would be constructed to allow for mobilization of the crane. The access road alignment is shown on Figure 2. Site preparation for the access road would include minor clearing, grubbing, and tree removal of approximately 0.04 acres. Approximately 3,000 cy of material would be need to develop the access road. Small earth-moving equipment would cut approximately 1,000 cubic yards (cy) of material. All suitable material from excavation would be reused to construct the access road to the extent feasible. Approximately 2,000 cy of fill material would need to be imported for the access road. It is anticipated that the fill material needed would come from existing local commercial off-site source and delivered to the site. For the construction of the access road, soil would be graded, scarified, and compacted. Aggregate base material would be spread over the access road and compacted to 100 percent density. Completion of the access road is estimated to take approximately 2 weeks.

Demobilization and Clean Up. Once the slope protection measures are completed, the contractor would remove all construction equipment, temporary fencing, and unused materials from the project area. In addition, all work areas would be cleaned of work-related debris and rubbish, and work areas would be left in a neat and presentable condition. Any roadway pavement or parking area gravel damages due to construction equipment or haul trucks would be repaired to pre-project conditions.

Restoration. The contractor would restore all disturbed areas to pre-project conditions via seeding with a plant mix typical of the area to prevent erosion and encourage revegetation. Any trees removed would be mitigated in accordance with the recommendations provided in the Coordination Act Report. If mitigation cannot be completed on-site, it is assumed to be completed at Rossmoor Bar mitigation site along the American River.

Operation and Maintenance. No maintenance is required after the rocks bolts are installed.

2.3.2 Construction Schedule

The proposed slope protection measures would be conducted over a six month period starting the middle to late summer of 2015. Work hours would be limited to 7 a.m. to 6 p.m. on weekdays and 8 a.m. to 5 p.m. on Saturdays. No work would be conducted on Sundays or during late evening or night hours.

3.0 AFFECTED RESOURCES AND ENVIRONMENTAL EFFECTS

3.1 Introduction

This section evaluates the following environmental resource areas, in which the proposed Folsom Dam JFP refinements could have new or substantially more severe significant direct, indirect, and/or cumulative environmental effects:

- Air quality
- Climate Change
- Cultural resources
- Vegetation and Wildlife
- Special Status Species
- Water Quality
- Growth inducing and cumulative effects

In this document, "affected resources" refers to the present-day, existing environmental conditions of the project area. Both beneficial and adverse effects are considered, including direct effects during construction and indirect effects resulting from the project implementation. Where necessary, each section contains a discussion of the methods used to analyze effects. The basis of significance is based on NEPA and CEQA requirements. The Corps has integrated NEPA requirements into its regulations, policies, and guidance. Engineering Regulation 1105-2-100, "Planning Guidance Notebook," April 2000, establishes the following significance criteria:

- Significance based on institutional recognition means that the importance of the effect is acknowledged in the laws, adopted plans, and other policy statements of public agencies and private groups. Institutional recognition is often in the form of specific criteria.

- Significance based on public recognition means that some segment of the general public recognized the importance of the effect. Public recognition may take the form of controversy, support, conflict, or opposition expressed formally or informally.
- Significance based on technical recognition means that the importance of an effect is based on the technical or scientific criteria related to critical resource characteristics.

For this Supplemental EA/EIR, these three NEPA criteria apply to all resources and are not repeated under each resource. The CEQA requirements are more specific to the resource and are listed in Appendix G of the CEQA Guidelines. The CEQA criteria relevant to an urban setting, as well as other agency criteria and thresholds of significance that apply to each resource, are identified under the appropriate resource. When necessary, measures are proposed to avoid, minimize, or reduce any adverse effects on that resource to less than significant.

3.2 Resources Not Considered in Detail

The following environmental resource areas are not addressed in this Supplemental EA/EIR because the proposed refinements are expected to have little or no effect on these resources: topography, geology, and soils, land use, prime farmland, socioeconomics, environmental justice, recreation, hazardous, toxic, and radiological waste, aesthetics, noise, and fisheries. The following discussion summarizes why each of these areas are not evaluated further.

3.2.1 Aesthetics

The project area is located in a remote open area on the west side of Folsom Dam that is not accessible to the public. Regional views include Folsom Lake, as well as the surrounding foothills, which include open space preserves and/or recreational areas. Prominent features in the local viewshed are Folsom Dam, the out flow channel, and the auxiliary spillway. The primary viewers of the project site would consist of commuters and other motorists driving across Folsom Lake Crossing (bridge) or recreationist using the bike path.

Construction activities would temporary affect the local viewshed. However, this area has ongoing construction from dam improvements; thus, the construction of the proposed action would not be a change from the current, existing conditions. Length of construction would be limited to six months. Once construction is completed, all equipment and barriers and fencing would be removed, and the local viewshed would return to pre-project conditions. As a result, the project would have no effect on aesthetics.

3.2.2 Fisheries

The upstream portion of Lake Natoma includes the highly bedrock-confined outflow channel below Folsom Dam. Lake Natoma, was formed by the construction of Nimbus Dam in 1955, and serves as a regulating afterbay for Folsom Reservoir. There are approximately 28 fish species that have the potential to occur downstream of Folsom Dam within either the outflow channel or Lake Natoma. Of these species, 24 are non-native and four are native. The four native species known to occur include Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento

sucker (*Catostomus occidentalis*), rainbow trout (*Oncorhynchus mykiss*), and chinook salmon (*Oncorhynchus tshawytsha*). The latter two species from the salmonid family are important cold-water game species that are managed and maintained by California Department of Fish and Wildlife (CDFW) active hatchery-based stocking program. The most abundant non-native species originate from the centrarchid family, and include various bass and sunfish.

Rock bolts would be installed above the water line and no in-water excavation or drilling would occur. The contractor would be required to develop and submit a Storm Water Pollution Prevention Plan (SWPPP) to minimize the potential for soil, grout, or contaminants to enter the river. Erosion/sediment controls such as hay bales, straw wattles and silt fencing would be utilized as necessary to prevent soil from entering the river. 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, the contractor will take measures to avoid and contain any spills. The contractor will be required to develop and submit a Spill Prevention and Countermeasure Plan (SPCP) prior to initiating construction activities. The SWPPP and SPCP must be approved by the Corps.

Construction-related effects on fish could include effects related to noise, and vibrations caused by drilling equipment operation. These types of physical disturbances can disrupt or delay normal activities, or cause injury or mortality. The potential magnitude of effects depends on a number of factors, including the type and intensity of the disturbance, proximity of the action to the water body, timing of actions relative to the occurrence of sensitive life stages, and frequency and duration of activities. Sound is measured in frequency (Hz) and intensity (decibels, dB), and the decibel scale is logarithmic (that is, 110 dB is 10 times greater than 100 dB, 120 dB is 100 times greater) (White 2003). NOAA Fisheries' interim criterion for physical injury to fish is a 206-dB peak, regardless of fish size.

Rock drilling activities could temporarily increase underwater noise but it is unlikely noise levels would be above thresholds for fish. For most activities, if present, noise-related effects on fish would be limited to avoidance behavior in response to movements, noises, and shadows caused by construction personnel and equipment operating. Resident fish would likely move downstream to an unaffected portion of the river in response to noise or disturbance and would therefore be unaffected. No listed fish species or essential fish habitat are present is the project area. The proposed project would have no effect on fisheries or fish habitat.

3.2.3 Hazardous, Toxic, and Radiological Waste

In January 2012, the Corps prepared an updated Phase I Environmental Site Assessment (ESA) to identify and evaluate potential hazardous, toxic, and radiological waste (HTRW) in and near the approach channel feature of the Folsom JFP. The purpose of the ESA was to review available documentation regarding past and current land use activities to assess the possible presence of hazardous substances and waste. The records investigation identified 78 HTRW sites, many of which were duplicated in multiple databases. The actual physical sites consisted of 16 aboveground storage tanks, underground storage tanks, treatment, generator, storage, or disposal facilities, as well as 23 mitigating sites or sites that had reported spills in the past. No sites were identified within or near the proposed project area.

Sites that were reported by Environmental Data Resources, Inc. would not affect the proposed construction because they are under control, exhibit no signs of continuing release and are generally more than 0.25 mile away from the project area. Based on the ESA and field reconnaissance, the project would have no effects on HTRW sites, and there is no apparent HTRW contamination that would interfere with construction of the project.

While the installation of the rock bolts would not require long-term storage or use of hazardous materials, there are potential health and safety hazards that include possible accidental spills or leaks involving fuels, or lubricants. Prior to initiation of construction, the contractor would prepare a hazardous materials control and response plan if minimum reportable quantities are met. The plan would include best management practices (BMPs) and other measures to avoid or minimize any potential hazard. As result, the design refinements would not be expected to have any effects from use of hazardous materials.

3.2.4 Land Use and Socioeconomics

A detailed discussion of socioeconomics (population, housing, and the economy) and land use are presented in the 2012 SEIS/EIR. The land surrounding Folsom Dam and Reservoir is primarily Federally-owned and designated for recreation and flood control use. The major land use in the project area is USBR's Central California Area Office, the Folsom Dam industrial complex, Folsom State Prison, and a utility corridor. Implementation of the slope protection measures would not result in any changes in the designated zonings or existing land uses in or near the project area. As a result, the slope protection measures would have no effect on the overall land use.

As directed in Executive Order 12898, 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. There are no minority, low-income populations or homeless encampments that would be disproportionately affected by the proposed action. All nearby residents would benefit equally from the project.

3.2.5 Noise

The primary sources of ambient (background) noise are construction equipment around Folsom Dam and vehicular traffic on area roadways is the dominant source of noise affecting noise-sensitive land uses in the project area. Acceptable levels of environmental noise are regulated at the local level through the general plan process and city and county noise ordinances. The proposed action is located in the City of Folsom and Sacramento County. The City of Folsom uses L_{50} as the baseline criterion level (City of Folsom 2010). The baseline criterion level (L_{50}) is 50 dBA during daytime and 45 dBA during nighttime.

The noise levels from construction activities would vary during the different activity periods, depending on the types of equipment being used. Typical types of construction equipment expected for this project included a compactor, crane, generators, grader, compressor, trucks, and a drill rig. Table 1 presents the noise levels from common construction equipment at 50 feet from the source.

Table 1. Typical Noise Emission Levels for Construction Equipment.

Equipment	Typical Noise Level (dBA) 50 feet from Source
Compactor	82
Crane	83
Generator	81
Grader	85
Truck	74-88
Horizontal drill	81

[1]Extracted from table in U.S. Army Garrison-Hawaii, 2004.
Source: Federal Transit Administration 2006, Federal Highway Administration 2006.

Under worst case scenario, the average noise levels of the construction equipment would be 83 dBA, Leq at 50 feet. Noise from construction activities generally attenuates at a rate of 6 to 7.5 dBA per doubling of the distance of the noise source. The closest sensitive receptor to the project area is an apartment complex approximately 0.4 miles away. At a distance of over 2000 feet, noise levels would be reduced to below 50 dBA.

The length of construction would be limited to six months and few, if any, people would be expected in or near the project area. Construction hours would occur within the City of Folsom noise exemptions times (7:00 a.m. to 6:00 p.m. during weekdays and 8:00 a.m. to 5:00 p.m. on weekends) (City of Folsom 2010). Noise exemption times allows for noise generated by construction to not be subject to the exterior noise standard limits. Once construction is completed, all equipment would be removed and the local noise would return to pre-project conditions. As a result, the project would have no adverse effect on noise.

3.2.6 Recreation

A detailed discussion of recreation is presented in the 2012 SEIS/EIR. The major tributaries in the American River system include the North Fork American River, Middle Fork American River and South Fork American River. These tributaries drain the upper watershed into Folsom Reservoir. Nineteen miles of the South Fork of the American River has been designated as having outstanding values under the Federal Wild and Scenic Rivers Act. Starting at Chili Bar Reservoir and ending at the Folsom Lake State Recreation Area boundary, this stretch of the river was designated for its recreational whitewater boating and historical values.

Lake Natoma is approximately 6.5 miles downstream of Folsom Dam and serves as the afterbay to Folsom Reservoir. The Lower American River from Nimbus Dam to the confluence with the Sacramento River has been designated as a recreational river under the Federal Wild and Scenic Rivers Act.

The project area is located within the Folsom Lake State Recreation Area, below Folsom Dam. Folsom Lake State Recreation Area includes Folsom Reservoir and the surrounding landscapes which provide a variety of land- and water-based activities such as camping, hiking, marinas, bicycling, and boating (State of California 1984). Additionally, on the north and south side of Folsom Lake Crossing, there is a Class II Bike Trail along the edges of pavement. On the north side of Folsom Lake Crossing, there is also a Class I Bike Trail approximately 4 feet north of

the Class II trail. The bike trail and recreational areas surrounding the reservoir are located a significant distance away from the project area and would not be affected by the proposed project.

3.2.7 Topography, Geology, and Soils

A detailed discussion of the area's topography, geology, and soils is presented in the 2012 SEIS/EIR. The project area is located in the American River watershed, which ranges in elevation from 10 feet above mean sea level at the confluence with the Sacramento River to 10,000 feet in the Sierra Nevada Mountains. Folsom Reservoir is in the foothills of the Sierra Nevada Mountains, set within the valley created by the confluence of the North and South Forks of the American River.

Localized areas of the project area would be disturbed during construction due to preparation of the staging area, excavation associated with the preparation of the access road and the construction of a crane pad. Soil types have a moderate to high erosion potential; because of the steep slopes within the project area, and the active excavation and grading of soil during construction activities, which could result in erosion. The construction contractors shall be required to prepare and implement a SWPPP and comply with the conditions of the NPDES general stormwater permit construction activity. Potential erosion during construction would be addressed through the implementation of BMPs. All suitable material from excavation of the access road would be reused in the project area to the extent feasible. Implementation of the slope protection measures would not change the topography of the area or the soils.

Fill and other materials needed would come from existing local commercial off-site source and delivered to the site. Two primary sources were identified as Cool Cave quarry near Auburn and Perkins Plants south of Hwy 50 east of Sacramento. The ultimate source of fill and other materials would be determined by the contractor.

The design and construction of the slope protection measures would comply with the regulatory standards of the Corps, USBR, and CVFPB and meet or exceed applicable design standards for static and dynamic stability, seismic-related ground failure including subsidence and landslides, therefore the project would not be affected by the area's geology. As a result, the slope protection measures would have no effect on the overall geology, soil conditions or topographic features in and near the project area.

3.2.8 Traffic

A detailed discussion of the area's traffic and circulation is presented in the 2012 SEIS/EIR. The main roadway and access route to the project area is Folsom-Auburn Road. This four-lane divided arterial which runs north and south, connecting Sacramento County to Placer County. The north bound direction provides access to Granite Bay while the south bound direction connects to the City of Folsom and Highway 50. Folsom-Auburn Road is used primarily by commuters, residents, and recreationist. Traffic consists mostly of private automobiles, light commercial vehicles, emergency vehicles, public buses, and bicycles.

Traffic volume on Folsom-Auburn Road peaks during the morning and evening rush hour and becomes a steady but lower volume during the day. A traffic study presented in the 2012 SEIS/EIR compiled average daily traffic (ADT) volumes along the roadways around Folsom Dam. According to the traffic study (2012), the ADT of Folsom-Auburn Road between Douglas Road to Folsom Dam Road was 44,918 and was projected to increase 2% each year.

Access to and from the project area for construction-related vehicles would be via local roadways, including Folsom-Auburn Road. These vehicles would include construction equipment, trucks, and worker vehicles. The equipment would be stored in the staging area, while the worker vehicles and trucks would make daily trips to and from the project area. Estimated increases in traffic on Folsom-Auburn Road during construction include 4 to 6 worker vehicle trips each day and 10 haul truck trips each day, for a maximum of 16 trips per day. Construction would be limited to 6 days a week. This daily total would represent a less than one percent increase in traffic volume.

The weight and movement of construction traffic along Folsom-Auburn Road may result in some damage to the physical condition of the roadway surfaces. However, once the work at the placement site is completed, any damaged roadway areas would be returned to pre-project conditions by resurfacing with asphalt. As a result, there would be no long-term effects on the physical condition of area roadways. Additionally, there would be no road or lane closures, so there would be no effect on access for either local residents or emergency services in the Folsom area.

3.3 Resources Considered in Detail

Results of an initial evaluation indicated that the proposed action could affect the following resources. Sections 3.3.1 through 3.3.5 describe the existing conditions, effects, and proposed mitigation for the resources that may be significantly affected by the implementation of the proposed action. Both direct and indirect effects are evaluated.

3.3.1 Air Quality

This section describes the existing conditions for air quality, regulatory background, significance thresholds, effect analysis, and a qualitative analysis of effects.

Regulatory Background

Air quality management responsibilities exist at Federal, State, and local levels of government. The primary statutes that establish ambient air quality standards and the regulatory authorities necessary to enforce the regulations designed to attain those standards are the Federal Clean Air Act (CAA) and California Clean Air Act (CCAA). The enforcement of Federal and State air statutes and regulations is complex and the various agencies have different, but interrelated responsibilities.

The Federal Clean Air Act, which was last amended in 1990, requires the U.S. Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment (40 CFR part 50). Federal ambient air quality standards have been established for six "criteria pollutants":

- Carbon monoxide (CO),
- Ozone (O3),
- Inhalable particulate matter (PM_{10} and $PM_{2.5}$—particulates 10 microns or less in diameter and 2.5 microns or less in diameter, respectively),
- Nitrogen dioxide (NO2),
- Sulfur dioxide (SO2), and
- Lead.

Primary standards were established to promote human health with an adequate margin of safety to protect those most vulnerable such as asthmatics, infants, and elderly persons. More stringent secondary standards were established to promote human welfare to prevent impaired visibility, and building and crop damage.

The CCAA establishes California Ambient Air Quality Standards (CAAQS). These standards are more stringent than Federal standards and include pollutants not listed under Federal standards. All Federal projects in California must comply with the stricter State air quality standards. In California, the Air Resources Board (CARB) is the responsible agency for air quality regulation. The NAAQS and the CAAQS tables are available in Appendix A.

Areas are classified as either *in attainment or in nonattainment* with respect to State and Federal AAQS. These classifications are made by comparing actual monitored air pollutant concentrations to State and Federal standards. If a pollutant concentration is lower than the State or Federal standard, the area is considered to be *in attainment* of the standard for that pollutant. If pollutant levels exceed a standard, the area is considered a *nonattainment* area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated *unclassified*.

To implement Section 176 of the CAA, the USEPA issued the General Conformity Rule which states that a Federal action must not cause or contribute to any violation of the NAAQS, or delay timely attainment of air-quality standards. A conformity determination is required for each pollutant where the total of direct and indirect emissions caused by a Federal action in a non-attainment (or maintenance) area exceeds *de minimis* rates listed in the rule (40 CFR 93.153). The Federal standard and local thresholds for Sacramento County are shown in Table 2.

Table 2. Air Emission Thresholds for Federal and Local Criteria Pollutants.

Criteria Pollutant	General Conformity *De Minimis* Thresholds (tons/year)	SMAQMD Threshold (lbs/day)
NO_x	25	85
CO	100	*
SO	100	*
PM_{10}	100	*
$PM_{2.5}$	100	*
ROG	25	*

NO_x = nitrogen oxides CO = carbon monoxide SO = sulfur oxides PM_{10} = particulate matter
ROG = reactive organic gases
SMAQMD = Sacramento Metropolitan Air Quality Management District * = default to State standard
Source: www.airquality.org/ceqa/index.shtml, 2005

Local AQMDs are responsible for implementing Federal and State regulations at the local level. The project area is in the Sacramento Valley Air Basin. The air quality in the area is managed by the Sacramento Metropolitan Air Quality Management District (SMAQMD), which is included in the Sacramento Federal Ozone Nonattainment Area (SFNA) and is also subject to regulations, attainment goals, and standards of the U.S. and California EPA's.

SFNA area is designated "severe" non-attainment for NO_X. As a part of the SFNA, Sacramento County is out of compliance with the State and Federal ozone standards (SMAQMD 2010). The designate "severe" nonattainment status sets the NO_X and ROG thresholds to 25 tons/year.

Sacramento was designated as a Federal non-attainment area for PM_{10} and 24-hr $PM_{2.5}$; both standards have been met and the USEPA has recently re-designated the attainment status. SMAQMD was designated as a moderate nonattainment area for PM_{10} under the Federal CAA of 1990. This designation required the Air District to submit the PM_{10} State Implementation Plan and attain the PM_{10} air quality standard by December 31, 2000. The 1998-2000 air monitoring data showed that the Air District achieved the air quality standard for PM_{10}. Effective March 18, 2002, the USEPA officially determined that Sacramento County had attained the PM_{10} NAAQS by the attainment deadline based on PM_{10} air quality monitoring data recorded during 1998 to 2000. The USEPA formally re-designated Sacramento County attainment for the Federal 24-hour PM_{10} NAAQS, effective October 28, 2013.

On October 16, 2006, the USEPA lowered the daily $PM_{2.5}$ standard from 65µg/m3 to 35µg/m3. The USEPA designated Sacramento County non-attainment of the 35 µg /m3 standard in November 2009, effective December 14, 2009 (40 CFR 81.305). Since 2007, measures implemented by SMAQMD and others were effective and led to attainment of the standard. The USEPA issued a proposed rule for Determination of Attainment for the Sacramento Nonattainment Area on October 26, 2012 for the daily $PM_{2.5}$ standard and a final rule for Determination of Attainment on July 15, 2013. The final rule became effective on August 14, 2013 (78 FR 42018). In December 2012, the USEPA lowered the annual $PM_{2.5}$ standard from 15µg/m3 to 12µg/m3. Sacramento's annual $PM_{2.5}$ concentrations met the 12µg/m3 standard in 2011.

Toxic Air Contaminants

In addition to the Federal and State criteria pollutants, the Federal CAA and CCAA have identified another class of pollutants. Hazardous air pollutants is a term used by the Federal CAA that includes a variety of pollutants that are known or suspected carcinogens and are generated or emitted by a wide variety of industries. Ten toxic air contaminants (TAC) under the CCAA have been identified through ambient air quality data as posing the greatest health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to brain and nervous system and respiratory disorders. The TAC of interest to this project is diesel particulate matter (PM).

TACs do not have ambient air quality standards because no safe levels of TAC have been determined. Instead, TAC effects are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots" Information and Assessment Act apply to facilities that use, produce, or emit toxic chemicals. Facilities that are subject to the toxic emission inventory requirements of the Act must prepare and submit toxic emission inventory plans and reports, and periodically update those reports.

Diesel-fueled mobile sources including motor vehicles and off-road equipment emit compound emissions such as diesel PM, which is recognized as a TAC by CARB. Emissions of diesel PM have been related to long-term health effects, including noncancer chronic hazards and increased cancer risk (COEHHA 2010). There are no TAC emitting facilities within a half mile of the project area. Temporary construction activities would include operation of diesel-fueled offroad equipment resulting in emissions of diesel PM. However, construction activities would occur over a finite period of time (approximately 6 months); therefore, diesel PM emissions would result in short-term, temporary impacts, and would not result in long-term cancer risk to residents and workers. No long term operation or maintenance would be require after the rock bolts are installed, therefore the project would not expose new receptors to TAC. Because of the short-term duration of emissions, no TAC facilities nearby, and the project would not exposed new receptors to a TAC facility, a health risk assessment would not be required; thus, prioritization screening was not conducted for this analysis. Additionally, SMAQMD of Basic Construction Emission Control Practices and Enhanced Exhaust Control Practices would be implemented which would reduce PM exhaust emissions.

Existing Conditions

Sacramento County is in attainment for all National and State AAQS except for State and Federal ozone standards and State particulate matter standards. The area is designated a "severe" nonattainment area for the National 8-hour AAQS for ozone and is a "serious" nonattainment area for the State's 1-hour ozone standard. Sacramento County exceeds the State's annual PM_{10} standard by 40% and the State's $PM_{2.5}$ standard by 4% on average over the last 5 years. In addition, the State's 24-hour PM_{10} standard was exceeded up to 14 days per year over the past 5 years.

Sensitive Receptors

Some locations are considered more sensitive to adverse effects from air pollution than others. These locations are termed sensitive receptors. For CEQA purposes, a sensitive receptor is generically defined as a location where human populations are found, and there is reasonable expectation of continuous human exposure according to the averaging period for the ambient air quality standard (e.g., 24-hour, 8-hour, and 1-hour). These typically include residences, hospitals, and schools. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Hospitals, schools, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-related health problems than the general public. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation can place a high demand on the respiratory system. Sensitive receptors near the project area include residents and recreational users.

Environmental Effects

Significance Criteria

Air quality effects would be considered significant if the proposed action would:

- Violate any of the air quality standards,
- Expose sensitive receptors to substantial pollutant concentrations, or
- Not conform to applicable Federal and State standards, and local thresholds on a long term basis.

The CEQA thresholds of significance were obtained from the SMAQMD CEQA Guide to Air Quality Assessment (SMAQMD 2009), which lists only a NO_X threshold of 85 pounds per day for construction emissions. For PM_{10} from construction, in areas where the maximum daily disturbed land (i.e., grading, excavation, cut and fill) would not exceed 15 acres, the SMAQMD CEQA guidelines require implementing emission control practices for impacts to be considered less than significant.

Methodology

Emissions from off-road construction equipment and portable engines, (including off-road vehicles, portable engines and marine engines), on-site trucks, and worker vehicles were calculated based on emission factors derived from EMFAC2011. Assumptions on construction equipment for the slope protection measures are described in Section 2.3. Assumptions for ongoing construction from all JPF project phases included the equipment type, horsepower rating, model year, and actual (or projected) hours of operation. These data were input into a tool similar to SMAQMD's Construction Mitigation Calculator, which has been developed to perform the emission

calculations. The tool derives emission factors for ROG, NOx, PM_{10}, $PM_{2.5}$ and CO_2 based on user inputs.

The project area is approximately 2 acres although the actual area of work to install the rock bolts would be confined to a much smaller area (approximately one-half acre). For the maximum area disturbed, the total project footprint was averaged over the 6- month construction period. It was assumed that minimal clearing and grubbing would be required since there is minimal vegetation and a small staging area. Estimated construction periods for the slope protection measures are described in Section 2.3.

In addition, it was assumed that 2,000 cubic yards of fill material would be required for the construction of an access road. The source of the fill material could come from off-site commercial sources or from cut excavation while pioneering in the road. The transport of materials would take approximately 100 truck trips, over a course of 2 weeks with a 5-day workweek, which translates to 10 round trips per day. Air quality calculations are summarized in Appendix B.

No Action

Under the no action alternative, the Corps and CVFPB would not participate in construction of the proposed alternative. As a result, there would be no increase air quality effects from the construction activities associated with the slope protection measures including equipment emissions and fugitive dust. Air quality would be influenced by emissions due to the ongoing and future construction of other Folsom JFP features, climate and geographic conditions, and local and regional emissions from vehicles, and local commercial and industrial land uses.

Implement Slope Protection Measures

Construction of the proposed action would result in short-term temporary generation of ROG, CO, NO_X, PM_{10}, $PM_{2.5,}$ and CO_2 emissions from excavation, vegetation clearing, motor vehicle exhaust associated with construction equipment, employee commute trips, material transport, material handling and other construction activities. Annual emissions were calculated based on assumptions on the type of construction equipment required for each construction phase.

Table 3 summarizes the total emissions for ROG, CO, NO_X, PM_{10}, $PM_{2.5,}$ and CO_2, for the slope protection measures, and the projected emissions from Phase 3, and Phase 4, and compares them to both the general conformity rule (GCR) *de minimis* thresholds and the SMAQMD CEQA NO_X threshold for determination of significance of impacts.

Based on the estimates presented in Table 3, proposed action would not produce emissions that are greater than the Federal GCR *de minimis* values for criteria pollutants (Table 2). The estimated worst-case annual emissions generated from implementation of the proposed action would not exceed the Federal NOx threshold but would exceed SMAQMD threshold for NOx.

Table 3. Estimated Emissions After Mitigation.

	ROG/ VOC	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2e (metric tons/year)
Site Preparation & Construction						
Emissions (lbs/year) for all Project Phases in 2015	3,778.0	28,458.6	26,636.9	63,425.8	11,500.0	-
Total Emissions (lb/day)	20.9	158.1	147.98	352.37	63.89	-
SMAQMD thresholds (lbs/day)	N/A	N/A	85	N/A	N/A	N/A
Exceed SMAQMD Threshold?	-	-	**Yes**	-	-	-
Emissions (tons/year) of all Project Phases in 2015	1.9	14.2	13.2	31.7	5.7	39,135
Federal Standards (tons/year)	25	100	25	100	N/A	N/A
Exceed Federal threshold?	**No**	**No**	**No**	**No**	-	-

The emissions estimate places the total NOx emissions over the local threshold of 85 lbs/day. The project would implement the standard construction mitigation measures as recommended by SMAQMD and continue to include the mitigation measures as described in the 2012 SEIS/EIR to reduce NOx emissions. These measures are listed in the mitigation section below.

The proposed action is a short-term construction project which does not require continual maintenance. As a result, there would be no long-term increase in regional emissions of ROG, CO, NO_X, PM_{10}, $PM_{2.5,}$ and CO_2 after installation of the rock bolts.

The project would result in short-term generation of criteria pollutants concentrations, including diesel exhaust emissions, from the use of off-road construction equipment required for site preparation and other activities, and on-road haul trucks used for hauling materials. The duration of mobilized equipment would be approximately 6 months and mobile equipment would not operate within 500 feet of sensitive receptors. Because sensitive receptors would not be exposed to substantial pollutants, the impact would be less than significant.

General Conformity

The Federal CAA requires Federal agencies to ensure that their actions conform to applicable implementation plans for the achievement and maintenance of the NAAQS for criteria pollutants. To achieve conformity, a Federal action must not contribute to new violations of NAAQS, increase the frequency or severity of existing violations, or delay timely attainment of standards in the area of concern (for example, a state or a smaller air quality region).

The proposed action is located in an area with a designated Federal status of severe nonattainment for O3 (8-hour standard). In addition the State's has designated the area as nonattainment for PM_{10} and $PM_{2.5}$. As shown in Table 3, the proposed action would not increase emissions to the Folsom JFP project that are greater than the Federal GCR *de minimis* values for criteria pollutants. However, the Folsom JFP is expected to exceed the NOx Federal GCR *de minimis* threshold by the end of 2014. As a result, the Folsom JFP has completed a general conformity re-evaluation report. The re-evaluation report includes project emission estimates

through the completion of the Folsom JFP in 2017. Emission estimates for the slope protection measures have been included in the re-evaluation. The updated General Conformity Determination draft was advertised and provided for public, agency and EPA review for 30 days in September 2014 pursuant to 40 C.F.R. §93.158(a)(5)(i)(b). A final notification was published November 4, 2014.

Mitigation

Due to the nonattainment status of Sacramento County with respect to O_3, PM_{10}, and $PM_{2.5}$, SMAQMD (2009) recommends that projects within the basin implement a set of Basic Construction Emission Control Practices as BMPs regardless of the significance determination. Use of these practices can result in a 55 percent reduction of fugitive PM_{10} dust emissions from soil disturbance areas and a 44 percent reduction of fugitive PM dust emissions from entrained PM_{10} road dust from unpaved roads (SMAQMD 2009). The Basic Construction Emission Control Practices that would be implemented by the contractor during the construction project are the following:

- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to five minutes (as required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.
- Any remaining emissions over the NOx threshold would be reduced via a mitigation fee payment. The cost of reducing one ton of NOx starting July 1, 2014 is $17,720 per ton of emissions (SMAQMD 2014). The contractor would be responsible for payment of any required mitigation and administrative fees.

In addition, SMAQMD recommends that the project implement a set of Enhanced Exhaust Control Practices to further reduce NO_X emissions. The Enhanced Exhaust Control Practices that would be implemented by the contractor during construction include the following:

- Provide a plan for approval by the lead agency and SMAQMD demonstrating that the heavy-duty (50 horsepower [hp] or more) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, would achieve a project-wide fleet-average 20 percent NO_X reduction and 45 percent particulate reduction compared to the most recent California Air Resources Board (ARB) fleet average. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The SMAQMD's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction.
- Submit to the lead agency and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 hp, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory would include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. The inventory would be updated and submitted monthly throughout the duration of the project, except that an inventory would not be required for any 30-day period in which no construction activity occurs. 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. The SMAQMD's Model Equipment List can be used to submit this information.
- Ensure that emissions from all off-road diesel-powered equipment used on the project site do not exceed 40 percent opacity for more than 3 minutes in any 1 hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) would be repaired immediately. Non-compliant equipment would be documented and a summary provided to the lead agency and SMAQMD monthly. A visual survey of all in-operation equipment would be made at least weekly, and a monthly summary of the visual survey results would be submitted throughout the duration of the project, except that the monthly summary would not be required for any 30-day period in which no construction activity occurs. The monthly summary would include the quantity and type of vehicles surveyed as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section would supercede other SMAQMD or State rules or regulations.

The Corps would continue to implement the following mitigation measures to reduce the potential air quality effects of the project as described in the 2012 SEIS/EIR:

- Model year 2010 or newer haul trucks will be used for the duration of the project. Use of these trucks will provide the best available emission controls for NOx and PM emissions.

- All off-road diesel-powered construction equipment greater than 50 horsepower shall meet Tier-4 off road emission standards at a minimum. In addition, if not already supplied with a factory-equippe d diesel particulate filter, all construction equipment shall be out fitted with BACT devices certified by CARB.

- Construction equipment shall incorporate emissions-reducing technology such as specific fuel economy standards. Idling shall be restricted to a maximum of 5 minutes, except as provided in the CARB 13CCR, Section 2485 exceptions.

3.3.2 Climate Change

Ongoing scientific research has identified the general impacts of anthropogenic green house gasses (GHG) emissions and changes in biological carbon sequestration due to land management activities on global climate. The term "greenhouse gas" or "greenhouse gases" includes but is not limited to: carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (NO_2).

GHG naturally trap heat by impeding the exit of solar radiation that has hit the Earth and is reflected back into space. Some GHGs occur naturally and are necessary for keeping the Earth's surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

Through complex interactions on a regional and global scale, these GHG emissions and net losses of biological carbon sinks cause a net warming effect on the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for millennia, historic industrialization and burning of fossil carbon sources have caused carbon dioxide equivalent concentrations to increase dramatically, and clearly contribute to overall global climatic changes. The Intergovernmental Panel on Climate Change (IPCC) concluded that "warming of the climate system is unequivocal" and "most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations" (IPCC 2007).

Global mean surface temperatures have increased nearly 1.8 degrees Fahrenheit (°F) from 1890 to 2006 (IPCC 2007). Models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Northern latitudes (above 24° North) have exhibited temperature increases of nearly 2.1 degrees Fahrenheit (°F) since 1900, with nearly a 1.8°F increase since 1970 alone (IPCC 2007). Continued warming is projected to increase global average temperature between 2 and 11°F over the next 100 years.

Regulatory Background

No Federal regulations regarding climate change apply to the proposed action. The Environmental Protection Agency has started the process of regulating large sources of GHG emissions (e.g., power plants, cement manufacturing), but these proposed regulations are not applicable to the proposed action. California laws and executive orders that address GHGs and climate change are summarized in Table 4.

Table 4. Summary of State Laws and Executive Orders that Address Climate Change.

Legislation Name	Signed into Law/ Ordered	Description	CEQA Relevance
SB 1771	09/2000	Establishment of California Climate Registry to develop protocols for voluntary accounting and tracking of GHG emissions.	In 2007, DWR began tracking GHG emissions for all departmental operations.
AB 1473	07/2002	Directs CARB to establish fuel standards for noncommercial vehicles that would provide the maximum feasible reduction of GHGs.	Reduction of GHG emissions from noncommercial vehicle travel.
SB 1078, 107, EO S-14-08	09/2002, 09/2006, 11/2008	Establishment of renewable energy goals as a percentage of total energy supplied in the State.	Reduction of GHG emissions from purchased electrical power.
EO S-3-05, AB 32 [1]	06/2005, 09/2006	Establishment of statewide GHG reduction targets and biennial science assessment reporting on climate change impacts and adaptation and progress toward meeting GHG reduction goals.	Projects required to be consistent with statewide GHG reduction plan and reports will provide information for climate change adaptation analysis.
SB 1368	9/2006	Establishment of GHG emission performance standards for base load electrical power generation.	Reduction of GHG emissions from purchased electrical power.
EO S-1-07	01/2007	Establishment of Low Carbon Fuel Standard.	Reduction of GHG emissions from transportation activities.
SB 97[1]	08/2007	Directs OPR to develop guideline amendments for the analysis of climate change in CEQA documents.	Requires climate change analysis in all CEQA documents.
SB 375	09/2008	Requires metropolitan planning organizations to include sustainable communities strategies in their regional transportation plans.	Reduction of GHG emissions associated with housing and transportation.

Legislation Name	Signed into Law/ Ordered	Description	CEQA Relevance
EO S-13-08 [1]	11/2008	Directs the Resource Agency to work with the National Academy of Sciences to produce a California Sea Level Rise Assessment Report, and directs the Climate Action Team to develop a California Climate Adaptation Strategy.	Information in the reports will provide information for climate change adaptation analysis.

[1]Significant laws and orders.

Existing Conditions

Local Climatic Conditions

In general, the climates of California formed due to topography and the position of the semi-permanent subtropical cell, a center of high atmospheric pressure in the Pacific Ocean off the California coast. During the summer, the cell moves over northern California and Nevada and effectively blocks the movements of the Pacific storm systems into California, creating drought-like conditions. During the winter, the cell retreats to the southwest, allowing storms and frontal systems to move into northern and central California. As a result, California has a Mediterranean, semi-arid climate that is typically characterized by cool, wet winters and hot, dry summers.

During the summer months the project area (in the vicinity of Folsom Reservoir) normally experiences cloudless, warm-to-hot dry days, and mild, pleasant nights. Summer temperatures average approximately 90 degrees Fahrenheit (ºF) during the day and 60 ºF at night. Summer average rainfall amount in the area is generally around 1.05 inches. The winter "rainy season" is from November through March when periodic storms move in from the Pacific Ocean. The average rainfall during these months is 19.96 inches. Winter daytime temperatures average in the upper 50's, and nighttime temperatures average in the lower 40's. Moist winds are predominately from the southwest, building strength from the Delta region, while occasional dry winds originate from the north.

Greenhouse Gases (GHG)

The six principal GHGs of concern are CO_2, methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFC), and perfluorocarbons (PFC). The EPA does not currently regulate the GHG pollutants that could contribute to global warming. However, on December 7, 2009, the Administrator of the EPA signed two findings regarding the threat to public health and welfare from GHGs under section 202(a) of the Federal CAA. Accordingly, in the future, the EPA can promulgate regulations pertaining to emissions of GHGs under the authority of the Federal CAA.

While the Federal Government has not regulated emissions of GHG, the State of California has been proactive in the study of effects of climate change with a 20-year history of doing so. State actions to address global climate change target automobile emissions, stationary sources and power generation, land-use planning, and the development of sustainable communities.

California is a substantial contributor of global GHG as it is the second largest contributor in the U.S. and the sixteenth largest in the world (CEC 2006). While California has a high amount of GHG emissions, it has low emissions per capita. California produced in 2008 approximately 478 million metric tons of CO_2 equivalent (478 $MMTCO_2e$), equal to about 525 million tons, or about one percent of 49,000 $MMTCO_2e$ emitted globally (IPCC, 2007). The main sources of GHG emissions in California are the transportation and energy sectors.

GHG emissions are now being considered as a relatively new issue in CEQA documents because of their effects to climate change. Historically, there have been no standard, widely used methodologies or significance criteria to address climate change effects from GHG emissions. Air districts have generally provided guidance on analysis methodologies and significance criteria for criteria pollutant and toxic air contaminant effects, but they have not established guidelines for GHG emissions and their effects.

To assist lead agencies with this new impact area, the California Air Pollution Control Officer's Association prepared a "white paper" reviewing policy choices, analytical tools, and mitigation strategies (CAPCOA 2008). This paper considers the application of thresholds (there are currently no widely-accepted significance thresholds or criteria) and offers three alternative programmatic approaches towards determining whether GHG emissions are significant.

CARB prepared proposed interim GHG significance thresholds, which are sector-specific in terms of what types of activities generate the GHG emissions. Until a statewide standard or threshold of significance for GHG emissions is completed, the Office of Planning and Research (OPR) advises that each lead agency should develop its own approach to performing an analysis for projects that generate GHG emissions, consistent with available guidance and current CEQA practice (OPR 2008).

OPR sets out the following process for evaluating GHG emissions:

- Agencies should determine whether GHG emissions would be generated by a proposed project, and if so, quantify or estimate the emissions by type or source. Calculation, modeling, or estimation of GHG emissions should include the emissions associated with vehicular traffic, energy consumption, water usage, and construction activities.
- Agencies should assess whether the GHG emissions are individually or cumulatively significant. When assessing whether a project's effects on climate change are "cumulatively considerable" even though a project's GHG emissions could be individually limited, the lead agency must consider the effect of the project in connection with the effects of past, current, and probable future projects.

If the lead agency determines that the GHG emissions are potentially significant, then it must investigate and implement ways to mitigate the emissions (OPR 2008).

"The lead agency must impose all mitigation measures that are necessary to reduce GHG emissions to a less than significant level. CEQA does not require mitigation measures that are infeasible for specific legal, economic, technological, or other reasons. A lead agency is not responsible for eliminating all GHG emissions from a project; the CEQA standard is to mitigate to a level that is "less than significant" (OPR 2008)."

Environmental Effects

Significance Criteria

No existing threshold levels for GHGs have been developed at the Federal level for NEPA projects. SMAQMD has not established thresholds for GHG emissions; instead, each project is evaluated on a case-by-case basis using the most up-to-date methods of calculation and analysis. The impacts of the proposed project alternatives related to climate change should be evaluated using the criteria listed below. According to Appendix G of the CEQA Guidelines, the proposed project could result in significant impacts if it would do either of the following:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The following significance criteria will be used to determine the significance of GHG emissions from this project:

- If the relative amounts of GHG emissions resulting from implementation of the proposed project are substantial compared to emissions major facilities are required to report (25,000 metric tons CO_2e per year).

- If the proposed project has the potential to contribute to a lower carbon future.

No existing threshold levels for GHGs have been developed at the Federal level for NEPA projects. USEPA has established a reporting threshold of 25,000 metric tons of CO_2 that applies to major facilities that emit more than 25,000 metric tons per year.

Methodology

In response to the increased construction activities and schedule changes in 2014, a General Conformity reevaluation report update was conducted to address air quality emissions. GHG emissions were updated separately and include the slope protection measures and the overall JFP Project emissions as a whole (Appendix B).

The Air Quality Technical Report from the 2012 SEIS/EIR was used as the basis for the update of CO_2 emissions. CO2 emissions and CO_2 equivalents including methane CH_4 and nitrous oxide N_2O were estimated from various emission models and spreadsheet calculations, depending on the source of the emission and data availability. Direct emissions from off-road construction equipment, marine engines, haul trucks, on-site pickup trucks and indirect emissions from electricity usage were calculated. Mitigation measures from the 2012 SEIS/EIR were incorporated into the models. The methods and models used are summarized below.

Off-road construction equipment. Emissions were calculated from equipment lists received from the Contractor and the Corps that were then inputted into a tool similar to SMAQMD's Construction Mitigation Calculator. For off-road vehicles and portable engines, the tool calculates emissions based on CARB's OFFROAD2011 model. CO_2 emissions were calculated using brake-specific-fuel-consumption contained in the OFFROAD 2011, and CH_4 and N_20 emissions were calculated based on data contained in The Climate Registry's "Climate Registry Default Emission Factors", release April 11, 2014 (TCR 2014).

Marine Engines. Emissions were calculated using CARB's California Barge and Dredge emissions Inventory Database and incorporated into the SMAQMD's calculator to derive project emissions. Tier 2 or Tier 3 certified marine engines were used as a basis for these calculations.

Haul trucks, On-site Pickup Trucks,and Worker Vehicles. Derived from CARB's EMFAC 2011, emissions were calculated based on the model year, number of trips, and round trip distances of each truck trip. Emission factors were based on the aggregated fleet (i.e. all model years) projected to be operating in the Sacramento Valley Air Basin during each calendar year. GHG emissions were then determined from EMFAC2011 and from emission factors contained in the Climate Registry Default Emissions Factors (TCR 2014).

Indirect emission. Indirect emissions include emissions from power plants producing electricity for use on site. These include rock crushing and producing cement in the use of concrete. Emissions were derived using SMUD emission factors contained in the California Emission Estimation model (CalEEMod), version 2013.2.2.

No Action

Under the no action alternative, the Corps and CVFPB would not participate with slope protection measures. As a result, there would be no additional generation of GHGs from the construction activities, including operation of motorized equipment and vehicles. Climate change would be influenced by emissions due to the ongoing and future construction of other Folsom JFP features, local and regional emissions from vehicles, and local commercial and industrial land uses.

Implement Slope Protection Measures

Implementation of the slope protection measures would result in a net increase of GHG emission over a finite period, approximately six months. Construction activities would contribute small amounts of CO_2 emissions from the use of on-site construction equipment and off-site

worker trips. Construction emissions were estimated using various models, equipment lists and spreadsheets. Table 3 in Section 3.3.1 summarizes CO_2e emissions from activities undertaken from construction of the overall JFP project in 2015. In addition, Appendix B shows the estimated emissions for the slope protection measures from off road equipment construction and activities. Approximately 192 metric tons of CO_2e from off-road equipment activities would be emitted during the construction period of the slope protection measures. There would be no long term operation or maintenance emissions associated with the slope protection measures.

In the year 2015, it was estimated the total CO_2 emissions for all Folsom JFP project phases would emit approximately 39,135 metric tons CO_2. This total amount of CO_2e emissions exceeds the USEPA 25,000 metric tons CO_2e per year reporting rule used as significance criteria for CEQA in this document.

While projections for CO_2e have the potential to exceed the annual threshold of 25,000 metric tons CO_2e, these emissions calculations are considered conservative estimates. These estimates reflect the worst case conditions for weather, planning, timing, and avoidance of problems on the site. During 2015, CVFPB staff would monitor Folsom JFP emissions in order to realize any exceedances of thresholds and implement feasible mitigation measures.

If the Folsom JFP CO_2e emissions exceed the threshold, a GHG Mitigation Plan (Plan) would be developed by CVFPB staff and implemented to reduce construction related GHG emissions to less than 25,000 metric tons CO2e /year. The Plan would consist of feasible mitigation measures in which one mitigation measure or a multitude of mitigation measures could be implemented to reduce impacts to less than significant. To be considered less than significant, mitigation measures would need to reduce emissions to less than 25,000 metric tons CO2e/year. A list of potential mitigation measures are listed in the mitigation measure section below. Consequently, if emissions exceed thresholds, then impacts would be reduced to less than significant with mitigation.

The Climate Change Scoping Plan, approved by CARB on December 12, 2008 (CARB, 2008), and updated May 15, 2014, provides an outline of actions to reduce California's GHG emissions. The scoping plan requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs to meet the GHG reduction goals (GHG reduction to 1990 levels by 2020). Furthermore, executive order (E.O.) S-3-05 establishes California's goal to reduce GHG emissions to 1990 levels by 2020 and 80% of 1990 levels by 2050, while Sacramento County's Climate Action Plan suggests about a 13-15% reduction in GHGs by 2020 to meet their reduction goal.

To date, no definitive threshold across California to meet these goals has been established. Instead, State and local agencies have provided countless guidance documents and plans on how to reduce GHG emissions in their delegated area/region and comply with their air attainment plans or general plans. For CEQA purposes, lead agencies should make a good faith effort, based on the best available science and facts to describe, calculate or estimate the amount of greenhouse gases from the project (CEQA Section 15016.4). In the case of the Folsom JFP, the USEPA 25,000 metric ton CO2e annual reporting rule was used as the best available science to establish significance criteria.

The Scoping plan and update aim to develop California's strategy to meet AB 32's goal to reduce GHG emissions to 1990 levels by 2020, and E.O. S-3-5 goal to further reduce 1990 levels by 80% by 2050. The Folsom JFP emissions are short term construction emissions, and the project is expected to have long term benefits from the prevention of extra carbon production from the demolition, repair and reconstruction of flood induced infrastructure losses associated with a catastrophic flood event. The short term construction emissions (through October 2017) are expected to be minimal when averaged over the life span of the Folsom JFP and compared to the carbon production prevented from catastrophic flooding. In addition, BMPs would be incorporated in the design of the work (slope protection measures) and implemented by the contractor.

With implementation of mitigation measures, BMPs, and prevention of extra carbon from the operation of the Folsom JFP, the project would contribute to a lower carbon future. By contributing to a lower carbon future, the Folsom JFP is expected to remain consistent with applicable GHG reduction plans, policies, or regulations. Therefore, slope protection measures, inclusive of the overall Folsom JFP project, will be less than significant.

Mitigation

CO_2e emissions will be monitored by CVFPB. If Folsom JFP CO_2e emissions exceed 25,000 metric tons of CO_2e/year, then feasible mitigation measures would be required to reduce GHG emissions to less than significant.

The following measures could be implemented by the Contractor, Corps, and/or CVFPB to reduce GHG emissions from construction design refinements (SMAQMD 2009) to less than significant and contribute to a lower carbon footprint.

- Improve fuel efficiency from construction equipment by minimizing idling time either by shutting equipment off when not in use or reducing the time of idling to no more than three minutes (five minute limit is required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
- Use equipment with new technologies (repowered engines, electric drive trains).
- Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).
- Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.

- Implement a GHG reduction Plan. Feasible mitigation measures within the plan would be implemented if GHG emissions exceed 25,000 metric tons CO_2e/year. These measures could include:
    - Purchase of low carbon fuel
    - Purchase of CO_2 offsets to mitigate GHG emissions to less than 25,000 metric tons CO_2e. Potential offsets could be purchased from the following sources:
        - AB 32 U.S. Forest and Urban Forest Project Resources
        - AB 32 Livestock Projects
        - AB 32 Ozone Depleting Substances Projects
        - AB 32 Urban Forest Projects
        - Other-California Based Offsets
        - United States Based Offsets
        - International Offsets (e.g., clean development mechanisms)
    - Funding incentive programs from SMAQMD or supplementing existing programs such as Sacramento Emergency Clean Air Transportation (SECAT) program to obtain GHG reductions
    - Use of low carbon concrete if economically feasible and engineering feasible.

3.3.3 Cultural Resources

Regulatory Setting

Federal

Prior to implementation of an undertaking with the potential to cause effects to historic properties, the project must be in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR § 800). Section 106 requires Federal agencies, or those they fund or permit, to consider 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 NRHP-eligible or listed properties, cultural resources (including archeological, historical, and traditional cultural properties) must be inventoried and evaluated for listing in the NRHP. The term "historic property" specifically refers to a cultural resource that has been found eligible for listing in, or is listed in, the NRHP.

State

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

Existing Conditions

The history of Folsom as a city connects back to several broader themes that have been prevalent in California history: mining, railroads, and early farming and agriculture. The following summary is specific to the historic presence of the Native Americans, the development of Folsom Dam, and the city of Folsom and helps to place it within the history of the region and the State.

Ethnography and Prehistory

The Nisenan were a southern linguistic group of the Maidu people, sometimes referred to as the "Southern Maidu." The name "Nisenan" was a self-designation by the native groups occupying the Yuba and American River drainages (Wilson and Towne 1978). Along with the Maidu and Kinkow, the Nisenan form a subgroup of the California Penutian linguistic family. The Nisenan's range covered a significant portion of the Central Valley and reached into the Sierra Nevada Mountains.

The climate of the area occupied by the Nisenan was of mild weather with wet winters and warm, dry summers. The Nisenan often inhabited areas near rivers, some major areas of significance included sites on the American, Sacramento, Bear, Feather, and Yuba Rivers (Moratto 1984). The basic political unit was a village community or tribelet with one primary village and a few satellite villages under one head authority. Villages within the valley were aware of one another and these varying groups of Nisenan had shared political and cultural connections. Generally, villages consisted of 15 to 20 people and as many as several hundred in one group. House structures were conical, dome shaped, and covered with earth, tule mats, grass thatch, and occasionally bark. These structures, along with the ceremonial lodges or chief's residences, which were large and circular or elliptical, would be situated on low knolls near streams and above marshy floodplains.

The Nisenan mostly settled in permanent or winter settlements and followed a yearly gathering cycle that led them away from the lowlands and into the hill country each summer. During the annual gathering cycle, the Nisenan harvested acorns, nutmeg, pine nuts, buckeyes, and sunflower seeds and often stored these for long periods. Other vegetation, such as greens, tule and cattail roots, brodiaea bulbs, manzanita berries, black berries, and California grapes, was harvested and eaten as it ripened. All valley groups, including the Nisenan, fished trout, perch, chub, sucker, hardhead, eels, Sturgeon, and Chinook salmon. Fishing methods included hook, net, harpoon, trap, weir, and poison (Moratto 1984). The Nisenan crafted tools from stone such as obsidian and basalt to make flaked stone knives and projectile points. They also made ground stone tools such as mortars, pestles, pipes, and charms from locally available rock. Using wood, bone, and plant material, the Nisenan also made weapons, bows, arrow shafts, paddles, canoes, rafts, fishing nets, and baskets (Wilson and Towne 1978).

Early contact occurred at the southern end of Nisenan territory as the Spanish, notably José Canizares in 1776, explored Miwok land. Although there is no record of the Nisenan removal to the Spanish missions, by the late 1820s, white settlement began to encroach on Nisenan land as American and Hudson's Bay Company trappers began to trap beaver in the Nisenan territory under

peaceful occupation. In 1833, a disease, believed to be malaria, swept through the Sacramento Valley and decimated the valley Nisenan. An estimated 75 percent of the native population was killed; as a result, there were very few Nisenan left in the valley to face the settlers and gold miners who came soon after the epidemic (Hoover 1990).

History

By January 1850, the discovery of gold in Coloma in 1848 had encouraged development in the Sacramento area. Shortly after the initial discovery of gold, a group of Mormons previously employed by Sutter to work his mill were mining for riches near Folsom. At the juncture of the North and South Forks of the American River, the town of Mormon Island was established around 1848 by Samuel Brannan and a group of about 100 men. By 1855 a small town was flourishing, populated with 2,500 people and complete with two stage lines, a post office, a school, four hotels, seven saloons, and more than a dozen other businesses. The completion of the Sacramento Valley Railroad to Folsom in 1856 marked the firm establishment of Folsom as a destination and began the slow decline of Mormon Island. By 1880 the mining community had disappeared.

The early history of Folsom includes founders such as William Alexander Leidesdorff and Joseph Libby Folsom. Both individuals helped establish the city of Folsom, downstream of the current Folsom Dam. In 1856, Theodore Judah surveyed and laid out the city of Folsom where the 2,048 lots sold in the first day and the city began to flourish.

Mining continued to draw people to Folsom. By 1878, Folsom had a sizeable Chinese population, numbering more than 3,500. With the population continuing to rise, in 1870 Horatio Livermore devised and implemented a project to dam the American River and provide power to Folsom. Completed in 1893 with the use of convict labor from Folsom Prison, the original Folsom Dam provided local power as well as electricity to Sacramento, located 22 miles downstream. There are remnants the Old Folsom Dam just downstream of the current dam and Folsom Lake Crossing Bridge.

Mining activities took the form of dredging operations in 1900 and the population of Folsom slowly grew in the beginning decades of the new century. Eventually water resource needs for the region increased above what the Old Folsom Dam could provide. Although the town of Mormon Island disappeared decades earlier, there were a number of farmers occupying and utilizing the land at and near the juncture of the North and South Forks of the American River at the time of the construction of Folsom Dam (Folsom History Museum 2006).

Folsom Dam, reservoir, and the surrounding area have had an important role in the history of water and growth in California. During the 1920s, drought, water rights, and lack of sufficient storage facilities endangered the State's agricultural future. As a result, the Central Valley Project (CVP) was designed and constructed. Before the construction of Folsom Dam, there was great concern in the Sacramento region about potential flooding if both the Sacramento and American Rivers should ever crest at the same time.

Construction began on Folsom Dam in 1948 under contracts supervised by the Corps. In 1956, the dam joined the overall CVP, and USBR took possession of the dam for operation and

maintenance on May 15, 1956. The addition of the dam to the CVP operations added significant reservoir size to the dams on the Trinity, American, and Stanislaus Rivers. As a component of the CVP, Folsom Dam has been a significant contributor to the water and agricultural history of California. As an individual structure, Folsom Dam has had an important effect on flood control in the Sacramento region (Bailey 2005).

Records and Literature Search and Archeological Field Survey

A records and literature search was conducted at the North Central Information Center located at California State University, Sacramento in March 2014. The records search indicated that several areas near the area of potential effects (APE) have previously been surveyed for cultural resources. The only known historic property near the APE is Folsom Dam (CA-SAC-937-H), including the left and right wing dams (CA-SAC-1103-H), which are contributing features to Folsom Dam. Folsom Dam was found eligible for listing in the NRHP in 2006 under Criterion A due to its role in flood control, hydropower, and irrigation in the Sacramento region and it is eligible as a contributing element to the larger Central Valley Project. Corps archeology staff surveyed the project area on March 25, 2014. The survey resulted in the discovery of a single, isolated bedrock mortar located within the APE. The bedrock mortar was evaluated by Corps staff and determined to lack significance under criteria a, b, c, or d due to its disturbed context; lack of integrity with regard to setting, feeling, and association; and lack of an associated site.

Native American Coordination

Letters documenting the APE and describing the project activities were sent to local Tribes including the Shingle Springs Band of Miwok Indians, the United Auburn Indian Community of the Auburn Rancheria, Wilton Rancheria, and the T'si-Akim Maidu on June 2, 2014. Any responses received would be included in the final EA/EIR.

Environmental Effects

Significance Criteria

Any adverse effects on cultural resources that are listed in or eligible for listing in the NRHP are considered to be significant. Effects are considered to be adverse if they alter, directly or indirectly, any of the characteristics of a cultural resource that qualify that resource of the NRHP so that the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association is diminished. The criteria for the NRHP (36 CFR 60.4) are listed below:

a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

b) that are associated with the lives of persons significant in our past; or

c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic

values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d) that have yielded, or may be likely to yield, information important in prehistory or history.

In California, under CEQA, effects to a historic resource or unique archeological resource are considered to be adverse if they materially impair the significance of a historical or archeological resource.

No Action

Under the no action alternative, the Corps and CVFPB would not implement the slope protection measures proposed in the Supplemental EA/EIR. Turbulent flow conditions along the right bank side of the American River could result in the displacement and/or release of large blocks of rock. This could result in a partial blockage/obstruction of flow; a rise in tailwater elevation, affecting power generation; and the potential for progressive failure of the upper bank slope. However, since there are no historic properties within the APE, the No Action alternative would not result in adverse effects to historic properties.

Implement Slope Protection Measures

The proposed action would have no adverse effects on any cultural resources that are listed in or eligible for listing in the NRHP. Access to the site would be from the west of the project area via the existing Folsom-Auburn Road. Access to the project area would be controlled by the Bureau of Reclamation's Central California Area Office facility. Construction and staging areas would be confined to previously disturbed areas and existing roads surveyed by Corps staff.

Folsom Dam and Dikes, resources eligible for listing in the NRHP, are located outside the APE, and the current proposed project would not alter directly or indirectly any of the characteristics that make the resources eligible for listing in the NRHP. As a result, there would be no adverse effects to Folsom Dam and Dikes caused by the proposed action.

The bedrock mortar identified during the survey of the APE has been determined not eligible for listing in the NRHP under criteria a, b, c, or d. As a result, and in accordance with the implementing regulations of Section 106 of the NHPA, 36 CFR § 800.4(d)(1), *No historic properties affected*, there are no historic properties present within the APE and the project would not have the potential to adversely effects to historic properties. A Memorandum for Record documenting this determination is included in Appendix C. Therefore, effects of construction activities on cultural resources is less than significant.

Mitigation

For the proposed action there would be no adverse effects to cultural resources and no mitigation would be required. Should any potentially significant cultural resources be discovered during construction, all ground-disturbing activities would cease in the area of the discovery, and

the Corps would take action as required by 36 CFR 800.13(b), "discoveries without prior planning." Data recovery or other mitigation measures could be necessary to mitigate adverse effects to significant cultural resources. Implementation of mitigations measures, which could include avoidance and recordation or evaluation of a previously unidentified historic property by a qualified archeologist, would reduce these effects to less than significance.

3.3.4 Special Status Species

This section describes the existing conditions of the special species that could be affected and evaluates the effects of the proposed project on special status and their habitats in the project area.

Regulatory Background

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 (50 CFR 17) 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.
- Essential Fish Habitat listed under the Magnuson-Stevens Act.

Existing Conditions

A listing of Federally listed endangered, threatened, proposed, and candidate species (listed species) and critical habitat was obtained for the Folsom and Clarksville 7.5-minute USGS quadrangles on January 24th 20014 via the FWS website. In addition, a search of the California Natural Diversity Database (CNDDB) conducted on January 24th 2014 indicated no state or federal listed species were reported within the project boundaries. However, the CNDDB report showed a Swainson's hawk (*Buteo swainsoni***)** nest within 1.5 miles of the project boundary. Biological field surveys conducted by USBR identified coopers hawk and a white tailed kite within two miles of the project area (USBR 2009). A compiled list from both the USFWS and CNDDB searches is presented in Appendix D.

Special-status species that were not identified as occurring or having habitat in the project area are not discussed further in this document. The following federal and state listed terrestrial special-status species were identified as having the potential to occur in the vicinity of the project area and be impacted by construction activities:

- Swainson's Hawk (State Threatened);
- Coopers Hawk (State Species of Concern);
- White-tailed Kite (CDFW Fully Protected);
- Valley elderberry longhorn beetle (Federal Threatened) and Critical Habitat.

Elderberry shrubs (*Sambucus sp.*) were also identified within the project area. Although the site is not designated as critical habitat for the valley elderberry longhorn beetle (VELB) (*Desmoceros californicus dimorphus*), the shrubs are the sole host plant for the beetle. An elderberry survey was conducted on July 1st 2013.

Swainson's hawk

Swainson's hawk (*Buteo swainsoni*) is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and the Mojave Desert. Swainson's hawk breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley and forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. Swainson's hawks breed in California and over winter in Mexico and South America. Swainson's hawks usually arrive in the Central Valley between March 1 and April 1, and migrate south between September and October. Swainson's hawks nest 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. Valley oak, Fremont cottonwood, walnut, and large willow with an average height of about 58 feet, and ranging from 41 to 82 feet, are the most commonly used nest trees in the Central Valley. Suitable foraging areas for Swainson's hawk include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Swainson's hawks primarily feed on voles; however, they will feed on a variety of prey including small mammals, birds, and insects.

Construction of the project is scheduled for Summer 2015. Additional raptor surveys will be conducted in Spring 2015 to determine if the Swainson's hawk are present and nesting. If nest are discovered within one-half mile of the project area, consultation will be initiated with the California Department of Fish and Wildlife (CDFW).

Cooper's hawk

Cooper's hawk (*Accipiter cooperii*) 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. Cooper's hawks 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.

White-tailed Kite

White-tailed kite (*Elanus leucurus*) is a common to uncommon, yearlong resident in coastal and valley lowlands and is rarely found away from agricultural areas. However, it does inhabit herbaceous and open stages of most habitats, mostly in cismontane California. The main prey of white-tailed kite is voles and other small, diurnal mammals, but it occasionally preys on birds, insects, reptiles, and amphibians. White-tailed kite forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. Nests are made of loosely piled sticks and twigs and lined with grass, straw, or rootlets and placed near the top of a dense oak, willow, or other tree stand; usually 6-20 m (20-100 ft) 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 kite are recorded as occurring at a couple of locations along Empire Ranch Road and the riparian habitat in the vicinity of the project area provides suitable nesting habitat for this species.

Valley Elderberry Longhorn Beetle

The VELB is endemic to the riparian habitats in the Sacramento and San Joaquin Valleys where it resides on elderberry plants. The beetle's current distribution is patchy throughout the remaining riparian forests of the Central Valley from Redding to Bakersfield (USFWS 1984). The beetle is a pith-boring species that depends on elderberry plants during its entire life cycle. The beetle tends to be located in population clusters that are not evenly distributed across the Central Valley (Barr 1991). In October 2012, the USFWS announced their proposed rule to remove the valley elderberry longhorn beetle from the List of Endangered and Threatened Wildlife. In January 2013, the USFWS reopened the public comment period for additional 30-days.

A total of 7 elderberry shrubs were identified with in the project area during biological surveys conducted July 1st 2013, and April 3, 2014. It is assumed more elderberry shrubs exist downstream of the outflow channel, however, only those shrubs located within 100 feet of the affected project area were surveyed in accordance with FWS survey protocols. As a part of their recovery plan, the Service has concluded that two areas in Sacramento County should be

designated Critical Habitat for VELB based on the densest know population of the beetle. The project area is not located within critical habitat.

Environmental Effects

Significance Criteria

Adverse effects on special status species were considered significant if an alternative would result in any of the following:

- 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.
- 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.
- 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.
- Have an adverse effect on a species' designated critical habitat.

No Action Alternative

Under the no action alternative, the Corps and the CVFPB would not participate in construction of the proposed alternative. There would be no construction related effects to special status species and their associated habitat, and conditions in the project area would remain the same.

Implement Slope Protection Measures

Implement slope protection measures could result in direct and indirect affects to Swainson's hawk, Cooper's hawk and white-tailed kite. The project could also directly and indirectly affect the habitat (elderberry shrubs) of the federally-listed valley elderberry longhorn beetle. These effects could be considered significant to these special status species unless mitigated.

Effects to Swainson's hawk, Cooper's hawk, and White-tailed kite. Construction activities could potentially result in direct and indirect effects to the Swainson's hawk, Cooper's hawk, and white-tailed kite if they begin nesting in the adjacent areas. Construction activities in the vicinity of a nest have the potential to result in forced fledging or nest abandonment by adult kites. Preconstruction surveys would be conducted to determine if there are nests present within 1,000 feet of the project area. If the survey determines that there are active nests in the project area, CDFW would be contacted to determine the proper course of action. If necessary, a buffer would be delineated and the nests would be monitored during construction activities. With coordination and mitigation, as discussed below, it is anticipated that effects to Swainson's hawk, Cooper's hawk, and white-tailed kite would be less-than-significant.

Effects to Valley Elderberry Longhorn Beetle. The proposed slope protection could result in indirect effects to seven elderberry shrubs. Indirect effects would include physical vibration and increase in dust during operation of equipment and trucks during construction activities.

The proposed project would require a crane to rappel workers and drilling equipment to the lower slope. A crane pad would be constructed in the project area. Staff from the Corps conducted elderberry surveys on July 1st 2013. The project area has a total of 4 elderberry shrubs. Three shrubs are all located near the powerhouse road and one elderberry shrub is located on the mid-slope near the potential access road. The shrubs will not be directly impacted by the construction work, but to avoid damage to the shrubs, they will be protected in place with concrete barriers. The barriers will protect the shrubs from damage by the equipment. The barriers will be placed as far from the dripline of the shrubs as possible. Due to the limited options for locating the staging area, as well as the limited space within the staging area, it would be difficult to observe the required a 100-foot radius buffer zone for protection of the elderberry shrubs. The Corps is proposing a 20-foot radius buffer zone, using concrete barriers for protection.

Mitigation

The following mitigation measures would be implemented to reduce the potentially significant effects associated with the proposed project to less-than-significant.

Swainson's hawk, Cooper's hawk, and White-tailed kite

The Corps take steps to avoid and minimize impacts to raptors and other protected avian species. If possible, construction would be timed to avoid activities near active bird nests in the area. A qualified biologist would survey the project area and all areas within one-half mile of the project prior to initiation of construction. If the survey determines that a nesting pair is present, the Corps would coordinate with the California Department of Fish and Wildlife, and the proper avoidance and minimization measures would be implemented. To avoid potential effects to nesting Swainson's hawks, the California Department of Fish and Wildlife typically requires the avoidance of nesting sites during construction activities. These measures include avoiding construction during the breeding season and monitoring of the nest site by a qualified biologist. The project is currently scheduled to begin in Summer of 2015.

Twelve trees (cottonwoods, willow species, and black locust) in the project area have the potential to be removed or may require minor trimming along the proposed access road. During the site survey, no nests were located in those trees; therefore no nests would be destroyed. The proposed mitigation measures would reduce the effects on the Swainson's hawk, white-tailed kite and Cooper's hawk to less than significant.

To ensure that there would be no effect, pre-construction surveys would be conducted by qualified biologists in areas that may contain suitable habitat for special-status plant, invertebrate, or wildlife species. If the biologists identify any of these special status species or suitable habitat, the Corps would contact the USFWS regarding any necessary measures to provide protection.

Valley Elderberry Longhorn Beetle

Formal consultation under Section 7 of the Endangered Species Act was initiated with the USFWS to assess potential impacts and required compensation. To minimize potential take of the valley elderberry longhorn beetle, the following measures taken from the USFWS "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 will be established, if possible. If the100 foot minimum buffer zone is not possible, the next maximum distance allowable will be established. Due to the limited options for locating the staging area and access road, it would be difficult to observe the required 100-foot radius buffer zone for protection of the elderberry shrubs. The Corps is proposing a 20-foot radius buffer zone, using concrete barriers for protection. These areas would be fenced, flagged and maintained during construction.

- Construction personnel would receive USFWS-approved worker environmental awareness training to ensure that workers recognize elderberry shrubs and VELB. The training would include status, the need to avoid adversely affecting the elderberry shrubs, avoidance areas and measures taken by the workers during construction, contact information and possible penalties for not complying with these requirements.

- Exclusion fencing would be placed around the shrubs to keep equipment and workers away. A biological monitor would provide instruction on establishing the buffer zone 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.

Formal consultation has been completed with USFWS (Appendix E). An amended Biological Opinion (BO) was issued on March 31, 2014 and June 10, 2014. The protective measures listed above are also those listed in the BO. The implementation of these protective measures will reduce impacts to the VELB and its' habitat to a level less than significant.

3.3.5 Vegetation and Wildlife

This section describes the existing vegetation and wildlife in the project area and evaluates the effects of the proposed project on it.

Regulatory Background

Vegetation and wildlife are protected by numerous federal laws, including the Migratory Bird Treaty Act of 1918, and the Fish and Wildlife Coordination Act of 1934, as Amended. State laws and policies include California Fish and Wildlife Codes.

Existing Conditions

The project area is highly disturbed from previous activities. The upper slope is comprised mostly of a ruderal herbaceous community dominated by annual grasses such as wild oat, and forbs. The steep rocky lower and mid-slope is mostly devoid of vegetation except with the presence of small shrubs (sticky monkey flower, tobacco, and coffeeberry) scattered throughout the mid-slope area. The proposed footprint of the access road is dominated by ruderal vegetation with adjacent trees (cottonwood, willow sp, black locust) and one large elderberry shrub.

Wildlife in the area include occasional small mammals, resident and migratory birds, reptiles, and amphibians. The project area lacks cover and vegetation structure and therefore is not conducive for prolonged periods of wildlife use such as denning, nesting, or rearing. Additionally, there are no wetlands or vernal pool habitats in the project area.

Environmental Effects

Significance Criteria

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

- Substantial loss, degradation, or fragmentation of any natural communities or wildlife habitat.
- Substantial effects on a sensitive natural community, including Federally-protected wetlands and other waters of the U.S., as defined by Section 404 of the CWA.
- Substantial reduction in the quality or quantity of important habitat, or access to such habitat, for wildlife species.

No Action Alternative

Under the no action alternative, the Corps and the CVFPB would not participate in construction of the proposed alternative. There would be no construction related effects to vegetation and wildlife, and conditions in the project area would remain the same.

Implement Slope Protection Measures

Installation of the rock bolts would involve drilling into the rock slope and construction of a crane pad. Minimal clearing and grubbing would be required for the removal of herbaceous vegetation in the staging areas. Construction of an access road may require tree trimming and/or

the removal of twelve trees. Surveys were conducted by Corps and USFWS on February 11, 2014. The results of the survey are shown in Table 5. Tree data and map is located in Appendix F.

Table 5. Results of the Trees Potentially Affected by the Project

Tree No.	Species	Diameter at Breast Height (inches)
1	Cottonwood	26
2	Cottonwood	6
3	Cottonwood	8
4	Cottonwood	3
5	Cottonwood	10
6	Cottonwood	4
7	Cottonwood	4
8	Willow sp	20
9	Willow sp	4
10	Willow sp	17
11	Black Locust[1]	16
12	Black Locust[1]	3
Total		**121**

Notes: [1] non-native species

Migratory birds such as killdeer, mourning doves, crows, cliff swallows, great blue heron and their habitats are protected under the Migratory Bird Treaty Act, as amended (16 U.S.C 703 et seq.). If the trees discussed above are removed, nesting birds and raptors using this habitat could be adversely affected. To ensure that there would be no effect, preconstruction surveys would be conducted prior to any work scheduled during the nesting season. If any breeding birds or active nests are found, a protective buffer would be delineated, and the USFWS and CDFW would be consulted for further action prior to construction. Recommendations proposed by the USFWS in their Fish and Wildlife Coordination Act Report are listed in the mitigation section below.

Once the project is completed, all disturbed areas would be restored via reseeding with a plant mix including grasses to encourage revegetation. Any trees removed would be mitigated in accordance with the recommendations provided in the Coordination Act Report. A planting plan would be developed prior to the removal of any trees. The plan would include planting design, monitoring methods, specific success criteria, and remedial measures in the event of failure in meeting success criteria. If mitigation cannot be completed on-site due to the limited space and lack of access, plantings are assumed to be completed at Rossmoor Bar mitigation site along the American River or credits would be purchased at a USFWS approved mitigation bank. Although this mitigation is off-site, it would compensate for losses at the Folsom Lake State Recreation Area, and would provide valuable wildlife habitat at an alternate location. The off-site mitigation would provide wildlife habitat within an area that is not as heavily regulated for flood control and water supply, which would provide more benefits to wildlife species than additional mitigation within the Folsom Lake State Recreation Area.

Any displaced wildlife would be expected to return to the area after the project is completed. Wildlife could be significantly impacted by loss of habitat and construction disturbance if mitigation measures are not implemented. With implementation of mitigation measures

recommended by the USFWS, the proposed slope protection would have a less-than-significant impact on wildlife.

Mitigation

The following USFWS recommendations and mitigation measures would be implemented to reduce the potentially significant effects associated with the proposed project to less-than-significant:

- Avoid impacts to any oak woodlands and riparian areas outside, but in close proximity to, the construction easement and staging areas by fencing their boundaries with orange construction fencing or cyclone fencing just outside of the dripline of the woody vegetation.

- Avoid impacts to native trees, shrubs, and aquatic vegetation. Any native trees or shrubs removed with a diameter at breast height of 2 inches or greater should be replaced onsite, in-kind with container plantings so that the combined diameter of the container plantings is equal to the combined diameter of the trees removed. These replacement plantings should be monitored for 5 years or until they are determined to be established and self-sustaining. The planting site(s) should be protected in perpetuity.

- Minimize the impact of removal and trimming of all trees and shrubs by having these activities supervised and/or completed by a certified arborist.

- Avoid future impacts to the site by ensuring all fill material is free of contaminants.

- Avoid impacts to migratory birds nesting in trees along the access route and adjacent to the proposed bank protection site by conducting pre-construction surveys for active nests along the proposed haul road, staging area, platform, and construction site. This would especially apply if construction begins in the early summer of 2015. Work activity around active nests should be avoided until the young have fledged. The following protocol from the CDFW for Swainson's hawk would suffice for the pre-construction survey for raptors:

  > *A focused survey for Swainson 's hawk nests will be conducted by a qualified biologist during the nesting season (February 1 to August 31) to identify active nests within 0.25 mile of the project area. The survey will be conducted no less than 14 days and no more than 30 days prior to the beginning of construction. If nesting Swainson 's hawks are found within 0.25 mile of the project area, no construction will occur during the active nesting season of February 1 to August 31, or until the young have fledged (as determined by a qualified biologist), unless otherwise negotiated with the California Department of Fish and Wildlife. If work is begun and completed between September 1 and February 28, a survey is not required.*

- Minimize impacts to fish and wildlife resources and their habitat by confining travel to established roads/paths in the project area and confining parking to established areas (parking lots and staging areas).

- Minimize project impacts by reseeding all disturbed areas at the completion of construction with forbs and grasses.

With implementation of these mitigation measure and USFWS recommendations, the project would have a less than significant effect on vegetation or wildlife.

3.3.6 Water Quality

This section describes the existing conditions of the water resources that could be affected and evaluates the effects of the proposed project on water resources and water quality in the project area.

Regulatory Setting

Federal and State law mandates a series of programs for the management of surface water quality. The Clean Water Act (33 U.S.C.§1251 et seq.) (CWA) is the Federal law that establishes the baseline that all state and local water quality laws must meet. The CWA also gives states the authority to adopt more stringent water quality programs to manage waters within the state. California's Porter-Cologne Water Quality Control Act (California Water Code, Division 7), which created the State Water Resources Control Board (SWRCB), regulates the California waterways and establishes pollution prevention plans and policies.

The SWRCB is divided into nine Regional Water Quality Control Boards (RWQCB). Each RWQCB is responsible for enforcing State water quality laws and objectives, establishing beneficial uses for each State waterway, and developing and updating basin plans that protect water quality based on beneficial use. The project area falls within the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB), which authorizes discharges into State waterways under the National Pollutant Discharge Elimination System (NPDES) permitting process. NPDES permits apply to stormwater, groundwater, and other wastewater discharges in the project area. Construction activities that disturb more than one acre of land would require a NPDES permit for potential storm water discharges and construction dewatering.

Permit types are further divided into categories based on the project activity in question. Pertinent to this project, a storm water permit is required. All permits require a notice of intent to be submitted prior to commencing any soil disturbing activities, groundwater dewatering, or concrete batch plant operation. The storm water permit requires that a Storm Water Pollution Prevention Plan (SWPPP) be developed and implemented along with a monitoring and reporting plan.

Section 401 of the CWA regulates the water quality of bodies of water associated with any in-water work, or discharge of dredged or fill material. Section 401 is administered by CVRWQCB. CVRWQCB either issues or denies water quality certifications based on whether or not the proposed in-water activity, discharge, or fill complies with all State and Federal laws, policies, and regulations governing the protection of the beneficial uses of the State's water resources.

Section 404 of the CWA regulates the discharge of dredged or fill material into wetlands and waters of the United States. Individual, general, and nationwide permits are issued by the Corps and EPA for activities that may these jurisdictional waters. Although the Corps does not issue itself permits for its own Civil Works projects, Corps regulations state that the Corps must apply the guidelines and substantive requirements of Section 404 to its activities. Such guidelines are known as the "Section 404(b)(1) Guidelines."

Existing Conditions

The American River basin covers an area of approximately 2,100 square miles and has an average runoff of 2.7 million acre-feet per year. The American River is part of the Sacramento River watershed along with numerous other streams and rivers that drain the western slopes of the Sierra Nevada and Cascades. The North, Middle, and South Forks of the American River are the major tributaries draining into Folsom Reservoir. In general, these waters entering Folsom Reservoir from the upper American River watershed are of high quality. The mainstem American River channel below Folsom Dam receives water from Folsom Lake after it passes through the dam.

Flood-producing runoff occurs primarily during the months of October through April and is usually most extreme between November and March. From April to July, runoff is primarily generated from snowmelt from the upper portions of the American River watershed. Runoff from snowmelt usually does not result in flood producing flows; however, it is normally adequate to fill Folsom Reservoir's available storage. Approximately 40 percent of the runoff from the watershed results from snowmelt.

Lake Natoma is downstream of Folsom Dam and serves as an afterbay to Folsom Reservoir. Formed and controlled by Nimbus Dam, the lake is operated to reregulate the daily flow fluctuations created by the Folsom Powerplant. Consequently, surface water elevations in Lake Natoma may fluctuate between four and seven feet daily. Lake Natoma has a storage capacity of approximately 9,000 acre-feet and a surface area of 500 acres. Nimbus Dam, combined with Folsom Dam, regulates water releases to the lower American River.

There are no sources of surface water such as streams, ponds, springs or wetlands in the project area. Installation of the rock bolts would occur over the outflow channel below Folsom Dam. No fill material would be placed into the waters of the U.S., therefore the preparation of a 404(b)(1) analysis is not required.

Environmental Effects

Significance Criteria

The proposed action would significantly affect water resources if it would result in any of the following:

- Violate any water quality standards or waste discharge requirements, create or contribute runoff water that would provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality;
- Substantially degrade surface water or groundwater quality such that it would substantially degrade water quality to the detriment of beneficial uses; or
- Substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation on or off the site, resulting in flooding on or off the site, or exceed the capacity of stormwater drainage systems.

No Action

Under the no action alternative, the Corps and the CVFPB would not participate in construction of the proposed alternatives. As a result, there would be no additional effects on water resources or quality from construction activities associated with the slope protection measures, including movement of disturbed soil and accidental spills into surface drainage. Water quality would continue to be influenced by urban, and stormwater runoff.

Implement Slope Protection Measures

Site preparation for the project would include ground disturbing activities including minor clearing and grubbing, and excavation. Approximately 2 acres of land could be exposed during construction of the proposed action. Installation of the rock bolts would occur primarily during the non-rainy season but construction could take up to 6 months. Exposed soil could potentially erode during rain events, causing increased turbidity in local waterways. Adjacent waterways that could potentially be affected include the outflow channel below Folsom Dam, and the American River.

Construction activities have the potential to temporarily impair water quality if disturbed and eroded soil, petroleum products, or construction-related wastes (cement and solvents) are discharged into receiving waters or onto the ground where they can be carried into receiving waters. Soil and associated contaminants that enter receiving waters through stormwater runoff and erosion can increase turbidity, stimulate algae growth, increase sedimentation of aquatic habitat, and introduce compounds that are toxic to aquatic organisms. and groundwater.

In order to maintain existing water quality conditions, the contractor would be required to obtain NPDES permits. A NPDES general stormwater construction permit from the CVRWQCB would be required since the project would disturb more than 1 acre of land. The Construction Storm Water Permit pertains to the prevention of increased turbidity of adjacent waterways from site erosion and sedimentation. The contractor would be required to develop and implement a SWPPP prior to initiating construction activities, and to implement standard BMPs. Dust control measures would be implemented to avoid dust and soil from entering the river or other drainages as a result of construction activities. Precautions would be followed to avoid erosion and movement of soils into drainage systems. Implementation of BMPs and NPDES permit requirements would reduce water quality impacts from construction to less than significant.

There is potential for fugitive dust and construction runoff to enter waterways due to excavation, drilling, equipment use, and movement of trucks in the project area and along the access road. Frequent watering of haul routes, proper covering and control of material stock piles (e.g., dirt and aggregate) would help to prevent such pollution impacts, therefore; impacts on water quality due to fugitive dust would be less than significant.

There is also a potential of incidental fallback of materials entering the outflow channel from drilling and installation of the rock bolts. To minimize incidental fallback, the contractor would use a vacuum, covers or platforms to collect debris from entering the outflow channel. To minimize loss of grout, the contractor would conduct grouting in a manner to prevent air voids within the grout zone. If resin grout is used, it shall be in accordance with the resin manufacturer's recommendation. Implementation of BMPs would reduce incidental fallback from construction to less than significant.

Mitigation

Since there would be no significant effects on water resources or quality, no mitigation would be required. However, the following standard BMPs would be implemented to avoid or minimize any effects of construction on surface waters. Additional BMPs could be identified as part of the NPDES permits discussed above. Implementation of these BMPs would ensure that effects on water quality would remain at less-than-significant levels. Standard BMPs include:

- Appropriate erosion control measures would be incorporated into the SWPPP in order to prevent sediment from entering waterways. Examples include, but are not limited to: straw bales/wattles, erosion blankets, silt fencing, mulching, re-vegetation, and temporary covers. An appropriately designed and effective sediment capture and stilling basin must be implemented to capture and control sediments carried by site runoff. Sediment and erosion control measures must be maintained during construction at all times. Inspect control measures before, during, and after a rain event.
- Implement appropriate measures to prevent any debris, soil, rock, or other materials/products associated with construction activities from entering waterways.
- The contractor would use a water truck or other appropriate measures to control fugitive dust on haul roads, construction areas, and stockpiles.
- The construction entrance/exit would be stabilized and controls to prevent off-site tracking of sediment or loose construction related materials would be implemented.
- Covers or platforms would be used to collect debris from entering the outflow channel. Attachments shall be added to construction equipment to catch debris.
- A fuel spill management plan would be developed for the project.
- Provide secondary containment for storage of any fuel, oil or other liquid and properly dispose of such liquid wastes.
- Fuel and maintain vehicles in specified staging areas only, which are designed to capture potential spills. These areas 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. Any spills of hazardous material would be cleaned up immediately. Spills would be reported in construction compliance reports.
- Inspect and maintain vehicles and equipment to prevent dripping of oil, lubricants, or any other fluids.
- Schedule construction to avoid as much of the wet season as possible. Ground disturbance activities are expected to begin in the summer of 2015. If rains are forecast during the construction period, erosion control measures would be implemented.
- Train construction personnel in storm water pollution prevention practices.
- Re-vegetate and restore areas cleared by construction in a timely manner to control erosion.
- Implementation of any additional requirements as mandated by the construction storm water permit would further reduce any potential adverse affects to adjacent waterways.

In addition, the measures in the Spill Prevention and Response Plan and the Erosion and Sediment Control Plan would prevent any significant adverse effects to water quality in the project area. The inclusion of the above BMPs and complete compliance with all water quality permits, would reduce any water resources and quality impacts to less than significant.

4.0 CUMULATIVE AND GROWTH-INDUCING EFFECTS

4.1 Cumulative Effects

4.1.1 Introduction

NEPA and CEQA require the consideration of cumulative effects of the proposed project combined with the effects of other projects in and around the project vicinity. The discussion identifies resource areas in which the impacts of the proposed action, when viewed together with other projects, could contribute to an impact that is "cumulatively considerable" within the meaning of NEPA and CEQA.

Due to the fact that the Folsom JFP is a multi-phased, accelerated effort, overlapping construction efforts would occur adjacent and in the vicinity of the project area. The 2007 FEIS/EIR and the 2012 SEIS/EIR evaluated cumulative effects from the multiple phases of the Folsom JFP construction activities. No new current or future projects have identified in the vicinity of the project area that would change the 2012 SEIS/EIR analysis. The analysis in this Supplemental EA/EIR is addressing the incremental increase the proposed action would add to the previous cumulative effects analysis. The other phases of the Folsom JFP are listed below.

Mormon Island Auxiliary Dam Modification Project. Summer 2010 to fall 2015. 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. All alternatives address methods to excavate and replace the MIAD foundation, place an overlay on the downstream side, and construct 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 Folsom JFP.

Control Structure, Chute, and Stilling Basin. Spring 2011 to spring 2017. Phase III of the Folsom JFP consists of construction of the auxiliary spillway control structure. This effort is currently under construction by the Corps and will be completed in approximately Summer 2015. Concrete lining of the spillway chute and stilling basin will be conducted by the Corps as the final phase of the Folsom JFP. Construction of the control structure, and the concrete lining of the chute and stilling basin were all covered under the Corps' 2010 EA/EIR (Corps 2010).

Approach Channel. Spring 2013 to fall 2017. The approach channel project is the final construction activity of Phase IV of the Folsom JFP. The supplemental EIS/EIR was released December 2012. The primary and permanent structures consist of the 1,100 foot long excavated approach channel and spur dike. Additional existing sites and facilities that would be used for the length of the project include the Folsom Prison staging area, the existing USBR Overlook, the MIAD area, and Dike 7.

Regulatory Background

The NEPA regulations and CEQA Guidelines require that an EA/EIR discuss project effects that, when combined with the effects of other projects, result in significant cumulative effects. Cumulative effects are defined as "The effect on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor of collectively significant actions taken over a period of time" (CFR 40 Part 1508.7).

Cumulative effects under the CEQA Guidelines are defined as "two or more individual impacts which, when considered together, compound or increase other environmental impacts" (Section 15355). The Guidelines require that an EIR discuss cumulative effects "when they are significant" (Section 15130). The CEQA Guidelines also 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" (Section 15355).

Methodology

Cumulative effects are evaluated by identifying projects in and around the Folsom Dam vicinity that could have significant adverse or beneficial environmental effects. These significant effects are compared with the potential adverse and beneficial effects of the proposed alternative to determine the types and significance of potential cumulative effects. The timeframe for analysis of cumulative impacts is from summer of 2015 when the project is anticipated to begin through the completion of the slope protection measures (approximately six months). Specific site conditions would determine the amount of work that could take place during each construction season.

4.1.2 Past, Present, and Reasonably Foreseeable Future Projects

Related Projects

The identified projects in the vicinity of the project area are briefly described below. Each of the identified projects is required to evaluate the effects of the proposed actions on environmental resources in their respective areas. Accordingly, mitigation or mitigation measures must be developed to avoid or reduce any adverse effects to less than significant based on Federal and local agency criteria. Effects that cannot be avoided or reduced to less than significant are likely to contribute to cumulative effects in the area. Timing and sequencing of construction activities for each of the projects are not yet determined and would affect the findings of the cumulative effects analysis.

Johnny Cash Folsom Prison Blues (Folsom Lake) Trail: Historic Truss Bridge to Green Valley Road Segment

This project is planned to provide approximately 2.5 miles of Class I bike trail from the Historic Truss Bridge to Green Valley Road. Incorporation of a separated grade crossing at the new Folsom Lake Crossing/East Natoma Street re-alignment was included as part of the construction of the Folsom Bridge. Construction is expected to be completed in fall 2014.

Folsom Dam Water Control Manual Update

The Folsom Dam Water Control Manual Update is being completed in conjunction with the Folsom JFP by the Corps, USBR, CVFPB, and SAFCA. The Folsom Dam Water Control Manual Update is developing, evaluating, and recommending changes to the flood control operations at Folsom Dam to further reduce flood risks to the Sacramento area. The study will result in a Corps decision document and will be followed by a water control manual implementing the recommendations of the study. 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 these projects have been completed.

Folsom Dam Raise

The Folsom Dam Raise project will follow the Folsom JFP. This project includes raising the Folsom Dam, Mormon Island Auxiliary Dam and the auxiliary dikes around Folsom Reservoir by 3.5 feet; work on the emergency spillway gates; and ecosystem restoration projects. For the dam raise portion of the project, the design should begin in 2015 and be completed in Fiscal Year 2016, with construction following in phases through 2017 and 2018.

Widening of Green Valley Road

Green Valley Road runs between both the City of Folsom and El Dorado County. Both agencies have proposed projects to widen Green Valley Road from two to four lanes. The El Dorado County Green Valley Road widening project from the county line to Francisco Drive was

constructed prior to 2009, with environmental mitigation to be completed from 2009 to 2012 (El Dorado County 2010). The City of Folsom plans to widen Green Valley Road; however, the ongoing construction of the Bureau's MIAD Modification project limits their ability to conduct the road widening project. There is currently no environmental compliance documentation and no construction schedule for the project within the City of Folsom. The project could take four years to construct.

El Dorado 50 – HOV lanes

California Department of Transportation will construct bus-carpool (HOV) lanes in the eastbound and westbound directions by widening U.S. Highway 50 from approximately El Dorado Hills Boulevard to just west of Greenstone Road. The project will ultimately extend the current HOV lane system to provide approximately 23 continuous miles of eastbound and westbound HOV lanes between Sacramento and El Dorado counties. The project also includes bridge modifications, lighting improvements and new asphalt overlay. The project will be constructed in three phases: Phase 1 extended the current HOV lanes from their existing terminus west of El Dorado Hills Boulevard to west of Bass Lake Road. Construction was completed in 2011. Phase 2 extended the lanes from west of Bass Lake Road to approximately Cameron Park Drive. Construction was completed in 2012. Phase 3 will extend the lanes from Cameron Park Drive to Greenstone Road. Construction has not been scheduled. (Caltrans 2012).

Hazel Avenue Improvement Project

Sacramento Department of Transportation completed Phase 1 of the Hazel Avenue Improvement Project. The primary portion of Phase 1 involved the widening of Hazel Avenue from four to six lanes over the American River Bridge from U.S. 50 to Curragh Downs Drive. Construction was completed in 2011. Phase 2 of the Hazel Avenue Projects includes widening Hazel Avenue from four to six lanes from Curragh Downs Drive to Sunset Avenue. This phase will also include traffic signal modifications at Curragh Downs Drive, Winding Way, La Serena Drive, and Sunset Ave. Construction of Phase 2 is currently targeted to begin in 2015. Phase 3 of the Hazel Avenue Project includes improvements from Sunset Avenue to Madison Avenue and is project to begin in 2016 (SacDOT 2010).

4.1.3 Cumulative Effects

Analysis of Potential Cumulative Effects

Chapter 3 of this Supplemental EA/EIR identifies the affected environment and includes detailed impact analyses and mitigation measures of the proposed action with respect to air quality, cultural resources, special status species, vegetation and wildlife, and water quality. The results are assessed in the following cumulative effects analysis in terms of their potential to combine with environmental effects of the projects listed previously. The analysis focuses on the potential for the impacts identified in Chapter 3 to make a considerable contribution to significant adverse cumulative effects.

The discussion of cumulative impacts focuses on the cumulative impact to which these other projects contribute, rather than the attributes of other projects which do not contribute to the cumulative impact. For example, if another project contributes only to a cumulative effect on natural resources, its effects on public services need not be discussed as part of the cumulative impact analysis.

Air Quality

The geographic scope of potential cumulative air quality impacts encompasses the immediate project vicinity for particulates and the Sacramento Valley Air Basin (SVAB) for ozone precursor pollutants. The proposed action could overlap with ongoing Folsom JFP projects and roadway improvement projects that are in and around the vicinity of the Folsom Facility.

A detailed discussion of air quality cumulative effects is presented in the 2012 SEIS/EIR. No new current or future projects have been identified in the vicinity of the project area that would change the 2012 SEIS/EIR analysis. The additional emissions estimates from the proposed action would not contribute significant emissions to the air basin. The project's emissions would be temporary and not generate any long-term air pollutants, not exceed applicable project level thresholds of significant, and would not substantially contribute to AAQS. Therefore, impacts are less than significant with mitigation.

Climate Change

It is unlikely that any single project by itself could have a significant impact on the environment with respect to GHGs. However, the cumulative effect of human activities has been clearly 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). Therefore, the analysis of the environmental effects of GHG emissions is inherently a cumulative impact issue. While the emissions of one single project will not cause global climate change, GHG emissions from multiple projects throughout the world could result in a cumulative effect with respect to global climate change.

The primary effects expected from these concurrent projects would be due to construction activities. On an individual basis, these projects would either not exceed or mitigate emissions below their significance thresholds. If these projects are implemented concurrently, the combined cumulative effects could be above what this document is using as reporting requirements for GHG emissions. If this was the case, concurrent construction projects within and adjacent to Folsom Dam could be above the reporting requirements for GHG emissions and could have adverse cumulative effects on climate change. However, in order to reduce the significance of GHG emissions associated with this project, the Corps is implementing a number of mitigation and minimization measures. By implementing the LACMTA Green Construction Policy discussed in Sections 4.2.6 and 4.3.6 of the 2012 SEIS/EIR, and in the Air quality section 3.3.1 of this document, the Corps would reduce overall emissions associated with the Folsom JFP, and in doing so reduce the potential cumulative GHG emissions in the area. Additionally, the majority of the related projects in the area consist of flood risk management and dam safety seismic improvement actions. By implementing these actions, the Corps and USBR would be reducing potential future

emissions associated with future flood emergency actions. As a result, the related projects could combine to reduce long-term potential GHG emissions in the Sacramento area. The potential reduction in long-term GHG emissions is a major goal of the CARB scoping plan and Sacramento County's Climate Action Plan. As a result, the overall cumulative GHG emissions from these concurrent projects are considered to be less-than-significant.

Cultural Resources

Folsom Dam and Dikes, resources eligible for listing in the NRHP, are located outside the APE, and the current proposed project would not alter directly or indirectly any of the characteristics that make these resources eligible for listing in the NRHP. As a result, there would be no adverse effects to Folsom Dam and Dikes caused by the proposed action. Construction of the proposed slope protection measures would not adversely affect any potential historic properties or cultural resources located within or near the APE. Since the Corps has determined that construction of the proposed action would not adversely affect any potential historic properties or cultural resources located within or near the APE, the proposed action would not contribute to any cumulative effects resulting from past, ongoing, or reasonably foreseeable projects in or near the APE.

Special Status Species

The slope protection measures could result in indirect effects on elderberry plants, which is the host plant for the Federally listed threatened valley elderberry longhorn beetle. However, with implementation of the conservation measures stated previously, effects to the valley elderberry longhorn beetle would be minimized.

Prior to the onset of the MIAD Modification project, USBR transplanted elderberry shrubs from their project footprint. To mitigate for the transplanting of these shrubs, USBR will include elderberry plantings in their Mississippi Bar mitigation site. VELB populations are highly affected by fragmented habitat, so by improving this site, USBR would also be improving the contiguous corridor for the VELB along the American River. Past Corps projects, including the Folsom Bridge Project also included elderberry mitigation that added to this corridor. As a result, the mitigation would benefit the species by adding habitat connectivity. The Folsom JFP approach channel project transplanted four elderberry shrubs to the French Camp Mitigation Bank. Transplanting the elderberry shrubs to the mitigation bank contributed to the long-term net improvement of beetle habitat by increasing habitat extent and connectivity. As a result, the cumulative effect of these projects' effects to elderberry shrubs would be considered less-than-significant, with the implementation of the projects' proposed mitigation.

Vegetation and Wildlife

The Folsom JFP approach channel and the Mormon Island Auxiliary Dam Modification project have identified effects to vegetation and wildlife. To mitigate for their effects, USBR will create a mitigation site with associated riparian habitat at Mississippi Bar on Lake Natoma. The Folsom JFP approach channel will mitigate for their effects by creating a mitigation site with associated riparian habitat at Rossmore Bar along the American River. If tree removal is required

to implement the slope protection measures, mitigation would be completed on-site. If on-site mitigation is not possible due to site constraints, plantings are assumed to be completed at the Rossmoor Bar site or credits would be purchased at a USFWS approved mitigation bank. Mitigation associated with riparian plantings on Lake Natoma or within the American River Parkway has the potential to increase the contiguous riparian corridor along the river and would increase habitat continuity. As a result, the cumulative effect of these projects' habitat loss would be considered less-than-significant, with the implementation of the projects' proposed mitigation.

Water Resources and Quality

The geographic scope for the potential cumulative water quality impacts encompasses the outflow channel below Folsom Dam (i.e. the Lower American River channel), and Lake Natoma. The proposed action could overlap with ongoing Folsom JFP projects which have the potential to create storm water runoff that could be discharged to outflow channel.

Projects could adversely affect water quality in these waters through clearing, grading, and foundation excavation work that could increase the potential for soil erosion and subsequent turbidity. During the rainy season, stormwater runoff from areas that have been cleared for these projects may contain high levels of suspended sediments. Together, these projects could potentially result in a cumulative effect on water quality.

The analysis results for potential impacts from the proposed action were less than significant; thus, would not contribution to cumulative effects on water quality. Implementation of the appropriate mitigation measures for each these identified projects and appropriate monitoring and testing, along with the mitigation measures for the proposed action, which include implementation of a SWPPP, BMPs, pertinent permits, would ensure that the potential cumulative effects on water quality to a less than significant level.

4.2 Growth-Inducing Effects

The proposed action would not directly remove obstacles to growth, result in population increases, or encourage and facilitate other activities that could significantly affect the environment. New development must be consistent with existing City and County general plan policies and zoning ordinances regarding land use, open space, conservation, flood protection, and public health and safety. Local population growth and development would be consistent with the most current Land Use Element of the County of Sacramento General Plan.

The project area is zoned specifically for flood control activities. The land uses would not change due to the construction of the proposed project, or any of the related projects in the area. In addition, maintenance of the slope protection measures would not be required so the project would not result in a substantial increase in the number of permanent workers or employees.

5.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

5.1 Federal Requirements

Clean Air Act of 1972, as amended, 42 U.S.C. 7401, et seq. *Full compliance*. Construction of the proposed action concurrently with the other phases of the Folsom JFP is not expected to violate any Federal, exceed the U.S. EPA's general conformity *de minimis* threshold, or hinder the attainment of air quality objectives in the local air basin. Implementation of mitigation measures and BMPs would reduce NOx emissions to below State and local thresholds. Thus, the Corps has determined that the additional emissions from the slope protection measures would have no significant effects on the future air quality in the area.

Clean Water Act of 1972, as amended, 33 U.S.C. 1251, et seq. *Full Compliance*. Compliance with Clean Water Act Section 404(b)(1) was not required, as there will be no placement of fill material into the waters of the U.S. The contractor will obtain the water quality a Storm Water Permit: NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities. As part of these permits, the contractor would be required to implement BMPs to avoid and minimize any adverse effects of construction on surface waters.

Endangered Species Act of 1973, as amended, 16 U.S.C. 1531, et seq. *Full Compliance*. In accordance with Section 7(c), the Corps obtained a list of Federally listed and proposed species likely to occur in the project area. The only listed species affected by the project would be the valley elderberry longhorn beetle. The Corps' biological assessment is that the project may affect, but is not likely to adversely affect this species. USFWS amended the Biological Opinion (BO) dated March 31, 2014 and June 10, 2014 (Appendix D).

The Corps as the action agency has made the determination that there would be no effect on any listed species under the jurisdiction of the National Marine Fisheries Service (NMFS). As a result, formal consultation is not required with NMFS under Section 7 of the Endangered Species Act.

Executive Order 11988, Floodplain Management. *Full Compliance*. The objective of this Executive Order is the avoidance, to the extent possible, of long-and short-term adverse effects associated with the occupancy and modification of the base flood plain (1 in 100 annual flood event) and the avoidance of direct and indirect support of development in the base flood plain wherever there is a practicable alternative. The proposed project is a portion of the Folsom JFP and it has been determined, by the project partners and Congress, that constructing the Folsom JFP is the only practicable way to reduce flood risk to the greater Sacramento area. The Folsom JFP in combination with other area flood risk projects, protects the existing urban population while providing residual risk information to the appropriate agencies making land use decisions in the area. Therefore the proposed project does not contribute to increased development in the floodplain and is in compliance with the executive order.

Executive Order 11990, Protection of Wetlands. *Full Compliance*. This executive order directs Federal agencies, in carrying out their responsibilities, to minimize the destruction, loss or

degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. The project area is not located in or adjacent to wetlands and therefore would have no adverse effects on wetlands.

Executive Order 12989, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. *Full Compliance*. This Executive Order states that Federal agencies are responsible to conduct their programs, policies, and activities that substantially affect human health of the environment in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons from participation in, denying persons the benefits of, or subjecting persons to discrimination under such programs, policies, and activities because of their race, color, or national origin. The benefits of the proposed action would extend to all areas of the greater Sacramento Area. The proposed project is on public land and is not located near any minority or low-income areas or communities.

Farmland Protection Policy Act, 7 U.S.C. 4201 et seq. *Full Compliance*. This act requires a Federal agency to consider the effects of its actions and programs on the Nations' farmland. There are no designated prime or unique farmlands within the project area, and therefore there would no adverse effects to farmland.

Fish and Wildlife Coordination Act of 1958, as amended, 16 U.S.C. 661, et seq. *Full Compliance*. This act requires Federal agencies to consult with the USFWS and State fish and game agencies before undertaking or approving water projects that control of modify surface water. Federal agencies undertaking water projects are required to fully consider recommendations made by the USFWS. Coordination with USFWS is ongoing in order to determine the effects on vegetation and wildlife within the project area. USFWS prepared a draft Coordination Act Report (CAR) dated April 1, 2014 (Appendix G) and a final CAR dated October 2, 2014. Inclusion of the final CAR and consideration of USFWS recommendations accomplishes full compliance with this law.

Magnuson-Stevens Fishery Conservation and Management Act. *Full Compliance*. This legislation requires that all Federal agencies consult with National Marine Fisheries Service regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect essential fish habitat. Essential fish habitat is defined as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The Corps has determined the project would have no effect on Federally listed threatened and endangered species, and essential fish habitat.

Migratory Bird Treaty Act of 1936, as amended, 16 U.S.C. 703 et seq. *Full Compliance*. This Act provides protection for migratory birds as defined in 16 USC 715. To the extent feasible, construction would be timed to avoid disruption of active bird nest or young of birds that breed in the area. No direct physical destruction of active nests will occur unless a permit is obtained from the USFWS. A biologist would conduct preconstruction surveys in areas adjacent to the project site. If breeding birds or active nests are found in the area, a protective buffer would be delineated to minimize disturbance to the nests, and the USFWS and CDFW would be consulted.

National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321, et seq. *Full Compliance*. This Supplemental EA/EIR is in full compliance with this act. Comments received during the public review have been incorporated into the EA/EIR, as appropriate. These comments and responses are included in Appendix H. This final EA/EIR is accompanied by a signed FONSI by the District Engineer. These actions will provide full compliance with this act.

National Historic Preservation Act of 1966, as amended. *Full Compliance.* Section 106 of the National Historic Preservation Act requires Federal agencies to take into account the effects of a proposed undertaking on properties that have been determined to be eligible for, or included in, the National Register of Historic Places. The implementing regulations for Section 106 are 36 CFR § 800.

In a letter dated June 2, 2014, the Corps initiated consultation with the SHPO, informing the SHPO of the proposed project, and asking for comments on the determination of the APE and on the proposed efforts to identify historic properties within the APE.

Letters were sent to potentially interested Native American Tribes on June 2, 2014, including the Shingle Springs Band of Miwok Indians, the United Auburn Indian Community of the Auburn Rancheria, Wilton Rancheria, and the T'si-Akim Maidu to inquire if they have knowledge of locations of archaeological sites, or areas of traditional cultural value or concern in or near the APE.

The Corps has made a determination of "No Adverse Effect" for the proposed project. The only known historic property near the APE is Folsom Dam (CA-SAC-937-H), including the left and right wing dams (CA-SAC-1103-H), which are contributing features to Folsom Dam. Folsom Dam was found eligible for listing in the NRHP for its role in the history of flood control in the Sacramento region. The Corps has determined that the proposed project will not adversely affect historic properties within the APE and submitted a letter to the SHPO documenting this determination and the Corps' inventory, identification, evaluation, and consultation efforts, and determinations of eligibility and effect. SHPO sent a letter August 26, 2014 concurring with the Corps determination.

Wild and Scenic Rivers Act, 16 U.S.C. 1271 et seq. *Full Compliance.* This act was enacted to preserve selected rivers or sections of rivers in their free-flowing condition in order to protect the quality of river waters and to fulfill other national conservation purposes. The Lower American River, below Nimbus Dam, has been included in the Federal Wild and Scenic Rivers system since 1981. The proposed project is located above this reach of the river and therefore, does not affect this portion of the Lower American River.

5.2 State of California Requirements

California Environmental Quality Act. *Full Compliance*. This joint NEPA/CEQA document is in full compliance with CEQA requirements. Comments received during the public review period have been considered and incorporated into the final EA/EIS, as appropriate. The CVFPB will consider certifying the EIR and adopting its findings. Completion of this action by the CVFPB will provide full compliance for CEQA.

California Endangered Species Act. *Full Compliance*. This act requires the non-Federal agency to consider the potential adverse affects on State-listed species. As a joint NEPA/CEQA document, this Supplemental EA/EIR has considered the potential effects and has determined that due to the lack of suitable habitat for any State-listed species, the project would have no effect on those State special status species associated with the proposed action.

Porter-Cologne Water Quality Control Act. *Full Compliance*. The potential effects of the proposed project on water quality have been evaluated and are discussed in section 3.2.5. This project expects to achieve full compliance with the Water Quality Control Act by obtaining and implementing the requirements from the NPDES permits.

6.0 COORDINATION AND REVIEW OF THE SUPPLEMENTAL EA/EIR

6.1 Public Involvement

The public involvement for the Folsom JFP has included public attendance and participation at meetings where possible design refinements have been discussed. These activities included a community outreach program with public workshops, notices, and media; and distribution of the draft documents for public review and comment. The public and other interested/affected parties have been encouraged to comment on all activities associated with the design and evaluation of the Folsom JFP.

6.2 Review of the Supplemental EA/EIR

The draft Supplemental EA/EIR was circulated for two 45 days periods to agencies, organizations, and individuals who have an interest in the proposed project. All comments received were considered and incorporated into the final EA/EIR, as appropriate. Three comments letters were received during the first public comment review period from FEMA, SMAQMD, and United Auburn Indian Community. The public review period began July 18, 2014 and ended September 2, 2014. The second public review period began November 7, 2014 and ended December 22, 2014. One comments letter from the Central Valley Regional Water Quality Control Board was received during this public comment review period. Copies of the letters along with responses can be found in Appendix H.

7.0 FINDINGS

Based on the information in this Supplemental EA/EIR, the Folsom JFP with the proposed slope protection modifications would have no new significant adverse effects on environmental resources beyond the significant effects identified in the 2007 FEIS/EIR. Mitigation consisting of BMPs and other measures proposed in this Supplemental EA/EIR are sufficient to reduce all direct, indirect, and cumulative effects to less than significant. 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 FONSI has been prepared and accompanies this document.

In addition, the CVFPB, as the project's lead agency under CEQA, will consider staff recommendations and public comment in order to decide whether to certify the SEA/EIR, adopt findings, adopt the mitigation, monitoring, and reporting plan, and approve the slope protection measures. Completion of this action by the CVFPB will provide full compliance for CEQA.

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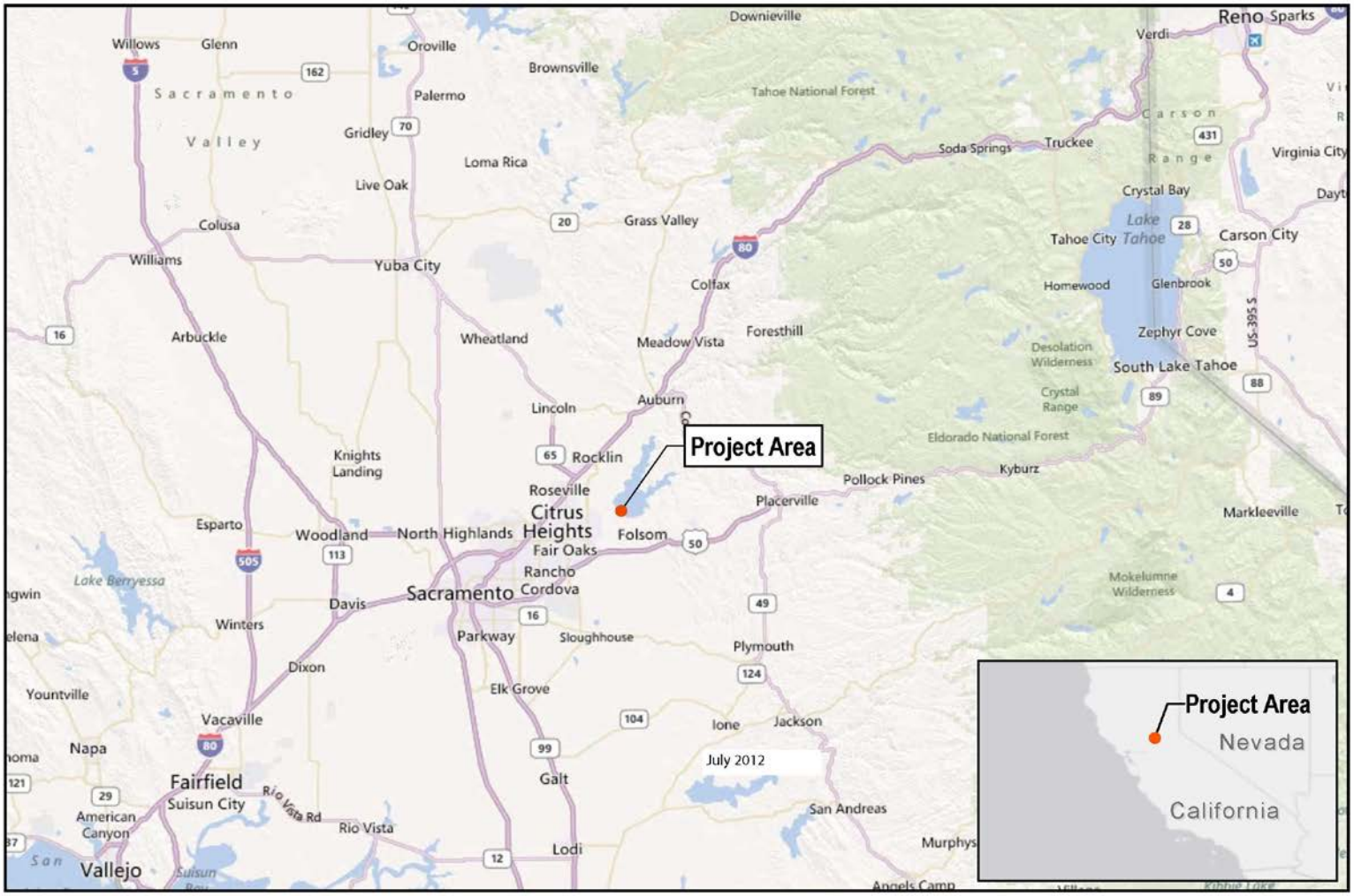
PLATES



Project Vicinity Map **Folsom Dam Safety and Flood Damage Reduction, Right Bank Stabilization** US Army Corps of Engineers Sacramento District	0 5 10 20 Miles Plate 1

Project Features

Folsom Dam Safety and Flood Damage Reduction,
Right Bank Stabilization Project

US Army Corps of Engineers
Sacramento District

Plate 2

Plate 3 – Photographs of the Project Area prior to this Supplemental EA/EIR.

View of the project area looking north from mid-slope.

View of the potential access road location.

Right Bank Profile View

Right Bank Profile View