

**Meeting of the Central Valley Flood Protection Board  
March 22, 2013**

**Staff Report**

**RESOLUTION 2013-04  
FOLSOM DAM MODIFICATION PROJECT  
CERTIFICATION OF SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT/  
ENVIRONMENTAL IMPACT REPORT FOR  
THE CONSTRUCTION OF THE APPROACH CHANNEL  
FOLSOM, CALIFORNIA**

---

**Item**

Consideration of Resolution 2013-04 to:

- Certify the Folsom Dam Modification Project, Supplemental Environmental Impact Statement / Environmental Impact Report (SEIS/EIR) for the construction of the approach channel; and
- Adopt the findings; and
- Adopt the Mitigation, Monitoring and Reporting Plan; and
- Approve design refinements to the originally approved Project; and
- Delegate authority to the Executive Officer to execute the Notice of Determination.

**Sponsors**

The Folsom Dam Modification Project, also referred to as the Folsom Joint Federal Project (JFP), is a cooperative effort between the U.S. Department of Interior, Bureau of Reclamation (Reclamation), the U.S. Army Corps of Engineers (USACE), the State of California Central Valley Flood Protection Board (CVFPB/Board), and the Sacramento Area Flood Control Agency (SAFCA).

**Location**

The project area is located within the city of Folsom about 20 miles northeast of the city of Sacramento. Folsom Dam and Reservoir are located downstream from the confluence of the north and south forks of the American River. The proposed auxiliary spillway is on the left abutment of the existing main dam, immediately downstream of the existing left wing dam. Current site access is via Folsom Lake Crossing.

**History**

Folsom Reservoir has a capacity of 977,000 acre-feet with a surface area of 11,450 acres. Folsom Dam was originally authorized in 1944 for flood control, but was reauthorized in 1949 as a multi-purpose facility. USACE constructed Folsom Dam and transferred it to Reclamation for

coordinated operation as an integral part of the Central Valley Project. Construction of the dam began in October 1948 and was completed in May 1956. Water was first stored in February 1955.

Folsom Dam is a concrete gravity dam 340 feet high and 1,400 feet long. The main section is flanked by two earthen wing dams. The Right Wing Dam is 6,700 feet long and 145 feet high and the Left Wing Dam is 2,100 feet long and 144 feet high. In addition to the main section and wing dams, there is one auxiliary dam and eight smaller earthen dikes. All retention structures have a crest elevation of 480.5 feet above mean sea level. The concrete dam has a solid parapet wall with a top elevation of 484 feet. Folsom Reservoir's normal operating pool is 977,000 acre-feet with a reservoir water surface at elevation 466 feet. The design surcharge pool is 1,084,780 acre-feet at reservoir water surface elevation 475.4 feet, with 5.1 feet of existing freeboard.

### **Description**

The intent of the Folsom JFP is to improve flood damage reduction features, dam safety and security at the Folsom Dam and its associated facilities. Operations of the auxiliary spillway would increase water discharge capabilities of the reservoir and help provide a 200-year level of protection for the dam. Excavation of the chute has been completed by Reclamation and USACE has begun construction of the control structure.

The approach channel and its related features, as evaluated in this SEIS/EIR, are essential functional features of the proposed auxiliary spillway. Without the completion of these features, the auxiliary spillway would not be complete and the Folsom facility would continue to be incapable of passing the probable maximum flood. As a result, the 200-year level of protection would not be accomplished, and the Sacramento region would remain at risk for a more frequently occurring potential flood event.

### **Prior Environmental Actions and Determinations**

Major determination documents related to flood management, studies, and actions in the American River basin are listed below:

- 1991 American River Watershed Investigation and Environmental Impact Statement/Environmental Impact Report (EIS/EIR)
- 1996 Supplemental Information Report and EIS/EIR
- 1998 SAFCA's Folsom Dam Modification Report
- 2002 American River Watershed Long-Term Study and EIS/EIR
- 2005 American River Watershed, Folsom Dam Modification Project Final Environmental Assessment/Initial Study (FEA/IS)
- 2007 Folsom Dam and Safety and Flood Damage Reduction: Final Environmental Impact Statement /Environmental Impact Report (FEIS/EIR)
- 2010 Folsom Dam and Safety and Flood Damage Reduction; Control Structure, Chute, and Stilling Basin Work: Final Supplemental Environmental Assessment/Environmental Impact Report (FSEA/EIR)
- 2012 Folsom Dam and Safety and Flood Damage Reduction; Prison Staging Area and Stilling Basin Drain: Final Supplemental Environmental Assessment/Environmental Impact Report (FSEA/EIR)

In March 2007, USACE prepared the Post Authorization Change for the American River Watershed Project which reevaluated the Folsom Dam Raise Project, along with the Folsom Modifications Project resulting in the recommendation of the Folsom JFP. The FEIS/EIR, prepared by Reclamation with USACE as a Cooperating Agency, was issued in March 2007.

A Record of Decision was issued in May 2007 by Reclamation for the Dam Safety and Dam Security authorities. A separate Record of Decision for the Folsom JFP, including authorities for the Auxiliary chute, was jointly issued by USACE and Reclamation in June 2007. The Reclamation Board, now the Central Valley Flood Protection Board, adopted Resolution 07-03 in July 2007, which resulted in the certification and approval the Folsom Dam Safety and Flood Risk Reduction Project with the Notice of Determination filed with the State Clearinghouse on July 27, 2007.

The evaluation in the 2007 FEIS/EIR was based on technical studies and the project design available at the time. Subsequent construction and technical studies have revealed a need for further design refinements to the approach channel, which include: (1) installation of a cutoff wall or cofferdam; (2) placement of fill material for a haul road; (3) excavation of an approximate 1,100 foot long approach channel upstream of the auxiliary spillway and control structure; (4) installation of the approach channel concrete slab and walls; (5) construction of a spur dike in the reservoir adjacent to the approach channel for hydraulic purposes; (6) stockpiling and disposal of excavated material at any of the four proposed potential disposal sites (Mormon Island Auxiliary Dam (MIAD), Dike 7, Dike 8, and spur dike); (7) construction of a temporary trans-load facility near Dike 7 for barge unloading of dredge material; (8) staging of contractor materials and equipment at any of the proposed locations (spillway excavation site, Folsom Overlook, MIAD, Dike 7, and/or Folsom Prison); (9) temporary installation of a concrete producing batch plant and/or rock crusher at and of the proposed locations (spillway excavation site, Folsom Overlook, MIAD, and/or Folsom Prison). One of the proposed alternative disposal sites for excavated material is in-reservoir which is not supported by the Board or Board staff. Since this current environmental document is a supplement to the 2007 FEIS/EIR and incorporates the FEIS/EIR by reference, which summarizes the existing conditions, this SEIS/EIR focuses on design refinements made since the 2007 FEIS/EIR was prepared.

This SEIS/EIR evaluates the alternatives for the proposed construction of the approach channel to the auxiliary spillway, with USACE as the lead agency for National Environmental Policy Act (NEPA) compliance, and CVFPB as the lead agency for California Environmental Quality Act (CEQA) compliance. This SEIS/EIR is comprised of: (1) description of the existing environmental resources in the project area; (2) evaluation of the effects and significance of the action alternative on the resources; and (3) proposed measures to avoid, minimize, or mitigate any adverse effects to a less-than-significant level.

This SEIS/EIR is in compliance with NEPA and CEQA, and provides full disclosure of the effects of the proposed action.

### **Staff Comments and Endorsements**

- The SEIS/EIR was reviewed by staff as well as public and resource agencies. Comments were incorporated in the Final SEIS/EIR. Staff recommends that the SEIS/EIR be certified by CVFPB as CEQA lead under Resolution 2013-04.
- CVFPB certification of this SEIS/EIR would prevent funding interruptions, prevent breach agreements, and maintain the project schedule.

- CVFPB staff and CVFPB legal counsel reviewed the SEIS/EIR and recommends CVFPB certification of Resolution 2013-04.

### **Section 8610.5 Considerations**

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board will make its decision based on the evidence in the attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

In considering this SEIS/EIR, the Board used the best available science relating to the issues presented by all parties. On the key issue of hydraulic impacts, the Folsom Reservoir improvements will result in an improved engineered flood control system with no significant adverse upstream or downstream hydraulic impacts.

3. Effects of the decision on the entire State Plan of Flood Control.

This project contributes to the State Plan of Flood Control by improving performance of the American River flood facilities. This project also meets the Central Valley Flood Protection Plan's goal of 200-year protection for urban areas.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

Impacts of hydrology, climate, and development are addressed in the many environmental documents listed above. Previous and future project designs and environmental documentation have addressed and will continue to address these concerns through public comment periods and agency reviews.

### **Staff Recommendation**

Staff recommends CVFPB approve Resolution No. 2013-04 to certify the Final SEIS/EIR, adopt the Findings and Mitigation and Monitoring Reporting Plan, approve the design refinements for the Folsom Dam Modification Project – Approach Channel, and delegate authority to the Executive Officer to execute the Notice of Determination.

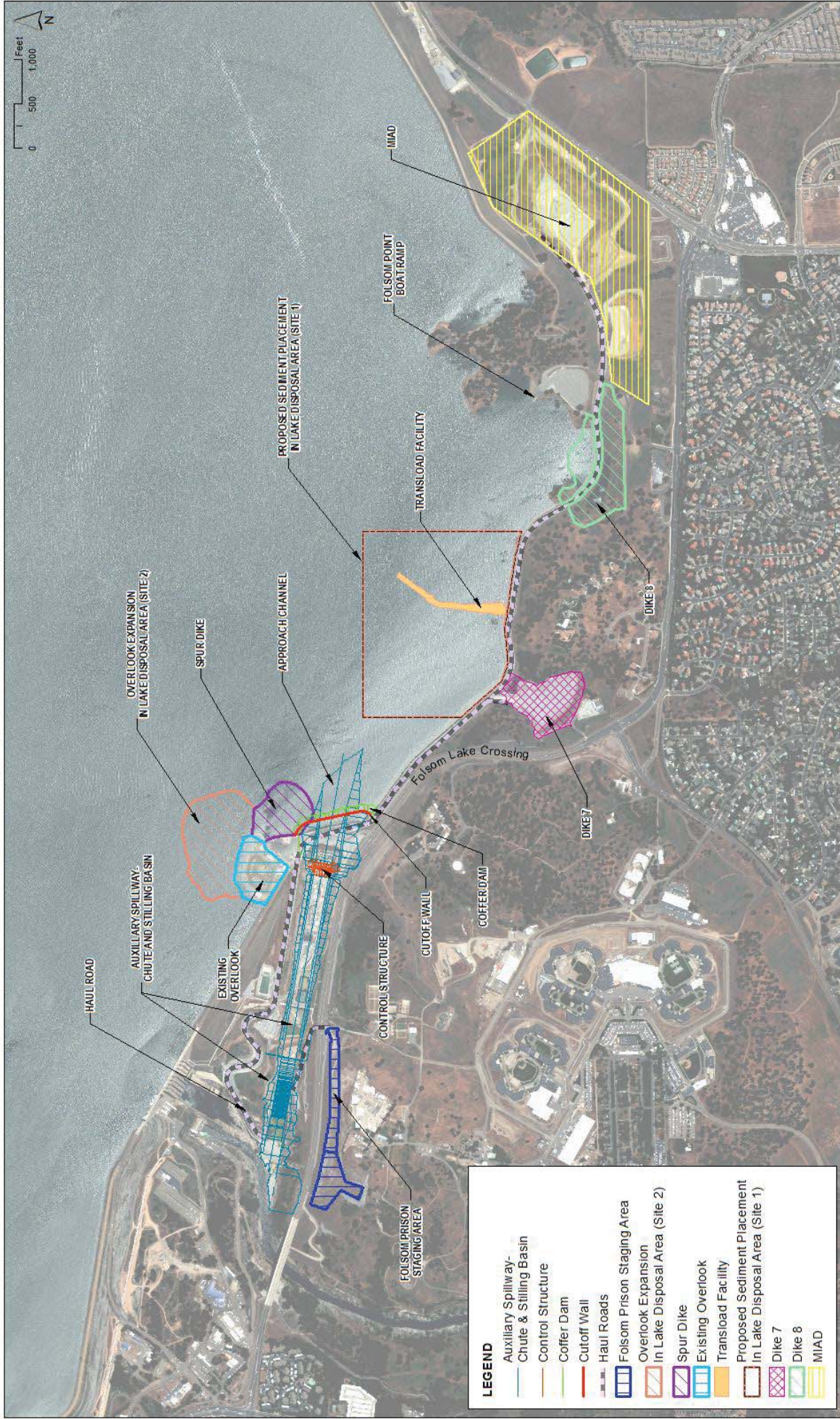
### **List of Attachments**

- A. Project Vicinity Map – Plate 1
- B. Project Features Map – Plate 2
- C. Summary of comments and responses to the Supplemental EIS/EIR
- D. CEQA Findings
- E. Mitigation and Monitoring Plan
- F. Resolution 2013-04



Blank Page Left Intentionally





# Folsom Dam Modification Project, Approach Channel

Blank Page Left Intentionally



## **Organization of Attachment C**

Attachment C is organized into the following sections.

Section 1 explains the purpose of this response to comments.

Section 2 provides responses to comments sorted by the resource categories of the EIS/EIR and has been provided so that the reader may easily find all responses to any specific resource category.

Section 3 contains copies of comments received. The comments are organized, according to the affiliation of the commenter, into five categories: Federal Agency, State Agency, Regional and Local Agency, and General Public. Specific issues within comments received have been assigned a response report identification number. Response identification number(s) are shown in parenthesis following the comment listing.

Section 4 contains the comments received from the Notice of Preparation.

## **Section 1    Introduction**

### **Purpose**

This is Appendix L of the Folsom Dam Safety and Flood Damage Reduction, Folsom Dam Joint Federal Project Folsom Dam Modification Project Approach Channel Final Supplemental Environmental Impact Statement/Environmental Impact Report (EIS/EIR). This attachment contains the responses to comments received on the Draft Supplemental EIS/EIR. The 45-day public review period for the draft document began on July 25, 2012 and ended on September 10, 2012. A notice of availability (NOA) of the draft SEIS/EIR was published in the Federal Register July 20 prior to public review. A public workshop and hearing were held on August 23, 2012 at Folsom City Hall to provide additional opportunities for comments on the Draft SEIS/EIR. As required by environmental regulatory policies – National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA), the U.S. Army Corps of Engineers (Corps) and the State of California Central Valley Flood Protection Board (CVFPB), as lead agencies for the Final Supplemental EIS/EIR, are required to respond to substantive environmental issues raised during the review and consultation process.

During the public review period, comments were received on the Draft Supplemental EIS/EIR from Federal, State, and local agencies, and the general public. Comments were received in a variety of media, including letters, emails, telephone, and public workshop verbal comment transcriptions. These are collectively referred to as “comments” throughout this appendix. This appendix contains copies of all written and email comments received on the Draft Supplemental EIS/EIR and all verbal comments received at the August 23, 2012 workshop (in the form of the written transcripts of the meeting).

Seven comment letters were received on the draft SEIS/EIR from Federal, State, and local agencies and one letter and one personal conversation from members of the public. Most comments were focused around air quality, water quality, blasting and disposal of materials, recreational impacts and public safety, and site restoration.

## **Section 2    Comments and Responses on Draft EIS/EIR**

Blank Page Left Intentionally



**Comments and Responses**  
**on**  
**Draft SEIS/EIR for Folsom Dam Safety and Flood Damage Reduction**  
**Folsom Dam Joint Federal Project, Folsom Dam Modification Project**  
**Approach Channel**  
**December 2012**

| <b>No.</b> | <b>Agency</b>              | <b>Comment</b>                                                                                                                                                                                                                            | <b>Response</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.         | U.S. Bureau of Reclamation | “Reclamation suggests installing signage at the boat launches explaining the purpose of the barrier around the blast site and the effects that underwater blasting can have on people if they are in the water and in range of the blast. | Discussion in Section 4.7.6 has been revised to include explaining the purpose of the safety barriers and blasting effects in the public outreach.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2.         | U.S. Bureau of Reclamation | “Concerning disposal of material in the reservoir: If fine dredge material is placed in the reservoir will it be close enough that it will mobilize when the spillway is operated?                                                        | Mobilized sediment from the Dike 7 disposal area is highly unlikely based on the distance from the channel. Modeling was performed to determine if the new channel configuration will induce vortices. The model confirmed the velocities are not great enough to mobilize these sediments.                                                                                                                                                                                                                                                                                                                                                    |
| 3.         | U.S. Bureau of Reclamation | “2.4.6, page 27: Reclamation refers to the work at MIAD as the Morman Island Auxiliary Dam Modification Project                                                                                                                           | Discussion in Section 2.4.6 has been revised to include the project name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4.         | U.S. Bureau of Reclamation | “4.7.4, page 189: Impacts to recreation (exclusion of public access) should be assessed should be analyzed using the average surface area during peak use periods.                                                                        | Recreation effects were analyzed using gross pool to address the maximum surface area affected by the safety and exclusion boundary. Topography is a steep grade along the south shoreline of Folsom Lake, including proximity to Folsom Dam, and with decline of lake level, the surface area of Folsom Lake does not change substantially. The safety boundary would cover less than 3% of Folsom Lake’s surface area at average summer elevation. Section 4.7.4 has been revised to include the following: "Recreation access and reservoir levels would not be affected by the recreation safety boundary. The boundary will not change as |

|     |                                              |                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                   |
|-----|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                              |                                                                                                                                                                                                                                                                                                                                                                                                   | reservoir levels change."                                                                                                                                                                                         |
| 5.  | U.S. Bureau of Reclamation                   | "Figure 17: Placement of the safety boundary looks like it would isolate the Folsom Point boat launch at lower levels. Is this the case and if so how will these impacts be mitigated?"                                                                                                                                                                                                           | Figure 17 has been updated with the new safety and exclusion boundary. Folsom Point boat launch access would not be affected at low lake levels.                                                                  |
| 6.  | U.S. Department of Interior                  | The Department of the Interior has received and reviewed the subject document and has no comments to offer.                                                                                                                                                                                                                                                                                       | Thank you for your comment.                                                                                                                                                                                       |
| 7.  | U.S. Environmental Protection Agency         | EPA has reviewed this document and rated it Environmental Concerns- Insufficient Information (EC-2) (see enclosed "Summary of Rating Definitions")....We continue to urge implementation of aggressive mitigation measures to reduce project-related emissions to the maximum extent feasible.                                                                                                    | The Corps is adopting unprecedented measures to lower emissions including adoption of Green Construction policies in the use of higher tiered and electrified equipment.                                          |
| 8.  | U.S. Environmental Protection Agency         | We commend the Army Corps of Engineers' commitment to use the cleanest on-road vehicles available and the most recent pollution control equipment for all off-road and marine equipment... We recommend that the Supplemental Final EIS and Record of Decision (ROD) include a clear commitment to these project refinements and the list of control measures with their emission reduction data. | It is with the SMAQMD's cooperation and support that the Corps has been able to accomplish these actions. A clear commitment will be reflected in the Final EIS, ROD and Contract Specifications for the project. |
| 9.  | U.S. Environmental Protection Agency         | Additionally, Table 30 - "Comparison of Mitigated Alternative 2 and Alternative 3 Total Emissions" is unclear. This table is labeled as being in tons/year, but it is also labeled as being "total emissions." The project is anticipated to be constructed over five years. EPA urges the Corps to explain this discrepancy.                                                                     | This has been corrected to read "tons".                                                                                                                                                                           |
| 10. | U.S. Environmental Protection Agency         | Please note that, starting October 1,2012, EPA Headquarters will not accept paper copies or CDs of EISs for official filing purposes. Submissions on or after October 1, 2012 must be made through EPA's new electronic EIS submittal tool: e-NEPA.                                                                                                                                               | This is noted and EIS submission will be made electronically.                                                                                                                                                     |
| 11. | U.S. Environmental Protection Agency         | Please send a copy of the Supplemental Final EIS to the above address (mail code: CED-2) when it becomes available.                                                                                                                                                                                                                                                                               | The USEPA will continue to be on the mailing list.                                                                                                                                                                |
| 12. | California State Parks, Gold Fields District | DPR is unsure if the Draft EIR/EIS fully describes and addresses the potential human health and public safety issues regarding the underwater blasting and aquatic recreation, we believe the final document should disclose and address these issues.                                                                                                                                            | Discussion in Section 3.1.6 has been updated to included additional information on underwater blasting.                                                                                                           |

|     |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13. | California State Parks, Gold Fields District | It is our understanding that the report produced for the Corps on the underwater blasting – “Fish Protection Against Waterborne Pressures” by Ben C. Gerwick, Inc recommended a bubble curtain to mitigate potential impacts from blasting. We are interested in better understanding why this measure will not be required.                                                                                                                                                                                                                                  | The Corps decided to provide the contractor with contract flexibility and instead instituted a safety limitation on the underwater production blasts of 5.8 psi at 2,500 feet. Test blasts will be limited in size up to one fifth of production blasts with constant monitoring to ensure the limit is not exceeded. Implementation of a bubble curtain remains an option for the contractor. The bubble curtain is not a requirement in order to allow contract flexibility for the contractor. This protective option was not requested by regulatory agencies. |
| 14. | California State Parks, Gold Fields District | It appears the Corps may be leaving some of the decisions and mitigation regarding underwater blasting for the contractor to determine... DPR would like to see the Corps define a maximum pressure or intensity at the blast location, or some other means, to ensure the required safety exclusion zone will be effective.                                                                                                                                                                                                                                  | The contractor will be required to meet a safe blasting pressure limitation of 5.8 psi at 2,500 feet. This is a conservative value that is expected to provide full protection to recreational swimmers.                                                                                                                                                                                                                                                                                                                                                           |
| 15. | California State Parks, Gold Fields District | It is our understanding that the test blasting and the production blasting program will not require closure of any Folsom Lake SRA recreation facility. If the project did require closure of any recreation facility, such as Folsom Point, there would be impacts to visitor use and DPR revenues.                                                                                                                                                                                                                                                          | Closure of Folsom Point and/or other Folsom Lake SRA recreation facilities is not anticipated during test blasting. Coordination between the Corps and State Parks would continue throughout the project.                                                                                                                                                                                                                                                                                                                                                          |
| 16. | California State Parks, Gold Fields District | We would like to confirm that the contractor will be required to install a continuous log boom to exclude boats from the blasting safety zone in Folsom Reservoir and will have adequate warning signs/buoys and patrol boats in the area. It is our understanding that the Corps will be limiting blasting intensity so that this safety exclusion zone can be sized so it will not impact public access to Folsom Lake at Folsom Point or Beals Point and that the public can be effectively excluded from the safety zone area by the contractor or Corps. | The contractor will be required to construct a physical barrier 3,000 feet from the blast zone which will be maintained throughout the construction period. Blasting pressures will be limited in order to provide public underwater safety and allow full access to Folsom Point launch. The safety exclusion barrier will also permit full access from the Folsom Point boat launch. Boat patrols will be required before, during and immediately after blasts. Discussion on page 194 has been revised accordingly.                                             |
| 17. | California State Parks, Gold Fields District | DPR’s interests are ensuring public safety, minimizing the impact on recreation use and public disclosure of potential effects from underwater blasting on human health.                                                                                                                                                                                                                                                                                                                                                                                      | Interruption to recreation is anticipated to be minimal during the project. Every effort will be made to ensure public health and safety.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 18. | California State Parks,                      | After all construction activities, DPR would like to see a portion of the haul road from the spillway gate construction site to Folsom Point made available for development of a recreation trail (including potentially a paved trail) from Dike 7 to Folsom Point and across the top of                                                                                                                                                                                                                                                                     | The haul road would be regraded and revegetated with native grasses to return the area to a natural state consistent with the shoreline of Folsom Lake.                                                                                                                                                                                                                                                                                                                                                                                                            |

|     |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                          |
|-----|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | Gold Fields District                         | MIAD to the intersection of Green Valley Rd and Sophia Parkway.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Further development of recreational trails would need to be coordinated with USBR. This comment will be forwarded to USBR.                                                                                                                                                                                                                               |
| 19. | California State Parks, Gold Fields District | After all construction activities, DPR would like to see the area around Dike 7 – which is a spoils deposition site - made available for recreation facilities, including a potential future trailhead facility and parking area at Dike 7.                                                                                                                                                                                                                                                                                       | The work sites and staging areas would be restored to pre-project conditions. Any un-vegetated areas disturbed during construction would be hydro-seeded with native grass species. Further development of recreational facilities on lands under jurisdiction of the USBR would require coordination with USBR. This comment will be forwarded to USBR. |
| 20. | Central Valley Regional WQ Control Board     | “Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.”                                                                                                                                                                                                                                                                                                                                      | All required permits related to water quality will be obtained by the Corps and contractor prior to initiation of construction. The Corps will ensure that the contractor complies with certification and permit requirements to be implemented during construction.                                                                                     |
| 21. | Sac Metro AQ Management District             | (Page 53) Clarify in the Attainment Status section that General Conformity thresholds are for ozone “precursors.”                                                                                                                                                                                                                                                                                                                                                                                                                 | GC thresholds have been clarified in the document.                                                                                                                                                                                                                                                                                                       |
| 22. | Sac Metro AQ Management District             | (Page 54) In the Attainment Status section, remove “threshold” in reference to the 1-hour ozone NAAQS.                                                                                                                                                                                                                                                                                                                                                                                                                            | “Threshold” has been removed from this section.                                                                                                                                                                                                                                                                                                          |
| 23. | Sac Metro AQ Management District             | (Page 54) The status of SIP planning regarding ozone needs to include both the 1994 1-hour ozone and 1997 8-hour ozone SIPs. Details may be obtained from the following website: <a href="http://www.airquality.org/plans/federal/ozone/index.shtml">http://www.airquality.org/plans/federal/ozone/index.shtml</a> .                                                                                                                                                                                                              | The details have been obtained and both 1- hour and 8-hour ozone SIPs have been included in the document.                                                                                                                                                                                                                                                |
| 24. | Sac Metro AQ Management District             | (Page 54) The status of SIP planning regarding PM2.5 needs to be updated based on the request to USEPA Region 9 to find the region in attainment of the PM2.5 NAAQS. (5/9/12 CARB letter, website reference: <a href="http://www.airquality.org/plans/federal/pm/PM2.5/SacRegCleanDataTransmittalAndEnclosure-signed.pdf">http://www.airquality.org/plans/federal/pm/PM2.5/SacRegCleanDataTransmittalAndEnclosure-signed.pdf</a> ) SMAQMD is preparing a redesignation request and maintenance plan for submission in early 2013. | The SIP planning status has been updated in the document.                                                                                                                                                                                                                                                                                                |
| 25. | Sac Metro AQ Management District             | (Page 123) In the Basis of Significance section, two clarifications are needed:<br>a. Change ROG from 50 tons/year to 25 tons/year to reflect the General Conformity requirement, which is consistent with Table 18.<br>b. Clarify that for PM10 a significant impact may occur if the project emits PM10 at a level that substantially contributes to an existing or projected violation of the PM10 California Ambient Air Quality Standards (CAAQS), which is 5% of the CAAQS. SMAQMD does not                                 | The clarifications have been added to the document.                                                                                                                                                                                                                                                                                                      |

|     |                                  |                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                    |
|-----|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
|     |                                  | meet the PM10 CAAQS, therefore the substantial contribution threshold is used, which is much lower than the actual CAAQS listed. (SMAQMD Threshold Table, website reference: <a href="http://www.airquality.org/ceqa/cequguideupdate/Ch2TableThresholds.pdf">http://www.airquality.org/ceqa/cequguideupdate/Ch2TableThresholds.pdf</a> ) |                                                                                                                                    |
| 26. | Sac Metro AQ Management District | (Page 124) The SMAQMD CEQA Thresholds section states the “SMAQMD has not designated construction thresholds for PM2.5, ROG, CO or SO2.” The SMAQMD’s Threshold Table (referenced in comment 5.b. above) indicates that the CAAQS are concentration thresholds for both construction and operational emissions.                           | This statement has been removed from the document.                                                                                 |
| 27. | Sac Metro AQ Management District | (Page 125) Similar to comment 5.b. above, Table 19 needs to be updated to recognize the PM10 threshold as a substantial contribution to an existing or projected violation of the ambient air quality standards listed.                                                                                                                  | Table 19 in Section 4.2.2 has been updated to include this statement.                                                              |
| 28. | Sac Metro AQ Management District | (Page 125) Table 19 needs to be corrected to show the concentrations and units either µg/m3 or ppm as noted in the SMAQMD’s Thresholds of Significance Table: <a href="http://www.airquality.org/ceqa/cequguideupdate/Ch2TableThresholds.pdf">http://www.airquality.org/ceqa/cequguideupdate/Ch2TableThresholds.pdf</a> .                | Table 19 has been corrected.                                                                                                       |
| 29. | Sac Metro AQ Management District | (Pages 124, 129 (table 24) and 133 (table 29)) The mitigation fee rate noted in various sections of the document is \$16,640 per ton of NOX. As of July 1, 2012 that fee rate changed to \$17,080.                                                                                                                                       | The fee rate has been changed to \$ 17,080.                                                                                        |
| 30. | Sac Metro AQ Management District | (Page 125) Provide justification for selecting 3 pounds/hour as the significance threshold for diesel particulate matter emissions.                                                                                                                                                                                                      | This statement has been removed from the document.                                                                                 |
| 31. | Sac Metro AQ Management District | (Page 137) Clarify that Interim Tier 4 and/or Final Tier 4 off-road equipment will be used beginning in 2015.                                                                                                                                                                                                                            | Clarification has been made for Tier 4 equipment in Section 4.2.7.                                                                 |
| 32. | Sac Metro AQ Management District | (Page 137) Add language to the mitigation that in addition to using Tier 3 and Tier 4 off-road equipment, contractors must report their equipment specifications to the SMAQMD and the Army Corps to ensure the mitigation is being implemented.                                                                                         | Language has been added in Section 4.2.7 that contractors must report equipment specifications to SMAQMD.                          |
| 33. | Sac Metro AQ Management District | (Pages 138 and 139) Clarify that MY 2010 or newer haul trucks will be used for the duration of the project and that use of those trucks will guarantee the best available emission controls for NOx and PM emissions, not Tier 3 emissions.                                                                                              | Clarification that MY 2010 or newer haul trucks will be used to guarantee best emissions controls has been added to Section 4.2.7. |

|     |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 34. | Sac Metro AQ Management District | (Page 138) To ensure there won't be confusion at the time of construction, please add that the NOx Mitigation Fee applies to all emissions from the project: on-road (on- and off-site), off-road, portable, marine and stationary equipment and vehicles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Application to all emissions from the project has been added to Section 4.2.7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 35. | Sac Metro AQ Management District | (Page 225) In the discussion of Unavoidable Adverse Effects there is a statement that NOx levels are reduced to zero. NOx levels are being reduced to 85 pounds/day, the SMAQMD's threshold of significance, not zero.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | This statement has been corrected in Section 4.2.7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 36. | Sac Metro AQ Management District | (Pages 229, 250 and ES-13) There is not a climate change SIP as noted in Tables 51, 54 and ES-1).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SIP references have been removed from climate change.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 37. | Sac Metro AQ Management District | (Page 244) Does the Army Corps plan to coordinate construction timing with other agencies to reduce cumulative emissions to less than significant, or is a significant and unavoidable cumulative impact being determined?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | The Corps is not able to coordinate construction timing with other agencies to reduce cumulative emissions. This statement has been removed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 38. | Rennie James                     | <p>I would like this project to increase to the maximum the greatest capacity of the reservoir to contain water. I believe that silting of the reservoir over the decades has reduced the stated capacity. To assist in this effort I would like to see all material in the water side of the dam and associated dikes that is disturbed be removed from that wet side and deposited on the dry side of the projected final high water shore line and not within any wetland or potential flood zone. Simply put if you have to move material within the projected final high water elevation then that material must be deposited outside that area.</p> <p>You may accomplish that by: a. depositing the material to bulk up the dikes and Mormon Island Auxiliary Dam (MIAD) on the dry side. b. allow large area materials resource companies to bid on the rock and fines and allow them to transport it off site. c. when material suppliers bring concrete building materials require them to transport out excess site materials. d. utilize the material to construct an auxiliary parking area for overflow vehicles at Folsom Point where the MIAD deposit site is currently growing and plant oaks around the site.</p> | <p>Manipulated water levels within the reservoir are outside the scope of this EIS/EIR, but will be addressed by the NEPA/CEQA process for the Folsom Dam Raise Project and Folsom Dam Water Control Manual update. The site(s) used for disposal of excavated material will be decided by the contractor to provide for contract flexibility. Two terrestrial sites will be available for disposal of excavated material; these sites are Dike 8 and MIAD as delineated in the SEIS/EIR. Dike 8 will serve as permanent storage, and temporary disposal material at MIAD will be available for transport off-site. Materials transport will be a contractor decision – agencies may request rock and fines material for other projects. Overflow parking at Folsom Point is outside the scope of this project and is under the jurisdiction of the USBR, but this recommendation will be forwarded to USBR. Oaks that are removed will be replaced per USFWS recommendations.</p> |
| 39. | Rennie James                     | Mitigation of trees and bushes should be on site rather than Mississippi Bar when possible. Oaks and Elderberry can be replanted on site to restore habitation for wildlife.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Construction would be implemented in a manner that minimizes disturbance. Native trees, shrubs, and aquatic vegetation will be avoided to the greatest extent feasible. Compensatory mitigation would be                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |



|     |                                 |                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                 |                                                                                                                                                                                                                                                                                                                                                                            | completed onsite when possible. Off-site mitigation would be necessary to compensate for impacts to wetlands and open water habitat. The USBR would conduct additional native vegetative plantings after project completion outside the scope of the Corps project work.                                                                                                                                                                   |
| 40. | Rennie James                    | The dry side of Dike 8 between the dike and church could be used to deposit material and planted with trees to improve the view from the church and new homes facing the dry side of the dike. It is a relatively small space devoid of significant vegetation other than invasive plants. The trees could be resourced from the City of Folsom as an improvement project. | Dike 8 is proposed as a site for disposal of up to 720,000 cy of excavated material, however, USBR has withdrawn the dry side from consideration for disposal due to dike safety concerns. Native trees and shrubs will be protected and left in place wherever possible. The USBR will conduct native vegetation plantings after project completion. Recommendations for planting the unused side of Dike 8 will be provided to the USBR. |
| 41. | Rennie James                    | I prefer alternative 3 as it will require less concrete to be installed than alternative 2....                                                                                                                                                                                                                                                                             | Preference for Alternative 3 is noted. The Corps has chosen Alternative 2 as the preferred alternative due to reduced construction risk and time savings in the schedule. This decision was made in the interest of public safety to ensure the fastest completion of the spillway.                                                                                                                                                        |
| 42. | Rennie James                    | Store the excess material in the area underneath the new bridge and or on Folsom Prison property above any potential flood level and the prison may be able to use the area for future activities or construction projects.                                                                                                                                                | The prison has been offered excavation material, but has not requested material at this time.                                                                                                                                                                                                                                                                                                                                              |
| 43. | Rennie James                    | I would like to see emergency response equipment and materials on scene for immediate use during a spill of contaminants, be it diesel, gasoline...                                                                                                                                                                                                                        | The contractor will be required to provide a detailed contaminants containment plan and exhibit emergency response and spill containment equipment and materials before construction begins. Water quality thresholds would be required of the Corps by the Central Valley Regional Water Quality Control Board to protect drinking water; these standards will be strictly complied with during the project.                              |
| 44. | Folsom Church of Christ, Pastor | Personal communication – September 12 and 13, 2012. Concern was expressed by representatives of the Folsom Church of Christ primarily regarding an existing drainage issue at the southern base of Dike 8 and potential amplification of the drainage issues resulting from                                                                                                | Engineering expertise was offered for a meeting to address drainage issues. However, after the draft EIS/EIR was issued, USBR removed the southern                                                                                                                                                                                                                                                                                         |

|  |                        |                                                                |                                                                                                                                                                                                                           |
|--|------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Posey; Steve<br>Dickey | construction material disposal on the southern side of Dike 8. | half of Dike 8 for consideration, which appears to alleviate drainage concerns for the church; the remaining drainage area is directed down to the lake on the north side of the dike, away from Folsom Church of Christ. |
|--|------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## **Section 3      Comments Letters on Draft EIS/EIR**

## LeFevre, Jamie M SPK

---

**From:** Stewart, Chelsea D [CStewart@usbr.gov]  
**Sent:** Monday, September 10, 2012 4:49 PM  
**To:** Sandburg, Nancy H SPK; LeFevre, Jamie M SPK  
**Subject:** Re: Comments on Folsom Dam Modification Project Draft SEIS/EIR

Hi Jamie/Nancy,

My comments are as follows:

-Reclamation suggests installing signage at the boat launches explaining the purpose of the barrier around the blast site and the effects that underwater blasting can have on people if they are in the water and in range of the blast.

-Concerning disposal of material in the reservoir: If fine dredge material is placed in the reservoir will it be close enough that it will mobilize when the spillway is operated?

-2.4.6, page 27: Reclamation refers to the work at MIAD as the Morman Island Auxiliary Dam Modification Project.

-4.7.4, page 189: Impacts to recreation (exclusion of public access) should be assessed should be analyzed using the average surface area during peak use periods.

-Figure 17: Placement of the safety boundary looks like it would isolate the Folsom Point boat launch at lower levels. Is this the case and if so how will these impacts be mitigated?

Thank you for the opportunity to comment,

Chelsea Stewart

Natural Resource Specialist

Bureau of Reclamation

(916)989-7155



# United States Department of the Interior

OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
Pacific Southwest Region  
333 Bush Street, Suite 515  
San Francisco, CA 94104

IN REPLY REFER TO:  
(ER 12/524)

*Filed Electronically*

05 September 2012

U.S. Army Corps of Engineers  
Sacramento District  
Attn: Mr. Todd Plain  
Auxiliary Spillway Project  
1325 J Street, Room 1513  
Sacramento, CA 95814

Subject: Review of the Draft Supplemental Environmental Impact Statement (DSEIS) for the Folsom Dam Modification Project Approach Channel, Placer and El Dorado Counties, CA

Dear Mr. Plain:

The Department of the Interior has received and reviewed the subject document and has no comments to offer.

Thank you for the opportunity to review this project.

Sincerely,

Patricia Sanderson Port  
Regional Environmental Officer

cc:  
Director, OEPC  
Loretta Sutton, OEPC Staff Contact



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

SEP 10 2012

Alicia E. Kirchner  
Chief, Planning Division  
U.S. Army Corps of Engineers  
1325 J Street  
Sacramento, CA 95814

Subject: Supplemental Draft Environmental Impact Statement for the Folsom Dam Modification  
Project Approach Channel (CEQ# 20120239)

Dear Ms. Kirchner:

The U.S. Environmental Protection Agency (EPA) has reviewed the Supplemental Draft Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The Supplemental Draft EIS was prepared by the Corps to augment the 2007 Record of Decision (ROD) for the Folsom Dam Safety and Flood Damage Reduction Project. EPA has reviewed this document and rated it Environmental Concerns- Insufficient Information (EC-2) (see enclosed "*Summary of Rating Definitions*"). EPA appreciates the additional information regarding the construction of the auxiliary spillway approach channel that was evaluated programmatically in the previous EIS. We continue to urge implementation of aggressive mitigation measures to reduce project-related emissions to the maximum extent feasible.

We commend the Army Corps of Engineers' commitment to use the cleanest on-road vehicles available and the most recent pollution control equipment for all off-road and marine equipment, use of electrical power for all stationary equipment, reduction of haulage miles, and scheduling changes to minimize the overlap of emission producing activities. These emission control measures will be essential to meet Federal General Conformity *de minimis* thresholds and reduce air quality impacts to the greatest extent possible. We recommend that the Supplemental Final EIS and Record of Decision (ROD) include a clear commitment to these project refinements and the list of control measures with their emission reduction data.

Additionally, Table 30 - "Comparison of Mitigated Alternative 2 and Alternative 3 Total Emissions" is unclear. This table is labeled as being in tons/year, but it is also labeled as being "total emissions." The project is anticipated to be constructed over five years. EPA urges the Corps to explain this discrepancy.

Please note that, starting October 1, 2012, EPA Headquarters will not accept paper copies or CDs of EISs for official filing purposes. Submissions on or after October 1, 2012 must be made through EPA's new electronic EIS submittal tool: *e-NEPA*. To begin using *e-NEPA*, you must first register with EPA's electronic reporting site - [https://cdx.epa.gov/epa\\_home.asp](https://cdx.epa.gov/epa_home.asp). Electronic filing with EPA Headquarters does not change the requirement to submit a hard copy to the EPA Region 9 Office for review.

We appreciate the opportunity to review this Supplemental Draft EIS. Please send a copy of the Supplemental Final EIS to the above address (mail code: CED-2) when it becomes available. If you have any questions, please contact me at 415-972-3521, or contact Stephanie Skophammer, the lead reviewer for this project, at 415-972-3098 or Skophammer.stephanie@epa.gov.

Sincerely, : 43

*Kathleen Martyn Goforth*  
For Kathleen Martyn Goforth, Manager  
Environmental Review Office  
Communities and Ecosystems Division

Enclosure: Summary of Rating Definitions

## **SUMMARY OF EPA RATING DEFINITIONS\***

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

### **ENVIRONMENTAL IMPACT OF THE ACTION**

#### ***"LO" (Lack of Objections)***

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

#### ***"EC" (Environmental Concerns)***

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

#### ***"EO" (Environmental Objections)***

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

#### ***"EU" (Environmentally Unsatisfactory)***

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

### **ADEQUACY OF THE IMPACT STATEMENT**

#### ***"Category 1" (Adequate)***

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

#### ***"Category 2" (Insufficient Information)***

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

#### ***"Category 3" (Inadequate)***

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.



**From:** [Micheaels, Jim](#)  
**To:** [Sandburg, Nancy H SPK](#)  
**Cc:** [Green, Matt](#); [Preston, Rich](#)  
**Subject:** Comments regarding Approach Channel DEIR/DEIS  
**Date:** Friday, August 31, 2012 5:03:16 PM

---

Nancy –

Please consider this note the comments of the Gold Fields District of California State Parks regarding the Draft Supplemental EIR/EIS for the Folsom Dam Modification Approach Channel. Gold Fields District staff appreciates the recent meetings and information the Corps has provided regarding the project, including the provisions for underwater blasting. We also appreciate some of the changes the Corps is making to minimize the impacts of underwater blasting on recreation use and the public. The current version of the DEIR/DEIS does not fully address all of the issues regarding underwater blasting and public safety and we understand the Corps will be making changes to the final document to address some of these issues. Here are some specific comments based on our current understanding of the project and safety provisions the Corps is putting in place.

-DPR is unsure if the Draft EIR/EIS fully describes and addresses the potential human health and public safety issues regarding the underwater blasting and aquatic recreation, we believe the final document should disclose and address these issues.

-It is our understanding that the report produced for the Corps on the underwater blasting – “Fish Protection Against Waterborne Pressures” by Ben C. Gerwick, Inc recommended a bubble curtain to mitigate potential impacts from blasting. We are interested in better understanding why this measure will not be required.

-It appears the Corps may be leaving some of the decisions and mitigation regarding underwater blasting for the contractor to determine. As an example, instead of requiring a bubble curtain to minimize the potential effects of underwater blasting on humans, the Corps is leaving it up to the contractor to assess if a curtain will be needed. The Corps is specifying a certain pressure at a certain distance from the blasting and will be monitoring the blasting and addressing with the contractor when blasts exceed the standard. This after-the-fact monitoring doesn't absolutely ensure that there will be no safety concern for aquatic recreation. DPR would like to see the Corps define a maximum pressure or intensity at the blast location, or some other means, to ensure the required safety exclusion zone will be effective.

-It is our understanding that the test blasting and the production blasting program will not require closure of any Folsom Lake SRA recreation facility. If the project did require closure of any recreation facility, such as Folsom Point, there would be impacts to visitor use and DPR revenues.

-We would like to confirm that the contractor will be required to install a continuous log boom to exclude boats from the blasting safety zone in Folsom Reservoir and will have adequate warning signs/buoys and patrol boats in the area. It is our understanding that the Corps will be limiting blasting intensity so that this safety exclusion zone can be sized so it will not impact public access to Folsom Lake at Folsom Point or Beals Point and that the public can be effectively excluded from the safety zone

area by the contractor or Corps.

-DPR's interests are ensuring public safety, minimizing the impact on recreation use and public disclosure of potential effects from underwater blasting on human health.

Other items that we have mentioned before in past comment letters on the Folsom Dam Modification Project which remain interests and concerns are:

-After all construction activities, DPR would like to see a portion of the haul road from the spillway gate construction site to Folsom Point made available for development of a recreation trail (including potentially a paved trail) from Dike 7 to Folsom Point and across the top of MIAD to the intersection of Green Valley Rd and Sophia Parkway.

-After all construction activities, DPR would like to see the area around Dike 7 – which is a spoils deposition site - made available for recreation facilities, including a potential future trailhead facility and parking area at Dike 7.

Thank you.

Jim Micheaels, Senior Park & Recreation Specialist

Gold Fields District

7806 Folsom-Auburn Road

Folsom, CA 95630

(916) 988-0513

(916) 988-9062 fax

## Central Valley Regional Water Quality Control Board

20 August 2012

David Martasian  
Central Valley Flood Protection Board  
3310 El Camino Avenue, Room 151  
Sacramento, CA 95821

CERTIFIED MAIL  
7011 2970 0003 8939 1736

### **COMMENTS TO THE DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT, FOLSOM DAM MODIFICATION PROJECT, SCH NO. 2012072039, SACRAMENTO COUNTY**

Pursuant to the State Clearinghouse's 20 July 2012 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Draft Supplemental Environmental Impact Statement/Environmental Impact Report* for the Folsom Dam Modification Project, located in Sacramento County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

#### **Construction Storm Water General Permit**

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:  
[http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml).



### **Phase I and II Municipal Separate Storm Sewer System (MS4) Permits<sup>1</sup>**

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/centralvalley/water\\_issues/storm\\_water/municipal\\_permits/](http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/).

### **Industrial Storm Water General Permit**

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/centralvalley/water\\_issues/storm\\_water/industrial\\_general\\_permits/index.shtml](http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml).

### **Clean Water Act Section 404 Permit**

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

### **Clean Water Act Section 401 Permit – Water Quality Certification**

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

---

<sup>1</sup> Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

**Waste Discharge Requirements**

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:

[http://www.waterboards.ca.gov/centralvalley/help/business\\_help/permit2.shtml](http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml).

If you have questions regarding these comments, please contact me at (916) 464-4684 or [tcleak@waterboards.ca.gov](mailto:tcleak@waterboards.ca.gov).

A handwritten signature in dark ink, appearing to read "Trevor Cleak", is written over a faint, light-colored circular stamp.

Trevor Cleak  
Environmental Scientist

cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

August 29, 2012

SENT VIA E-MAIL ONLY

Mr. Todd Plain  
Public Affairs Specialist  
U.S. Army Corps of Engineers, Sacramento District  
1325 J Street  
Sacramento, CA 95814

**Folsom Dam Modification Project, Approach Channel Draft Supplemental EIS/EIR (SAC200500806I)**

Dear Mr. Plain:

Thank you for providing the Draft Supplemental Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) for the Folsom Dam Modification Project, Approach Channel to the Sacramento Metropolitan Air Quality Management District (SMAQMD) for review. Because the Army Corps coordinated extensively with SMAQMD on the air quality analysis and mitigation associated with the project, minor comments on the EIS/EIR are being provided.

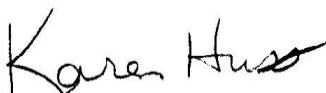
1. (Page 53) Clarify in the Attainment Status section that General Conformity thresholds are for ozone "precursors."
2. (Page 54) In the Attainment Status section, remove "threshold" in reference to the 1-hour ozone NAAQS.
3. (Page 54) The status of SIP planning regarding ozone needs to include both the 1994 1-hour ozone and 1997 8-hour ozone SIPs. Details may be obtained from the following website:  
<http://www.airquality.org/plans/federal/ozone/index.shtml>.
4. (Page 54) The status of SIP planning regarding PM2.5 needs to be updated based on the request to USEPA Region 9 to find the region in attainment of the PM2.5 NAAQS.  
(5/9/12 CARB letter, website reference:  
<http://www.airquality.org/plans/federal/pm/PM2.5/SacRegCleanDataTransmittalAndEnclosure-signed.pdf>)  
SMAQMD is preparing a redesignation request and maintenance plan for submission in early 2013.
5. (Page 123) In the Basis of Significance section, two clarifications are needed:
  - a. Change ROG from 50 tons/year to 25 tons/year to reflect the General Conformity requirement, which is consistent with Table 18.
  - b. Clarify that for PM10 a significant impact may occur if the project emits PM10 at a level that substantially contributes to an existing or projected violation of the PM10 California Ambient Air Quality Standards (CAAQS), which is 5% of the CAAQS. SMAQMD does not meet the PM10 CAAQS, therefore the substantial contribution threshold is used, which is much lower than the actual CAAQS listed. (SMAQMD Threshold Table, website reference:  
<http://www.airquality.org/ceqa/cequguideupdate/Ch2TableThresholds.pdf>)
6. (Page 124) The SMAQMD CEQA Thresholds section states the "SMAQMD has not designated construction thresholds for PM2.5, ROG, CO or SO2." The SMAQMD's Threshold Table (referenced in comment 5.b.

above) indicates that the CAAQS are concentration thresholds for both construction and operational emissions.

7. (Page 125) Similar to comment 5.b. above, Table 19 needs to be updated to recognize the PM10 threshold as a substantial contribution to an existing or projected violation of the ambient air quality standards listed.
8. (Page 125) Table 19 needs to be corrected to show the concentrations and units either  $\mu\text{g}/\text{m}^3$  or ppm as noted in the SMAQMD's Thresholds of Significance Table:  
<http://www.airquality.org/ceqa/cequguideupdate/Ch2TableThresholds.pdf>.
9. (Pages 124, 129 (table 24) and 133 (table 29)) The mitigation fee rate noted in various sections of the document is \$16,640 per ton of NOX. As of July 1, 2012 that fee rate changed to \$17,080.
10. (Page 125) Provide justification for selecting 3 pounds/hour as the significance threshold for diesel particulate matter emissions.
11. (Page 137) Clarify that Interim Tier 4 and/or Final Tier 4 off-road equipment will be used beginning in 2015.
12. (Page 137) Add language to the mitigation that in addition to using Tier 3 and Tier 4 off-road equipment, contractors must report their equipment specifications to the SMAQMD and the Army Corps to ensure the mitigation is being implemented.
13. (Pages 138 and 139) Clarify that MY 2010 or newer haul trucks will be used for the duration of the project and that use of those trucks will guarantee the best available emission controls for NOx and PM emissions, not Tier 3 emissions.
14. (Page 138) To ensure there won't be confusion at the time of construction, please add that the NOx Mitigation Fee applies to all emissions from the project: on-road (on- and off-site), off-road, portable, marine and stationary equipment and vehicles.
15. (Page 225) In the discussion of Unavoidable Adverse Effects there is a statement that NOx levels are reduced to zero. NOx levels are being reduced to 85 pounds/day, the SMAQMD's threshold of significance, not zero.
16. (Pages 229, 250 and ES-13) There is not a climate change SIP as noted in Tables 51, 54 and ES-1).
17. (Page 244) Does the Army Corps plan to coordinate construction timing with other agencies to reduce cumulative emissions to less than significant, or is a significant and unavoidable cumulative impact being determined?

Please contact me at 916-874-4881 or [khuss@airquality.org](mailto:khuss@airquality.org) if you have any questions regarding these comments.

Sincerely,



Karen Huss  
Associate Air Quality Planner/Analyst  
Land Use and Mobile Sources Division

Cc: Larry Robinson, SMAQMD  
Charles Anderson, SMAQMD  
Nancy Sandburg, U.S. Army Corps of Engineers

From: Sandburg, Nancy H SPK  
Sent: Tuesday, September 04, 2012 8:31 AM  
To: Sandburg, Nancy H SPK  
Subject: Rennie James comments (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

Hi Nancy,

Thank you for assisting me with the proper web address. However, I had difficulty getting this document to complete the process so I am sending it to you in hopes you will forward it to the proper persons.

Thank you again,

Rennie James

125 Landrum Circle

Folsom, CA 95630

---

From: spk-pao@usace.army.mil  
To: CESPk-PD@usace.army.mil, rennie1@comcast.net  
Sent: Tuesday, August 28, 2012 6:13:55 PM  
Subject: Sacramento District Contact Form: Folsom Dam Modification Approach  
Channel SEIS/EIR

This message was sent from the Sacramento District website.

Message From: Rennie James  
Email: rennie1@comcast.net  
Response requested: Yes

Message:

Dear Madam or Sir,

I participated in a public event in Folsom on 23August 2012 to review the project and it's plans and projected impacts on the area. I have a few preferences that I as a neighbor to the project would like you to consider.

1. I would like this project to increase to the maximum the greatest capacity of the reservoir to contain water, I believe that silting of the reservoir over the decades has reduced the stated capacity. To assist in this effort I would like to see all material in the wet side of the dam and associated dikes that is disturbed be removed from that wet side and deposited on the dry side of the projected final high water shore line and not within any wetland or potential flood zone. Simply put if you have to move material within the projected final high water elevation then that material must be deposited outside that area.



You may accomplish that by: a. depositing the material to bulk up the dikes and Mormon Island Auxiliary Dam (MIAD) on the dry side. b. allow large area materials resource companies to bid on the rock and fines and allow them to transport it off site. c. when material suppliers bring concrete building materials require them to transport out excess site materials. d. utilize the material to construct an auxiliary parking area for overflow vehicles at Folsom Point where the MIAD deposit site is currently growing and plant oaks around the site.

2. Mitigation of trees and bushes should be on site rather than Mississippi Bar when possible. Oaks and Elderberry can be replanted on site to restore habitation for wildlife.

3. The dry side of Dike 8 between the dike and church could be used to deposit material and planted with trees to improve the view from the church and new homes facing the dry side of the dike. It is a relatively small space devoid of significant vegetation other than invasive plants. The trees could be resourced from the City of Folsom as an improvement project.

4. I prefer alternative 3 as it will require less concrete to be installed than alternative 2. Alternative 2 requires concrete be brought in, erected as a barrier then dismantled and removed. Alternative 3 allows the use of dredged material to be used for the coffer dam and then remove it from the wet side of the projected high water mark and placed outside any potential water storage area.

5. Store the excess material in the area underneath the new bridge and or on Folsom Prison property above any potential flood level and the prison may be able to use the area for future activities or construction projects.

6. There are at least two manufacturing companies that have moved to Folsom specifically for water quality, Kikkoman and Gekkeikan Sake. I would like to see emergency response equipment and materials on scene for immediate use during a spill of contaminants, be it diesel, gasoline or some other material I am not familiar with. Simply having a plan without onsite material is inadequate in my estimation.

In summation I would like to thank you for providing me with the opportunity to have input for this project. I have followed it for my grandchildren more than anything else. I have followed the project closely and appreciate the work so far completed and the care for the community that managers of this JPA has shown.

Thank you very sincerely, Rennie James 125 Landrum Circle, Folsom, CA 95630

Classification: UNCLASSIFIED

Caveats: NONE

Nancy H. Sandburg  
Biological Sciences Environmental Manager  
Planning, Environmental Analysis Section  
U.S. Army Corps of Engineers  
1325 J Street  
Sacramento, CA 95814  
(916)-557-7134; nancy.h.sandburg@usace.army.mil

Blank Page Left Intentionally

## **Section 4      Comments Letters on NOI/NOP**



FEMA



October 11, 2011

David Martasian  
Central Valley Flood Protection Board  
3310 El Camino Avenue, Room 147  
Sacramento, California 95821

Dear Mr. Martasian:

This is in response to your request for comments on the Notice of Preparation (Revised) of Draft Supplemental EIS/EIR and Notice of Public Scoping Meeting regarding the Folsom Dam Safety/Flood Damage Reduction – Auxiliary Spillway Approach Channel Project.

Please review the current effective Flood Insurance Rate Maps (FIRMs) for the City of Folsom (Community Number 060263), Maps dated September 30, 1992; Sacramento County (Community Number 060262), Maps revised December 8, 2008; El Dorado County (Community Number 060040), Maps revised September 26, 2008; and Placer County (Community Number 060239), Maps dated November 21, 2001. Please note that the above-referenced communities are participants in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.
- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any **development** must not increase base flood elevation levels. **The term development means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed *prior* to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

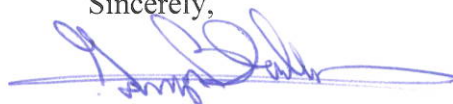
- All buildings constructed within a coastal high hazard area, (any of the “V” Flood Zones as delineated on the FIRM), must be elevated on pilings and columns, so that the lowest horizontal structural member, (excluding the pilings and columns), is elevated to or above the base flood elevation level. In addition, the posts and pilings foundation and the structure attached thereto, is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.
- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA’s Flood Map Revision Application Packages, please refer to the FEMA website at <http://www.fema.gov/business/nfip/forms.shtm>.

**Please Note:**

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community’s floodplain manager for more information on local floodplain management building requirements. The City of Folsom floodplain manager can be reached by calling David Miller, Community Development Director, at (916) 355-7224. The Sacramento County floodplain manager can be reached by calling George Booth, Senior Civil Engineer, at (916) 874-6484. The El Dorado County floodplain manager can be reached by calling Roger Trout at (530) 621-5775. The Placer County floodplain manager can be reached by calling Ken Grehm, Floodplain Administrator, at (530) 745-7588.

If you have any questions or concerns, please do not hesitate to call Cynthia McKenzie at (510) 627-7190 and/or Michael Hornick at (510) 627-7260 of the Mitigation staff.

Sincerely,



Gregor Blackburn, CFM, Branch Chief  
Floodplain Management and Insurance Branch

David Martasian  
Page 3  
October 11, 2011

cc:

David Miller, Community Development Director, City of Folsom  
George Booth, Senior Civil Engineer, County of Sacramento, Department of Water Resources  
Roger Trout, El Dorado County  
Ken Grehm, Floodplain Administrator, Placer County  
Ray Lee, WREA, State of California, Department of Water Resources, North Central Region  
Office  
Cynthia McKenzie, Senior Floodplanner, CFM, DHS/FEMA Region IX  
Michael Hornick, Floodplanner, CFM, DHS/FEMA Region IX  
Alessandro Amaglio, Environmental Officer, DHS/FEMA Region IX





**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Southwest Region  
650 Capitol Mall, Suite 5-100  
Sacramento, CA 95814-4700

OCT 17 2011



Dave Martasian  
Central Valley Flood Protection Board  
Room 147  
3310 El Camino Avenue  
Sacramento, California 95821

Dear Mr. Martasian:

I am writing in response to the "Notice of Preparation (Revised) of Draft Supplemental EIS/EIR" for the "Folsom Dam Safety/Flood Damage Reduction – Auxiliary Spillway Approach Channel Project." NOAA's National Marine Fisheries Service (NMFS) is responsible for the management and protection of anadromous fish resources and their habitats.

In the American River, the anadromous species listed under the Federal Endangered Species Act include the threatened California Central Valley steelhead (*Oncorhynchus mykiss*) distinct population segment (DPS), and the threatened Southern DPS of North American green sturgeon (*Acipenser medirostris*). In addition, NMFS is responsible for reviewing projects that may affect the designated critical habitats for these species (steelhead and North American green sturgeon). NMFS is also responsible for Chinook salmon (*O. tshawytscha*), and for reviewing actions for potential adverse effects to the Essential Fish Habitat for Pacific salmon (*Oncorhynchus* spp.) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act. NMFS responsibilities include consulting in accordance with the provisions of the Fish and Wildlife Coordination Act of 1934, as amended.

NMFS requests the Central Valley Flood Protection Board address any potential effects of the proposed project on anadromous species in the supplemental environmental impact statement and environmental impact report. Specifically, we request the following potential impacts be addressed:

- (1) Identify changes in existing operations and how those changes will affect the Folsom Reservoir cold water pool, and water temperatures in the lower American River;
- (2) identify potential effects downstream to the San Francisco Bay;
- (3) identify how the proposed project will affect fish passage of anadromous fish upstream of Folsom Dam, including collection of downstream migrating fish,
- (4) identify potential effects on flows and ramping in the American River; and
- (5) Identify potential water quality effects.



Because flood operations potentially result in take of federally listed species, NMFS also recommends that U.S. Army Corps of Engineers include this project in a request for consultation under the Federal Endangered Species Act for the California Central Valley Flood Control Project.

If you have any questions concerning this project, or require additional information, please contact Gary Sprague at (916) 930-3615, or via email at: [Gary.Sprague@noaa.gov](mailto:Gary.Sprague@noaa.gov). Thank you for the opportunity to provide comments on the scoping for this project.

Sincerely,



Maria Rea  
Supervisor, Central Valley Office

cc: Copy to File ARN: 151422SWR2004SA9097  
NMFS-PRD, Long Beach, CA





DEPARTMENT OF PARKS AND RECREATION

Gold Fields District  
7806 Folsom Auburn Road  
Folsom, CA 95630

Ruth Coleman, Director

October 26, 2011

David Martasian  
Central Valley Flood Protection Board  
3310 El Camino Avenue, Room 147  
Sacramento, CA 95821



Dear Mr. Martasian,

This letter is to express the comments and concerns of the Gold Fields District of California State Parks in response to the Notice of Preparation regarding the Auxiliary Spillway Approach Channel Project (SCH# 2006022091). The Gold Fields District of California State Parks manages recreation and public use at Folsom Lake State Recreation Area through an agreement with the U.S. Bureau of Reclamation. There are approximately 1.5 million visitors to Folsom Lake SRA annually. The proposed approach channel Project would occur within portions of the land and waters within Folsom Lake SRA. State Parks staff have provided preliminary input to U.S. Corps of Engineers staff who are working on this project. State Parks has previously commented on other aspects of the Auxiliary Spillway Joint Federal Project, including a January 26, 2007 letter to the U.S. Bureau of Reclamation regarding the Folsom Dam Safety and Flood Damage Reduction Draft EIR/EIS.

One of State Parks' key concerns regarding the Approach Channel Project is the potential impacts to recreation and public access at Folsom Point or elsewhere within Folsom Lake SRA. This would include closure of Folsom Point for construction staging, spoils transfer or project elements. The recreation facilities at Folsom Point include a boat ramp and 125 vehicle parking lot, and picnic area. As noted in our 2007 letter, approximately 112,000 visitors recreate at Folsom Point annually. Closure of the Folsom Point or other recreation areas for the Approach Channel, either temporary or longer term, would not only impact visitation but also user fee revenues collected.

In the 2007 Record of Decision for the Folsom Dam Safety and Flood Damage Reduction EIS, Reclamation indicated the public would have near continuous access to the main recreation facilities at Folsom Lake throughout the construction period. State Parks hopes this commitment remains true for the Approach Channel phase of the project. We understand that the U.S. Corps of Engineers is designing a temporary transload facility in the vicinity of Dike 7 which would be used to transfer spoil material from barges to trucks and transport the material via the existing haul road to the Mormon Island Auxiliary Dam (MIAD) disposal site. This approach would avoid impacts to public access and recreation at Folsom Point. The Folsom Point overpass of the haul road to the MIAD disposal site was specifically constructed to maintain public access to Folsom Point.

State Parks has a general concern about in-water blasting and excavation activities and the safety of recreational users on Folsom Lake. Recreational use on Folsom Lake includes boating, water skiing and wakeboarding, fishing, canoeing, kayaking, windsurfing and swimming. We presume the lead agencies will take appropriate actions, including an adequate exclusion zone around the work area to avoid any safety issues with the recreating public.

State Parks also has a general concern about potential water quality impacts in Folsom Lake and downstream from the in-water excavation activities. Again, we presume appropriate measures will be taken to contain turbidity and prevent water quality impacts down stream in Lake Natoma.

State Parks has previously commented (in our 1/26/07 letter to Reclamation) on the desire to see that the spillway haul road, from Dike 7 to Folsom Point, is able to be utilized as the alignment for a paved bike path following the Dam Safety and Flood Protection construction activities. State Parks does not expect that the Dam Safety and Flood Protection Project would construct the actual trail, but that the haul road could be restored to or left in a condition that would make it suitable for a future paved trail. Development of a paved bike path route between Dike 7 and Folsom Point is included in the guidelines for the General Plan/Resource Management Plan for Folsom Lake SRA, completed in 2009. A paved trail alignment in this area is also acknowledged in the City of Folsom Bikeway Master Plan. A paved trail between Dike 7 and Folsom Point would connect to the paved bike path on the new Folsom Lake Crossing Bridge and the City of Folsom proposed bicycle overcrossing of the Folsom Lake Crossing Road. The trail could also connect across the top of MIAD to the trailhead and parking area at Mormon Island Cove (Sophia Parkway).

State Parks also has an interest in the final disposition of the areas where spoils are being deposited at Dike 7. The Dike 7 area has the potential to be developed as a trailhead access point and/or potentially other recreation facilities in the future. While the construction of the haul road and the deposition area at Dike 7 are not necessarily part of the Approach Channel Project, they are part of the larger Dam Safety and Flood Protection Project and may be utilized for the construction of the Approach Channel.

Thank you for considering these comments. If you have questions regarding this letter please contact District Planner Jim Micheaels at (916) 988-0513.

Sincerely,



Scott Nakaji  
Gold Fields District Superintendent

CC    Mike Finnegan, U.S. Bureau of Reclamation  
      Nancy Sandburg, U.S. Army Corps of Engineers

U.S. Department of  
Homeland Security

United States  
Coast Guard



Commander  
Eleventh District

U.S. Coast Guard Island  
Building 50-2  
Alameda, CA 94501-5100  
Staff Symbol: (dpw)  
Phone: (510) 437-3514  
Fax: (510) 437-5836

16591  
American River  
East of Folsom Dam  
November 2, 2011

Central Valley Flood Protection Board  
Attn: Mr. Jay S. Punia  
3310 El Camino Ave., Rm 151  
Sacramento, CA 95821

Dear Mr. Punia:

We have completed our review of the Central Valley Flood Protection Board Notice of Preparation of Draft Supplemental EIS/EIR dated October 3, 2011, for the Folsom Dam Safety/Flood Damage Reduction project, East of Folsom Dam, Folsom Lake, American River, City of Folsom, Counties of Sacramento/Folsom/El Dorado, CA.

It appears the project involves no bridges or bridge related projects across navigable waters of the United States, under the jurisdiction of the Coast Guard. Therefore, The General Bridge Act of 1946 does not apply and the Coast Guard will not exercise jurisdiction for bridge permitting purposes.

We appreciate the opportunity to comment on this project.

Sincerely,

A handwritten signature in dark ink, appearing to read "D. Sulouff", written over the printed name.

DAVID H. SULOUFF  
Chief, Bridge Section  
Eleventh Coast Guard District  
By direction of the District Commander

Copy: Corps of Engineers





**Main Office**

10060 Goethe Road

Sacramento, CA 95827-3553

Tele: [916] 876-6000

Fax: [916] 876-6160

**Sacramento Regional Wastewater**

**Treatment Plant**

8521 Laguna Station Road

Elk Grove, CA 95756-9550

Tele: [916] 875-9000

Fax: [916] 875-9068

**Board of Directors**

**Representing:**

County of Sacramento

County of Yolo

City of Citrus Heights

City of Elk Grove

City of Folsom

City of Rancho Cordova

City of Sacramento

City of West Sacramento

Stan R. Dean  
District Engineer

Prabhakar Somavarapu  
Director of Policy and Planning

Ruben Robles  
Director of Operations

November 8, 2011

David Martasian  
Central Valley Flood Protection Board  
3310 El Camino Ave, Room 147  
Sacramento CA 95821



**Subject: The Folsom Dam Safety/Flood Damage Reduction – Auxiliary Spillway Approach Channel Project**

Dear Mr. Martasian:

Sacramento Regional County Sanitation District (SRCSD) has received the Folsom Dam Safety/Flood Damage Reduction – Auxiliary Spillway Approach Channel Project and has the following comments:

Currently SRCSD operates the Arden Force Main and the Northeast Interceptor which both cross under the American River. The Arden Force Main consists of two parallel 60-inch sewer force mains within twin 72-inch casings that convey as much as 100 million gallons of wastewater per day. The depth of the Arden Force Main ranges from 30 to 40 feet beneath the American River.

The Northeast Interceptor Section 3 is a triple siphon undercrossing which consists of three 48-inch pipelines that are buried approximately 10 feet below the American River bottom. There is two feet of rip-rap protection above the crown of the pipeline. These pipelines convey up to 75 million gallons of wastewater per day.

Changes that have the potential of increasing scouring velocities of the American river may affect the ability of Northeast Interceptor and the Arden Force Main crossings to convey wastewater. Decreased pipe cover on both of these river crossings have the potential to cause significant impacts to these two pipelines and could pose issues to both the environment and human health and safety.

If you have any questions regarding these comments, please contact me at (916) 876-9994.

Sincerely,

Sarena Moore  
SRCSD/SASD  
Policy and Planning

cc: Prabhakar Somavarapu  
Dave Ocenosak  
Michael Meyer  
SRCSD Development Services  
SASD Development Services

Technology in balance with nature

## **Attachment D: CEQA Findings**

Blank Page Left Intentionally

# **STATEMENT OF FINDINGS FOR THE FOLSOM DAM MODIFICATION PROJECT – APPROACH CHANNEL FOLSOM, CALIFORNIA**

## **Project Description**

These Findings address the potential significant impacts and mitigation measures from the construction of the Folsom Dam Modification Project – Approach Channel. This project referred to as the Joint Federal Project (JFP), is a cooperative effort between the U.S. Department of Interior, Bureau of Reclamation (USBR), the U.S. Army Corps of Engineers (Corps), the State of California Central Valley Flood Protection Board (CVFPB), and the Sacramento Area Flood Control Agency (SAFCA). The Final Folsom Dam Safety and Flood Damage Reduction Environmental Impact Statement/Environmental Impact Report (FEIS/EIR) was issued in March 2007 (Reclamation 2007). The JFP implements dam safety and security features along with flood damage reduction features at Folsom Dam and its associated facilities (Folsom Facility).

The flood damage reduction features of the JFP include the construction of a gated auxiliary spillway southeast of the main dam. Initial excavation of the spillway (Phase I & Phase II) was initiated by Reclamation and was completed in (spring/summer of 2010). As part of the 2007 FEIS/EIR, the evaluation of the auxiliary spillway included the control structure, lining of the spillway chute and stilling basin, and the approach channel. These features were generally addressed and the potential effects, based on the level of design at the time, were analyzed. However, design refinements indicated that additional analysis and documentation were needed. The design refinements for the lining of the chute, stilling basin, construction of the control structure, installation of the six Tainter gates, and the exploratory geotechnical borings were evaluated in the 2010 Supplemental Environmental Assessment/Environmental Impact Report (SEA/EIR).

The Corps determined that additional area was needed for staging during concurrent construction of some of the features of the Folsom JFP. The Corps proposes to utilize 10 acres of Folsom State Prison land as a staging area with a concrete plant. This area was previously used as a staging area during construction of the Folsom Bridge. Activities associated with using the prison land involve: (1) installing a temporary traffic signal on Folsom Lake Crossing to ensure traffic safety; (2) widening an existing direct access road to allow for larger construction vehicles; and (3) realigning the Folsom State Prison fence around the edge of the staging area. In addition, the design of the stilling basin needs to include a drain to allow collected water in the basin to flow back into the American River. The additional analysis for the prison staging area was evaluated in the final SEA/EIR approved by CVFPB in September 2012.

These findings will address the potential environmental impacts from design refinements to the construction of the approach channel. The 2007 FEIS/EIR analyzed



that portions of the approach channel would be excavated in the wet below the water level of the reservoir. Excavation methods in the wet would require blasting and dredging using a barge mounted dredge with the spoils placed on the barges. The detailed design on the spillway approach channel, including dredging, blasting, and materials handling would be determined in the Corps pre-construction, engineering, and design phase and if needed, supplemental National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) documentation would be prepared.

The recent design refinements and construction methods to the approach channel would necessitate: (1) installation of a cutoff wall or cofferdam; (2) placement of fill material for a haul road; (3) excavation of an approximate 1,100 foot long approach channel upstream of the auxiliary spillway and control structure; (4) installation of the approach channel concrete slab and walls; (5) construction of a spur dike in the reservoir adjacent to the approach channel for hydraulic purposes; (6) stockpiling and disposal of excavated material at any of the five proposed potential disposal sites (Mormon Island Auxiliary Dam (MIAD), Dike 7, Dike 8, spur dike, and in-reservoir); (7) construction of a temporary trans-load facility near Dike 7 for barge unloading of dredge material; (8) staging of contractor materials and equipment at any of the proposed locations (spillway exaction site, Folsom Overlook, MIAD, Dike 7, and/or Folsom Prison); and (9) temporary installation of a concrete producing batch plant and/or rock crusher at and of the proposed locations (spillway exaction site, Folsom Overlook, MIAD, and/or Folsom Prison) are evaluated in this 2012 Supplemental Environmental Impact Statement/Environmental Impact Report (2012 SEIS/EIR). However, one of the proposed alternative disposal sites for excavated material is in-reservoir which is not supported by the Board or Board staff.

## **Findings**

Central Valley Flood Protection Board in its capacity as lead agency according to CEQA Guidelines Section 15091 makes the following Findings:

- Changes and alterations have been required and incorporated into the JFP, which avoid or substantially lessen the potentially significant environmental impacts as identified in the final SEIS/EIR.

## **Statement of Facts**

### *Air Quality*

Impact – Construction activities will generate criteria pollutants from equipment exhaust emissions and fugitive dust emissions. The unmitigated annual criteria pollutants would exceed the qualitative Sacramento Metropolitan Air Quality Management District (SMAQMD) Particulate Matter 10 (PM10) threshold and the quantitative SMAQMD

Nitrogen oxide (NOx) threshold as well as the General Conformity thresholds for PM10 and NOx.

Finding – For reasons stated in the FSEIS/EIR, CVFPB finds that implementation of the required SMAQMD Basic Construction Emission Control Practices, Fugitive Dust Emission and Exhaust Emission mitigation measures by the Corps will reduce estimated PM10 and NOx construction emissions to less than the General Conformity threshold (less than significant).

To comply with the qualitative SMAQMD CEQA significant thresholds for PM10 and minimize PM2.5 emissions, implementation of the Basic Construction Emission Control Practices, Fugitive Dust Emission, Exhaust Emission by the Corps and implementation of the Construction Area Particulate Matter mitigation measures by the contractor will reduce potential emissions substantially resulting in less than significant impacts with mitigation.

With implementation of the Exhaust Emission mitigation measures, maximum daily NOx emissions will be reduced but could potentially still exceed SMAQMD's CEQA threshold. Therefore, NOx mitigation fees could apply to the project. At the time of construction, project contractors will coordinate with SMAQMD to determine the level of mitigation fees that must be paid. Emissions will vary with changes in the equipment type, timing, and use as well as disposal choices and amount of rock use for the transload facility construction. Prior to construction, the contractor will coordinate the final projected emissions with SMAQMD to adjust the required mitigation based on updated project conditions. The emission level will not exceed the emissions figures listed in Tables 20-24 and will be less than significant.

Impact – Sensitive receptors within 1,000ft of the construction area could potentially be exposed to diesel particulate matter (DPM).

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that implementation of the required SMAQMD Basic Construction Emission Control Practices, Fugitive Dust Emission and Exhaust Emission mitigation measures by the Corps and implementation of the Construction Area Particulate Matter mitigation measures by the contractor will substantially reduce DPM emissions from 2lbs/hr to less than 1lb/hr reducing health risks associated with DPM to less than significant.

Impact – Construction workers and local sensitive receptors in the area may be exposed to airborne Naturally Occurring Asbestos (NOA) from construction activities from fugitive dust sources and trackout related to fugitive dust emissions or transportation of uncovered soils.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that implementation of the mitigation measures by the Corps to reduce PM10 emissions & comply with California Air Resources Board's (CARB) Asbestos Airborne Toxic Control Measures

would reduce the potential for workers or sensitive receptors to be exposed to airborne NOA resulting in less than significant impacts with mitigation.

Impact – Sensitive receptors located within 1,000ft of the construction area could be exposed to offensive odors emitted from construction activities.

Finding - For the reasons stated in the FSEIS/EIR, CVFPB finds the potential impacts to be less than significant. The SO<sub>2</sub> emissions emitted during the construction period would be less than 1 ton/yr. In addition, since ultra-low sulfur diesel fuel is now required in California, the potential for diesel related odor effects is minimal.

Impact – The Folsom JFP is expected to exceed the General Conformity *de minimis* thresholds for NOx emissions over the life of the project when mitigated.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that the Corps must 1) demonstrate conformity by showing the project will meet all ozone State Implementation Plan (SIP) control requirements and 2) meeting one of the following options:

- Demonstrate that the total direct and indirect emissions are specifically identified and accounted for in the applicable SIP.
- Demonstrate that the total direct and indirect emissions would not exceed the emissions budgets specified in the applicable SIP.
- Obtain a written commitment from the State to revise the SIP to include the emissions from the action.
- Fully offset the total direct and indirect emissions by reducing emissions of the same pollutant or precursor in the same non-attainment or maintenance area.

The option applicable to this project is to obtain a written commitment from the State Governor or the Governor's designee for SIP actions, as described in 40 CFR §93.158(a)(5)(i)(B), to revise the SIP to achieve the needed emission reductions prior to the time emissions from the Federal action would occur, such that total direct and indirect emissions from the action do not exceed the 2011 SIP emissions budgets.

An analysis of the project's estimated emissions was conducted by SMAQMD, in coordination with CARB and United States Environmental Protection Agency (USEPA). This analysis indicated that the project's emissions could be included in the 2011 SIP emissions budget. SMAQMD prepared a conformity analysis which is included with this SEIS/EIR as Appendix B. In order to comply with SMAQMD's analysis, the Corps has committed to use the following mitigation measures to reduce the total project NOx, PM10, and PM2.5 emissions:

- Off-road construction equipment complying with the Los Angeles County Metropolitan Transportation Authority (LACTMA) Green Construction Policy. Use

Tier 3 off-road equipment for first two years of construction (2013-2014) and Tier 4 off-road equipment beginning 2015.

- Marine engines complying with USEPA Tier 2 and Tier 3 engine standards. Use Tier 2 marine engines for the first two years of construction (2013-2014) and Tier 3 marine engines beginning 2015.
- Use of model year 2010 or newer haul trucks beginning in 2013.
- Electrification of concrete batch plant and rock crushing plant.
- Fugitive dust controls which include watering controls on blasting operations, unpaved roads, excavation, wet suppression on stockpiles, and speed control.
- Ensure that air pollution specifications are incorporated into all construction contracts. Those specifications will require that contractors limit annual emission to levels that do not exceed the annual estimates shown in Table 23 (for Alternative 2) or Table 28 (for Alternative 3).

### *Climate Change*

Impact – Construction activities will generate Greenhouse Gas (GHG) emissions that will contribute to the overall cumulative GHG emissions.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that GHG emissions generated from project construction activities will be less than significant with mitigation. On an individual project level, there are no long term operation emissions and emissions would not exceed the 25,000 metric tons per year reporting level for any year of construction. Since the project would still be contributing to the overall cumulative GHG emissions, the Corps will implement mitigation to increase the energy efficiency and minimize GHG emissions. In addition, by providing a decrease in risk of catastrophic flooding with associated loss of infrastructure, this project is expected to prevent extra carbon production associated with the demolition, repair, and reconstruction of flood induced infrastructure losses.

### *Water Quality*

Impact – Long term changes to the rate and amount of surface runoff in the form of hydromodification could potentially affect local drainages.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that the long term operation changes of the auxiliary spillway are currently being studied by the Corps under the Folsom Dam Flood Management Operations Study. This study is outside the scope of this assessment and will develop, evaluate, and recommend changes to the flood control operations at Folsom Dam and update the Facility's Water Control manual. Project activities will neither increase the occurrence of impervious surfaces such as

parking lots or buildings nor change the existing land uses such that hydromodification would occur. Existing drainage infrastructure (function and capacity) would not be altered from the approach channel construction. Overall the drainage patterns would not be substantially altered; therefore, this affect to local drainage would be less-than-significant.

Implementation of the Storm Water Pollution Prevention Plan (SWPPP) by the contractor will ensure that there is no exceedance of the capacity of stormwater drainage infrastructure, and therefore, potential effects to this infrastructure would be less-than-significant with mitigation.

Impact – Project activities may disturb or mobilize sediments which have the potential to affect total suspended solids, pH, turbidity, and dissolved oxygen. Re-suspension of sediments may potentially affect the concentrations of metals in the water column releasing metals that are present in lake sediments from both natural and human sources.

Impact – Project activities (construction and excavation) occurring in the dry would have potential short term impacts on water quality from ground disturbing activities. Exposed soil could potentially erode as a result of significant runoff events causing turbidity in local waterways. In addition, debris, inadvertent spills of fuels, oils or concrete mix materials from construction equipment, work areas, staging areas, or the concrete batch plant could potentially be a source of contamination into adjacent waterways.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that in order to protect water resources and maintain existing water quality conditions and beneficial uses of these waterways, the contractor will obtain three National Pollution Discharge Elimination System (NPDES) permits from the Central Valley Regional Water Quality Control Board (CVRWQCB). The following permits to be acquired are:

- Construction Storm Water Permit: NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ; NPDES No. CAS000002)
- Industrial Storm Water Permit: NPDES General Permit for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities (Order No. 97-03-DWQ; NPDES No. CAS000001)
- Limited Threat Discharge Permit: NPDES Permit for Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and other Limited Threat Wastewaters to Surface Water (Order No. R5-2008-0082; NPDES No. CAG995002)

By obtaining these NPDES permits and implementing associated SWPPP and Best Management Practices (BMPs) requirements, the water quality standards or waste

discharge requirements associated with earth moving activities in the dry would be met. Therefore, potential impacts would be less-than-significant.

Impact – Project activities occurring in the wet (dredging, construction, disposal, and blasting) could have potential short term impacts on water quality. Potential dredging of material for the haul road embankment, transload facility ramp, and spur dike have the potential to cause turbidity in Folsom Lake, affecting water quality and the potential for bioaccumulation of mercury.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds sediment testing results did not exceed the Waste Discharge Requirement General Order maintenance criteria (Appendix C). Therefore, potential impacts to groundwater via infiltration and surface water due to stormwater discharge from the placement site are not expected. Potential dredging operations would result in less-than-significant effects to water quality standards with implementation of mitigation by the contractor and compliance with the CVRWQCB certification thresholds. An analysis with sediment plume modeling to determine water quality conditions during dredging activities was prepared by Ben C. Gerwick, Inc. (Appendix E). The analysis indicated that the approach channel excavation sediment containment is possible by confining the zones where dredging and in-lake disposal of dredged materials would take place. A full range of BMPs are identified in the mitigation measures in Section 4.4.6 of the FSEIS/EIR.

Dredging may initially result in the complete removal of benthic organisms from the excavation site. Dredging could reduce local bed elevation by as much as three feet. Any change in benthic habitat as a result of dredging would only be short-term since construction of the transload facility, haul road embankment, and spur dike would require the placement rock fill material in the dredge areas. Habitat changes could cause changes in benthic organism composition within localized areas. It is unlikely that an overall change in the reservoir's benthic organisms would be detectable. The change in bathymetry resulting from dredging would be a less-than-significant, long-term impact.

Impact – Construction and removal of the transload facility, haul road embankment, and the construction of the spur dike would require materials to be placed directly into the water.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that clean fill would be imported for the construction of the transload facility and the haul road embankment. Additional processed, clean rock material that is currently stockpiled at Dike 7 would also be used for the haul road embankment. Decomposed granite for the spur dike would be excavated from the approach channel. Fill material for the spur dike would be processed and analyzed prior to installation to ensure that no pollutants, such as mercury, would be re-introduced into the reservoir. Fine content of the fill material would be reduced as much as possible to limit water turbidity during placement of material. Potential construction of the transload facility, haul road embankment, and spur dike would result in less-than-significant effects to water quality with mitigation.

Impact - Construction of the transload facility, haul road embankment and the spur dike would raise local bed elevation by as much as 60ft causing a change in the relative abundance of habitat types available at various reservoir levels affecting local benthic organisms.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds the effect on benthic organisms from the change in bathymetry resulting from the transload facility and haul road embankment would be a less-than-significant, long-term impact. The transload facility and haul road embankment would be removed upon project completion and the area would be restored to pre-project conditions. Benthic organisms from adjacent habitat would recolonize the area.

Any change in benthic habitat as a result of the spur dike would only be relevant for part of the year since the water level within the reservoir varies so widely. It is unlikely that an overall change in the reservoir's benthic organisms would be detectable.

Impact - Approximately 400,000 cubic yards (cy) of material from the approach channel would be removed during in-the-wet conditions. The in-the-wet excavation activities (dredging and blasting) have the potential to create substantial turbidity, thus affecting water temperature and dissolved oxygen concentrations. These activities also have the potential to mobilize existing contaminants, such as mercury, with potential for the bioaccumulation of mercury in the aquatic environment.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds implementation of mitigation measures by the contractor will reduce potential impacts to water quality. Silt curtains and a monitoring plan would be necessary to avoid impacting water quality and assist in mitigating bioaccumulation effects. In addition, adaptive management would be implemented during the construction period. Samples for water quality, sediment concentration, and toxicity tests would be collected to assess the potential effects of construction dredging and blasting to water quality and the aquatic environment. Potential impacts on water quality from excavation activities in-the-wet would result in less-than-significant effects with mitigation.

Impact - Dredged and excavated material that is not used for spur dike construction would be disposed at one of the proposed disposal sites, including potentially the in-reservoir disposal site.

Dredged material placed in open waters at the proposed in-reservoir disposal site and /or at the spur dike have the potential to create substantial turbidity, thus affecting water temperature and dissolved oxygen concentrations. These activities also have the potential to mobilize existing contaminants, such as mercury, with the potential for the bioaccumulation of mercury in the aquatic environment.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that two types of material would be generated from dredging activities that may require different dredging



and placement methods, the fine materials, sand, and smaller in grain size to be dredged from the lake bottom and the coarse material from the approach channel excavation. If suction dredging is used, then the only placement alternative is in Folsom Lake waters. Mechanical dredging material could either be barged to the proposed in-water placement site or transported via barge and trucked to upland placement sites.

A thorough monitoring plan would be implemented by the Corps to avoid potential significant effects upon water quality and to assist in mitigating bioaccumulation effects. These mitigation measures would reduce potential effects on water quality to a less-than-significant level.

Impact - Benthic organisms would be smothered by the discharge of dredged material at the in-reservoir disposal site.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds benthic organisms from adjacent habitat would recolonize in the disposal site. Because of the small area disturbed by the disposal of dredge material, and the rapid recovery and recolonization by benthic organisms, the disturbance to bottom habitat is considered adverse, but less-than-significant, long-term impact.

Impact – Disposal material mechanically dredged, barged, and then placed in water have the potential to create turbidity.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that a thorough monitoring plan would be implemented by the Corps to avoid potential significant effects upon water quality and to assist in mitigating bioaccumulation effects. These mitigation measures will reduce potential effects on water quality to a less-than-significant level.

Impact – Disposal material may be transported via barge and then trucked to upland placement sites creating the risk for potential turbidity and sediment releases into the reservoir.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that to reduce the risk of this source of turbidity, dredge loading and unloading areas would be contained by onshore and aquatic sedimentation barriers and any fill spilled during these activities would be contained to the loading and unloading areas. All fill material would be contained on barges such that it would not slide or fall off and enter the water column during transport or storage. Fill material on barges would be covered in the event of adverse weather so that no material is washed or blown off by precipitation or wind. With containment measures in place and implementation of required BMPs, sediment releases are not expected to produce a significant effect.

Also, the contractor would be required to design and implement a SWPPP prior to initiating construction activities, and to implement standard BMPs. Implementation of these measures would reduce potential water quality effects due to mechanical dredging to less-than-significant.

Impact - Excavated material may be disposed of on land disposal sites.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds land-based disposal sites have a low potential to affect water quality and no potential to affect the bioaccumulation of mercury onto the aquatic environment. Mitigation measures would reduce water quality effect to a less-than-significant level.

Impact – Potential disposal of material into jurisdictional water will have permanent effects of 9 acres at the spur dike, and 2.5 acres of transitional wetlands at Dike 8. Disposal of material into jurisdictional waters will have temporary effects on 2.5 acres at the TSF, 1 acre at the haul road embankment, and 85 acres of open waters into Folsom lake.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that potential temporary impacts will occur to the waters of the United States (U.S.) at the transload facility, the haul road embankment, and open water disposal areas in Folsom Lake. Up to approximately 250,000 cy of rock material would be placed for the construction of the transload facility over 2.5 acres, and approximately 400,000 cy of rock material would be placed over 1 acre for the construction of the haul road embankment. These areas would be restored to preconstruction conditions following the completion of construction in the area. Up to 220,000 cy of dredge material would be placed over 85 acres in Folsom Lake by methods discussed above.

Dredging activities would relocate sediment from the footprints of each feature and place it in a designated disposal area near Dike 7. Although dredge activities will involve placement of fill into waters of the U.S., the function and capacity of Folsom Lake will remain the same, therefore, dredge activities are considered a temporary impact.

The Folsom Reservoir is a man-made facility that is well regulated. While many fish species currently inhabit the reservoir, a majority of them are either stocked in the reservoir and/or are non-native species. In total, potential construction activities will result in permanent adverse impacts to 11.5 acres of waters of the U.S. (including wetland and non-wetland waters), temporary impacts to 88.5 acres of open water, and will create 2.5 acres of new open water habitat through the excavation of the approach channel. This will result in a permanent net loss of 9 acres of waters of the U.S., which is less than significant with mitigation.

Further analysis of the relative practicability of alternatives that avoid and minimize potential impacts to waters of the U.S., including wetland areas is included in the Corps' 404(b)(1) analysis (40 C.F.R. Part 230) to determine the Least Environmentally Damaging Practicable Alternative (Appendix D). The 404(b)(1) analyzed potential impacts to aquatic species and habitat from the placement of fill and dredge materials in the Reservoir. Alternative 3 has a higher risk of failure in a flood event. Failure of either the cutoff wall or cofferdam would have significant environmental effects, both in the

human and downstream aquatic environment. In addition, Alternative 2 will have less potential temporary impacts to waters of the U.S. than Alternative 3.

The evaluation of potential impacts and the development of appropriate mitigation measures were also used to demonstrate compliance with 33 C.F.R. Part 332, Compensatory Mitigation for Losses of Aquatic Resources (Mitigation Rule). It is assumed that all mitigation would be initiated within two years after potential impacts occur. In the event that mitigation is not initiated within this two-year period, the mitigation ratios would increase by 0.5:1 if initiated within two to five years and by 1:1 if mitigation is initiated more than five years after the potential permanent or temporary impacts occur.

Potential impacts to 29.4 acres of waters of the U.S. at the spur dike location were previously evaluated, and fill placement was permitted to expand the original Folsom Overlook under a 404 permit issued to USBR in 2007. A condition of the permit is to create 10 acres of riparian wetland at Mississippi Bar to offset potential impacts associated with the overlook construction. As a result, compensatory mitigation has already been required to offset any loss of function at the Folsom Overlook. The additional fill material for the construction of the spur dike would not result in additional acreage impacts or losses in functions that have not already been accounted for under the USBR 404 permit. USBR's mitigation is sufficient to adequately compensate for the potential impacts associated with construction of the spur dike. However, the Corps will assist USBR with their mitigation requirements to ensure that the 10 acres of riparian wetlands would be initiated by 2013.

The discharge of dredge materials will temporarily impact approximately 85 acres of waters of the U.S. The haul road embankment and transload facility are temporary project elements and will be removed after three to four years. Through the incorporation of mitigation measures which requires the restoration of temporary impact zones, potential impacts would be minimal. However, the Corps will also assist Reclamation to create an additional 2 to 5 acres of riparian wetlands at Mississippi Bar to compensate for temporal losses from these elements.

It has been determined that the ordinary high water mark of the Folsom Reservoir is at 466' elevation, which is the upper limit of the fluctuation zone for the Folsom Reservoir. However, Appendix D shows a graph showing the "Folsom Dam Reservoir Water Surface Elevations" between 1955 and 2005. This document shows the percentage of time that the Folsom Reservoir water levels are over a certain elevation. According to the table, the water level within the reservoir only reaches the 466' elevation approximately 1.1% of the time. In addition, almost 50% of the time, the reservoir is above the 429' elevation, and 100% of the time is above the 347' elevation.

The proposed fill material at Dike 8 would generally be placed between the reservoir elevation of 420-feet and 460-feet. Based on Appendix D, the fill material would be under water and suitable for fish habitat between approximately 1% and 68% of the time, with the majority of the fill material being suitable fish habitat less than 50% of the

time. In addition, the proposed fill material, which would consist of primarily gravel and cobble material, would have only minor impacts to aquatic wildlife habitat.

Therefore, a mitigation ratio of less than 1:1 for compensatory mitigation is appropriate to mitigate for losses to fish habitat function of the Folsom Reservoir. However, because the areas to be filled would provide suitable fish habitat for an average of 50% of the time, compensation for the loss of functions of the Folsom Reservoir related to fish habitat is required.

If Dike 8 is used as a disposal area then the Corps would purchase 2.5 acres of seasonal wetlands at an approved bank to compensate for the loss of fish habitat function. In the event that mitigation is not initiated within a two-year period, the mitigation ratios would increase by 0.5:1 if initiated within two to five years, and by 1:1 if mitigation is initiated more than five years after the potential impacts occur.

Although this mitigation is off-site and out-of-kind mitigation, it would compensate for losses at Folsom Reservoir, and would provide valuable fish and wildlife habitat at an alternate location. The off-site mitigation would provide fish and wildlife habitat within an area that is not heavily regulated for flood control and water supply, which would provide more benefits to fish and wildlife species than additional mitigation within the Folsom Reservoir. The proposed offsite mitigation would be sufficient to compensate for the losses of function at the Folsom Reservoir due to the proposed project.

### *Fisheries*

Impact – The project area will be temporarily closed to recreational fishing activity for safety reasons from years 2013 – 2017.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds temporary closure of the project area to recreational fishing activity is less than significant. The closure of the project area excludes less than 3% of the Folsom Lake Surface area from sport fishing up to 5 years. This area is not sufficient enough to significantly affect angler opportunities. Folsom Point boat launch will remain accessible to all recreational and boating activity. Further discussion of the potential effects on recreation from this impact is covered in the recreation section 4.7 of the FSEIS/EIR.

Impact – Project construction activities have the potential to affect fish populations and aquatic life in the following ways:

- Increased turbidity within the water column;
- Bioaccumulation of mercury;
- Blasting and acoustic (vibration and sound energy) actions;
- Introduction of contaminants, fuel and oil spills;

- Physical crushing;
- Water temperature increase; and
- Introduction of nonnative quagga or zebra mussels from marine vessels and nonnative and invasive vegetation.

## **Turbidity**

Impact – Construction activities could create turbidity which could adversely affect fish health, mortality, reproduction and habitat.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that excessive turbidity in aquatic systems can lead to indirect effects that could impact aquatic species. Increased turbidity alters aquatic light regimes that directly affect primary productivity, species distribution, behavior, foraging, reproduction, and survival of aquatic biota (Wilber and Clarke 2001). Aquatic system productivity may also be reduced. As an indirect effect, the suppression of aquatic productivity is not as apparent as observable direct effects on larger organisms. It is possible for sustained turbidity to adversely shade primary phytoplankton, zooplankton, and invertebrates which serve as food for smaller fish, and larval fish upon which game fish forage (Lloyd 1987).

Sufficient turbidity can result in direct lethal or sublethal effects on fish (Newcombe and Jensen 1996). An increase of resuspended dissolved or particulate organic carbon from the sediment may decrease dissolved oxygen (DO) concentrations. Reduction in DO availability for aquatic species causes reduced oxygen uptake by the organism. At sufficient concentrations, turbidity will clog fish and amphibian gills and cause physical abrasion to the level of sub-lethal or lethal effect. Settling of suspended sediment can coat fish and amphibian eggs, reducing or eliminating DO uptake required for development or survival. The eggs and larvae of non-salmonids are particularly sensitive. Hatching was delayed for striped bass and white perch eggs exposed to sediment concentrations of 800 and 100 mg/L (Wilbur and Clarke 2001). Prolonged exposure and increases in turbidity levels can interfere with the survival and growth of populations. A condition of prolonged exposure and turbidity increase within or directly adjacent would be expected with dredging, excavation, disposal, and material placement, and may cause localized fish mortality. However, recommended silt curtains would be expected to keep turbidity contained and cause less effect to the total number of fish within the project area. Conduct continuous monitoring on sublethal and lethal blast effects on fish. Conduct adaptive management to reduce potential effects of blasting on fish if significance thresholds for sublethal and lethal effects established by California Department of Fish & Wildlife (CDFW, formerly called the California Department of Fish & Game), United States Fish & Wildlife Service (USFWS), and the Corps are exceeded.

The fish species expected to be impacted in greatest numbers at the project site is wagasaki smelt due to prior populations found here. With active disturbance occurring during construction, substantial numbers of fish are not expected to remain in direct proximity with construction activities, and fish will be excluded where possible from the interior of silt curtains. Prolonged exposure and adverse turbidity is not expected outside of the immediate construction area if water quality CVRWQCB thresholds per the Section 401 Certification are maintained, and required BMPs and mitigations are conducted. Assuming strict contractor compliance with water quality mandates, mitigation, and BMPs, less-than-significant effects are expected for fish habitat and mortality related to turbidity.

Impact – Dredging activities will increase turbidity and sedimentation, which may negatively affect fish.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that fish avoidance of the project area is the most common result of increases in turbidity and sedimentation. Fish generally will not occupy areas unsuitable for survival unless they have no other option. Reduction of the water visibility from suspended silts in the water can reduce fish, amphibian, and aquatic reptile foraging and predator avoidance. Some fish species experience reduction in immune system health and behavioral changes including avoidance and displacement (Lloyd 1987; Birtwell 1999). Turbidity effects vary considerably between fish species; many fish species avoid turbid water for foraging while some species are able to increase the effectiveness of foraging up to a certain sediment concentration (Wilbur and Clarke 2001). Substantial increases in turbidity would negatively affect foraging for most species in Folsom Reservoir. Centrarchids, such as smallmouth and largemouth bass and most larval fish, are more impacted by small increases in turbidity than salmonid species (Berry et al 2003).

Under most dredging scenarios, fish and other motile aquatic organisms encounter localized suspended sediment plumes for exposures of minutes to hours, unless avoidance or attraction to the plume occurs. Intermittent localized plumes could be expected for the approach channel project, but it is difficult to assess fish behavior prior to such exposure. Construction actions would cause localized degradation of fish habitat within the project site due to disturbance and turbidity increases, and fish may avoid this area or incur physical degradation or mortality. High turbidity, resulting from construction-related activities, would likely preclude some species from occupying habitat utilized for successful completion of one or more life stages, but this would be limited to less than 50 acres at the project site and not affect Folsom Reservoir outside the project footprint.

There are no known preferred foraging habitat or breeding sites that would be affected by increased and localized water turbidity in the project area. The affected area is not known to be integral to life stages of game fish within Folsom Reservoir. Potential adverse effects upon Reservoir habitat outside the construction footprint are not expected due to containment of silts. Turbidity increases are expected only from the summer of 2013 to the fall of 2017. Benthic community replacement is expected to

occur rapidly. Turbidity effects on fish habitat would be potentially significant; however, with the implementation of mitigation measures, BMPs and compliance with CVRWQCB thresholds, the project effect is expected to be less-than significant.

Impact – Construction activities have the potential to negatively influence fish due to the concentration level of sediments and duration of turbidity.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds exact levels of turbidity that cause effect are difficult to determine due to the large number of environmental factors involved in measurement efforts (Berry 2003) and the behaviors and physical sensitivities of specific fish species. Effects of suspended sediment upon fish are not only a function of concentration, but are also related to the duration of turbid conditions (Clarke 2001; Wilbur and Clarke 2001). Silt concentration alone is poorly correlated with salmonid fish responses to suspended sediments; dosage (amount over time) is more strongly associated with fish response (Newcombe and MacDonald 1991). In a conservative range of measured effects, sublethal behavioral effects to juvenile and adult salmonids was caused by a concentration of 100 mg/L over a period of less than one day; under a longer duration with similar concentration, mortality resulted in ten days (Wilbur and Clarke 2001). Sustained low sediment levels over a long duration may produce effects for some species, while others are more affected by high concentrations over a short time period.

Projects generating persistent, high suspended-sediment concentrations represent the most problematic situation, as it is difficult to assess the effects of exposures at low concentrations over longer time periods, particularly with aquatic construction scenarios that are undefined at this time. A salient resolution includes preventative measures and turbidity controls to reduce effects to a level where they are not detrimental to the aquatic environment. It is expected that persistent turbidity directly at or adjacent to in-water material placement, disposal, placement, dredging, and excavation will be high and will exceed levels for fish health and habitat protection over the duration in-water construction in an area up to approximately 50 acres. However, CVRWQCB water quality thresholds within Section 401 certifications are established to maintain aquatic organism protection. Adherence to CVRWQCB thresholds and implementation of mitigation measures by the contractor and State water quality thresholds, would be expected to maintain sufficiently low dosages of silt within the reservoir proper, and not adversely affect aquatic organisms. As a result, the issue of Folsom Reservoir sustained silt concentration at low dosages is expected to be less-than-significant with mitigation.

Impact – Persistent sedimentation and turbidity from in-water placement of fill, disposal, dredging and excavation will be high and exceed levels safe for fish health and habitat protection over the duration of in-water construction.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds projects generating persistent, high suspended-sediment concentrations, represent the most problematic situation, as it is difficult to assess the effects of exposures at low concentrations over



longer time periods, particularly with aquatic construction scenarios that are undefined at this time. A salient resolution includes preventative measures and turbidity controls to reduce effects to a level where they are not detrimental to the aquatic environment. CVRWQCB water quality thresholds within Section 401 certifications are established to maintain aquatic organism protection. Adherence to CVRWQCB thresholds and implementation of mitigation measures and State water quality thresholds, would be expected to maintain sufficiently low dosages of silt within the reservoir proper and not adversely affect aquatic organisms. As a result, the issue of Folsom Reservoir sustained silt concentration at low dosages is expected to be less-than-significant with mitigation.

There are no known preferred foraging habitat or breeding sites that would be affected by increased and localized water turbidity in the project area. The affected area is not known to be integral to life stages of Folsom Reservoir game fish. Potential adverse effects upon Reservoir habitat outside the construction footprint are not expected, due to containment of silts. Turbidity increases are expected only from the summer of 2013 to the fall of 2017. Benthic community replacement is expected to occur rapidly. Turbidity effects on fish habitat would have potential to be significant; however, with the implementation of mitigation measures, BMPs and compliance with CVRWQCB thresholds, the project effect is expected to be less-than-significant.

Impact – Potential impacts to water quality and fish or aquatic habitat, due to the increase sedimentation and turbidity.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that engineering controls, avoidance mitigation, and BMPs conducted for the project are effective at avoiding potential turbidity effects on aquatic species. Resuspension or introduction of silt into the water column could be contained to the project area with the recommended deployment of silt curtains. Silt curtains, also called turbidity curtains, have been used to effectively manage project turbidity (USEPA 2004; USEPA 2005). With appropriate use of silt curtains, turbidity levels outside silt curtains are not expected to cause adverse effects to native and game fish populations and habitat outside the project area. Fish entrapped within silt curtains, may experience sublethal or lethal effects. Compared to use in rivers and ocean channels, a higher degree of efficiency is expected with the silt curtains in the relatively low Folsom Reservoir water currents.

Silt curtains are vertical flexible structures of a synthetic material that extend downward from the water surface to a specified depth, usually one to two feet above the lakebed, to effectively contain suspended silts and allow them to settle out of the water in a controlled area (Corps 2005). The silt curtain does not indefinitely contain turbid water but controls dispersion usually by diverting flow to an elevated space under the curtain to minimize turbidity in the water column outside the silt curtain. It is recommended that all construction activities that risk resuspension or introduction of sediments, would be enclosed in silt curtains including excavation, blasting, dredging, and in-water disposal and fill placement, for the approach channel, transload facility, and spur dike. Silt curtains could also be employed in the construction and removal of the transload facility

and during hydraulic silt material disposal directly to the lake bottom. It is expected that with State water quality threshold compliance, potential impacts to water quality and fish or other aquatic habitats, due to increased sedimentation and turbidity, would be less-than-significant.

Impact – Incidental silt release at the bottom of the silt curtain could affect fish adjacent to the silt curtains.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds specific design features are recommended to address Folsom Reservoir site specific needs according to the Corps (2005) guidelines, and to comply with water quality mandates. Adjustments would be conducted to maintain effectiveness during water level fluctuations, construction equipment changes, and for aquatic protection needs. Silt release at the curtain bottom would cause a plume or localized turbidity that could potentially affect fish adjacent to the curtains. Reduced DO and visibility could potentially affect individual fish attracted to the plume or adjacent to the lower sections of the silt curtain. Rainbow trout can be alternately attracted or exhibit avoidance behavior around turbid plumes depending upon the availability of associated food sources (Berry 2003). It is expected that salmon would move freely from the area to avoid localized turbidity (Lloyd 1987). Incidental fish that remain adjacent to the bottom plume area, would be at risk for sublethal effects, but this is not expected to be a substantial number of organisms. There are no known preferred foraging habitat or breeding sites in the affected area. It is expected that potential effects associated with incidental silt release at the bottom of the silt curtain would produce less-than-significant effects on Folsom Reservoir fish populations and sport fishing.

Impact – Fish could become entrained or entrapped within the silt curtains.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds open space at the silt curtain bottom, which allows water and sediment flow, and gateways at the top of the silt curtain would provide opportunity for incidental fish passage into interior construction zones where they could incur mortality. It is recommended that silt curtains be securely adjusted to prevent fish passage and entrainment. If lake levels remain high during in-the-wet excavation, water flow over the partially excavated rock plug could entrap fish. Also, frequent lowering and shifting of the silt curtains to provide passage for vessels and equipment could allow silt dispersion into the water column and passage of fish with subsequent entrainment. Passage by small numbers of fish under the curtain or around the structure during installation or adjustments would be expected to occur, predominantly by wakasagi smelt. Fish that move into direct contact with excavation activity, would be at risk of potential turbidity impacts that could cause injury or mortality. Salmonids are known to seek deeper, colder water located at the front of Folsom Dam, adjacent to the project area in summer months. There is risk for salmon entrainment with increasing number and size of silt curtains utilized, but salmon are also likely to avoid the areas due to turbidity and noise (Lloyd 1987). It is unlikely that an overall change in the reservoir's fish population or sport fishing would result. Potential effects resulting from entrapment of fish within the silt curtain, would be less-than-significant.

Impact – Folsom Reservoir aquatic populations in can be negatively affected by increased turbidity.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds shallow water breeding areas for fish are not found within the project vicinity. With adherence to State water turbidity thresholds, siltation of breeding habitat in other areas of the reservoir is not expected. Silt material escaping the silt curtain is expected to drop out of the water column before transport occurs within the lake proper or to downstream waters below Folsom Dam. As a result of turbidity containment and the low underwater currents, no silt within the Reservoir proper is expected to affect native fish concentrations at the upstream junction of the north and south forks of the American River. No special status species are expected to be affected since hardhead, the only special status species found within Folsom Reservoir, would not utilize the project area for breeding or foraging. Fish within the project area could be expected to incur higher levels turbidity-caused effects, but seasonal movement, species, and numbers of fish are unknown and quantitative prediction cannot be made at this time. With the implementation of water quality mitigation measures discussed in Section 4.4.6 of the FSEIS/EIR, potential impacts from turbidity would be expected to be less-than-significant with mitigation.

Impact – Transportation of fill across the reservoir on barges creates risk for potential sediment releases into the reservoir.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that to reduce the risk of this source of turbidity, dredge loading and unloading areas would be contained by onshore and aquatic sedimentation barriers, and any fill spilled during these activities would be contained to the loading and unloading areas. All fill material would be contained on barges, such that it would not slide or fall off and enter the water column during transport or storage. Fill material on barges would be covered in the event of adverse weather, so that no material is washed or blown off by precipitation or wind. With containment measures in place, and implementation of required BMPs, sediment releases are not expected to produce a significant effect.

Impact – Water temperature increases, due to turbid water is possible inside and outside the silt curtains, which may or may not negatively affect fish in the immediate area.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds sufficient temperature rises are not expected to cause effects to the reservoir, due to the relatively small volume of water affected. Potential impacts to aquatic species associated with water temperature increase, would be less-than-significant.

Impact – Construction activities have the potential to produce substantial turbidity and sedimentation that may violate water quality thresholds that address aquatic protection.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds construction activities would be permitted under State and federal water quality regulations, and compliance with mandates for water quality would be conducted to avoid potential effects on aquatic organisms (see Water Resources and Quality Section 4.5). Due to the large environmental and project variability, most regulatory agencies have not established thresholds for fish protection, but instead have instituted turbidity thresholds to address aquatic protection. Project turbidity compliance would be achieved by constant monitoring of turbidity levels within the project area to standards prescribed by the SWRCB. The SWRCB values for freshwater sediments were based on the Sediment Quality Guidelines (SQG) developed by MacDonald, et al (2000), in the document entitled, “Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems”. This document was an effort to develop standardized limits using various published SQGs. These standards have attempted to prescribe thresholds with a magnitude lower than concentrations and durations that would begin to effect fish health.

Prior water certification standards provided by the CVRWQCB for construction of the Folsom Overlook, prescribed a surface water concentration not to exceed 0.1 ml/l in surface waters measured 300 feet downstream of the project site; this concentration is well below documented effects upon fish. Fish begin to show stress at approximately 10 Nephelometric Turbidity Units (NTUs) over the duration of days (Wilbur and Clarke 2001). SWRCB water quality thresholds are set below this amount with the exception of in-water working periods, which could allow a turbidity increase of approximately 15 NTUs over background turbidity. Effective use of silt curtains would be a critical action to prevent turbidity increases that could affect summer habitat of salmon in front of Folsom Dam. Salmon utilize the colder, deeper water area directly in front of Folsom Dam for summer habitat. During summer, cold water does not circulate to the surface and aquatic organisms can deplete available oxygen in lower lake levels. Leakage from silt curtains or flow of silt into this oxygen deprived stratified layer could lead to further oxygen reduction for the Reservoir salmon, compromising habitat and fish health. Disposal of excavation material at the overlook site presents the greatest risk to affecting salmon summer habitat. Additional turbidity monitoring from June through October is recommended for summer and fall habitat, particularly at depths from 35 feet to the lake bottom, to ensure that turbidity levels do not exceed CVRWQCB thresholds. If monitoring indicates that thresholds are exceeded, contributing construction activities should be discontinued until sediment controls are achieved and the turbidity level is resolved to threshold. Adaptive change in construction activities and methods to comply with state certification thresholds would ensure that potential significant effects to aquatic organisms do not occur.

As mentioned, CVRWQCB compliance turbidity monitoring would commence throughout the project’s water-based construction. If turbidity thresholds are reached, construction activity would be adjusted to produce conditions that meet state and federal water quality mandates. Though adverse alteration of fisheries habitat is expected within the project footprint during in-the-wet construction, suspended sediments resulting from project activities are a temporary condition, and are not

expected to cause long term effects after the project. Turbidity effects as mitigated would not substantially change the diversity or numbers of any aquatic community or species, or interfere with the survival, growth, or reproduction, of affected populations in Folsom Reservoir. Use of mitigation, BMPs, and turbidity monitoring, as discussed in Section 4.4.6 of the FSEIS/EIR, is expected to reduce the potential turbidity effects upon aquatic populations in Folsom Reservoir to less-than-significant.

## **Bioaccumulation**

**Impact** – Construction activities have the potential to increase methylmercury concentrations in aquatic organisms and Folsom Reservoir fish populations.

**Finding** – For the reasons stated in the FSEIS/EIR, CVFPB finds that bioaccumulation in game fish can create potential indirect effects on fisheries and human health. Prediction of mercury accumulation cannot be quantified due to project variables and unknown quantities of exposure associated with consumption by project area organisms. Sediment containing mercury would be exposed and suspended for a potentially increased production of methylmercury during excavation of the approach channel. Potential for methylmercury bioaccumulation would be increased with increases in excavation and dredging activity. Silt material placed back into the lake body for disposal presents a greater risk for bioaccumulation because sediment movement would increase availability of mercury and potential for methylmercury accumulation. Dredging and construction of the spur dike and transload facility could also increase mercury exposure and potential for methylmercury uptake. Turbidity reduction is the most effective method of reducing the risk of bioaccumulation. As discussed in Section 4.4 of the FSEIS/EIR, the risk of bioaccumulation can be assessed by monitoring sentinel species for increased elevations of mercury. Increases found in methylmercury of sentinel species would be reported to USFWS and regulatory agencies.

Use of terrestrial disposal sites, rather than aquatic sites, for excavated and dredged material would reduce risk for methylmercury to be incorporated into fish of game size, and would not cause significant increases of methylmercury in the Folsom Reservoir fish population. With appropriate turbidity control and mitigation measures, it is reasonable to expect that bioaccumulation of methylmercury will not be significant for the following reasons:

- Prior and recent sediment testing of approach channel sediments showed mercury concentrations below State thresholds (Corps 2011).
- Period of sediment suspension is temporary and projected to last approximately 500 days.

- Sentinel species and small fish species have limited life spans, reducing risk of fish uptake and the biomagnification factor. The major forage fish in the area, wakasagi smelt, have a one year life span.
- Resuspended sediments would be contained to a localized area. Uptake by zooplankton and algae would be concentrated within silt curtain enclosures.
- Higher trophic fish are expected to avoid construction areas for feeding.
- Turbidity and mercury water content would be monitored to comply with CVRWQCB certification thresholds.

Therefore, the potential of bioaccumulation of methylmercury to increase in aquatic organisms and sport fish is expected to be less-than-significant with mitigation.

### **Blasting and acoustic actions**

Impact – Underwater sound from blasting and construction equipment has the potential to adversely affect fish inhabiting Folsom Lake.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that underwater noise could be expected to occur for up to 500 days. General noise characteristics relative to the project are addressed in Section 4.9 (Noise) of the FSEIS/EIR. With the exception of blasting, acoustic noise would result primarily from marine engines, dredge equipment scraping sediments, airlift use, and rock placement. The National Marine Fisheries Service (NMFS) and USFWS have set interim criteria for injury to fish from blasting. The current thresholds for injury are 206 decibels (dB) peak, 187 dB cumulative sound exposure level (SEL) for fish greater than 2 grams and 183 dB cumulative SEL for fish less than 2 grams. The current threshold for disturbance is 150 dB RMS (Root-mean-square). Small recreational boats with large outboard motors can reach up to 175 dB peak; these vessels can be found in Folsom Reservoir and would be excluded from the project area. Marine barges, used for material transport and drilling, are expected to remain below 175 dB peak.

Extremely loud sound levels can have negative effects on fish that include permanent or temporary deafness, tissue damage and mortality. Gas oscillations induced by high sound pressure levels can burst small capillaries or cause damage to gas containing organs (Caltrans 2009). Fish response to sound can be varied, ranging from classic fright response to packing, polarizing, increasing swimming speed, diving or avoidance (Olsen 1969). Varying noise effects upon different species are difficult to predict. Fish can either ignore repetitive construction noise, or avoid noise sources, resulting in temporary displacement. Adverse effects are usually manifested by a reduction in the ability to evade predation (stunning or reduced swimming ability), a change in behavior that leads to increased exposure to predation, or an inability to detect predators or prey effectively (temporary or permanent deafness) (Olsen 1969).

Construction equipment is expected to generate up to 120 dB on an intermittent basis. Construction activities that require the placement of riprap in the water for the spur dike, transload facility and cofferdam would generate noise only underwater in the immediate vicinity of where the activities are taking place. Drilling generates noise from both the drill bit striking the rock near the collar of the holes, as well as from mechanical equipment and compressors used on the drills. Drilling from platforms will not occur in less than 35 feet of water, and thus is not expected to generate measurable noise in air. It is likely that some fish would be disturbed during drilling, but underwater sound levels are not expected to result in injury or death to fish. The project is not expected to generate acoustic energy that would exceed NMFS thresholds for injury, but noise, particularly dredging and excavation acoustics, may cause intermittent disturbance to fish and cause them to avoid the project area over the life of the project.

Fish species within Folsom reservoir are considered to be sound generalists and would be affected to a lesser degree by general construction noise than sound specialists. Optional silt curtains and optional bubble curtain options would serve to dampen amplitudes of acoustic wave energy generated by construction equipment. The Folsom Reservoir fish population is not expected to be significantly affected by temporary displacement from the project site as it does not contain a concentrated food source, species of concern or nesting habitat. Construction activity, with the exception of blasting, is not expected to exceed NMFS Sound Exposure Level (SEL) standards or adversely affect fish populations within Folsom Reservoir. Therefore, potential effects on aquatic organisms due to an increase in acoustic noise would be less-than-significant.

Impact – The use of explosives can cause damage or mortality to aquatic organisms within the project area.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that minimization measures to reduce potential blasting effects to aquatic species have been recommended and some of these have been incorporated into the project, including decking, stemming, and time delay of blast charges. Maximum water pressures achieved by the blast shots will be monitored with a transducer recording system (Corps 2004). Pre-production test shots will be conducted to ensure blast pressure thresholds of 5.8 psi at 2,500 feet and 19 psi at the bulkhead gates can be achieved for production blasts. Blast plan review and monitoring of fish kill numbers, species and size would be conducted with the coordination of CDFW. Surface collection of floating fish would be executed to gain an index to blast-caused mortality and to prevent scavenging by birds in the construction area. Recognition should be made, however, that floating fish recovered after the blast would provide only a representation of mortality, because not all fish species float to the surface after incurring sublethal and lethal effects. In addition, counts of floating fish can provide an underestimate of mortality when physical collection fails in retrieving all carcasses. Carcasses can evade detection during collection efforts and can be difficult to access under different conditions. Sublethal effects are not visually evident, do not normally float to the surface, and usually remain

undetected resulting in a miscount of actual mortality numbers. Thresholds for fish mortality were not provided by regulatory agencies, but reinvestment into the sport fishery has been requested by CDFW (J. Thomas 2011). At the request of CDFW, stocking would be conducted by the Corps for 6,000 triploid rainbow trout to mitigate temporary effects of angler displacement from the project and potential reduction of numbers of sport fish.

The affecting blast radius of approximately 1,000 feet and the restricted fishing zone of 3,000 feet, constitute less than 3 percent of the reservoir surface. Due to the relatively small size of the blast affected area, and low fisheries habitat value within the blast zone, it is not expected that sufficient numbers of fish will be effected by mitigated blasting to result in a substantial change of diversity or numbers of aquatic species in Folsom Reservoir. Alteration of habitat and the reduction of angler opportunities in Folsom Reservoir due to blasting will be temporary and is not considered significant. No significant decrease in species diversity, habitat or recreational fishing opportunity is expected within Folsom Reservoir as a result of blasting. With implementation of BMPs and mitigation measures, the effect on fisheries due to blasting is expected to be less-than-significant.

### **Introduction of contaminants, fuel and oil spills**

Impact – Construction activities have a higher risk for chemical contamination of aquatic life, due to the increased period of in-the- wet or underwater excavation, blasting and dredging.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that the use of marine equipment and in-water construction activity present risks of oil and fuel spills. Contaminants could include occasional or remote small spills of oil and fuel from over-water fueling and operation of boats and gas-powered equipment on-water. More remote risks of leakage from drill hoses during drilling operations and contamination from materials present in blasting explosives are possible. Potential substantial impacts to water quality and aquatic life could be sustained with a large contaminant spill. Lack of appropriate containment material for a large oil or fuel spill could result in unacceptable damage and mortality on fish. An uncontained contaminant spill could cause direct mortality to fish, particularly in larval stages. Contamination of shallow water breeding areas could affect years of reproduction of bass and other nesting species and reduce numbers of game fish in Folsom Reservoir. With the improbable occurrence of an uncontained large spill, potential indirect effects could occur that would decrease phytoplankton numbers with a subsequent reduction both in fish and forage biomass.

Silt curtains around aquatic construction activities could serve as secondary containment devices; however, marine vessels and fueling activities would be most at risk for contributing oil and fuel spills and would not be contained by silt curtains. Increased use of marine equipment associated with the option to dispose excavation



and dredging material into the lake will increase the risk of chemical, fuel and oil contamination. Up to twenty marine vessels may be utilized during the construction project, and weekly or daily fuel and gas line inspections would be required for all vessels as well as hydraulics for cranes and other dredging equipment. Since fueling of marine vessels presents the most risk for small fuel and oil spills, fueling operations must be conducted over absorbent surfaces or within contained booms with spill materials on hand. Compliance point monitoring for contaminant of concern for Folsom Reservoir, identified under the CVRWQCB Basin Plan (CVRWQCB 1998) would be required as a condition of the Section 401 water Quality Certification. If elevated contaminant levels or low oxygen levels are found at these points during project activities, mechanical controls such as using a closed bucket, environmentally safer dredge, replacing drill hoses, or using environmentally safer fueling methods may be necessary to reduce effects to aquatic life. Close adherence to outlined BMPs (Section 4.5.6) of the FSEIS/EIR and required spill containment equipment is expected to reduce risk of contaminant introduction into Folsom Reservoir. Efficient containment measures and materials would be required for all construction activities. Adherence to Section 401 Water Quality Certification requirements and BMPs would reduce risk of contamination to an acceptable risk and less-than-significant effects with mitigation are expected to fish populations, habitat or recreational fishing opportunities.

## **Physical crushing**

**Impact** –Incidental physical crushing of fish could result from entrapment of fish and placement of fill material, dredging, air lift operation, and underwater blasting.

**Finding** – For the reasons stated in the FSEIS/EIR, CVFPB finds that the potential effects upon fish populations and angler opportunities from crushing can be minimized to less than significant with mitigation. Most fish could be excluded from crushing actions due to the presence of an optional silt curtain, however, placement of rock into the lake for the spur dike and transload facility could crush small numbers of fish that enter silt curtains and become entrained or entrapped. Operation of the air lift to remove dredge and blast debris could vacuum up fish within or without a silt curtain enclosure.

In addition, hydraulic dredging could crush fish. Hydraulic dredging would also cause lethal effects to fish and other aquatic organisms by entrainment into the suction dredging pipes. Protective actions are recommended for hydraulic equipment to prevent fish intake into hydraulic dredging pipes, but the cutter head attachment precludes deterrence into the hydraulic pipe. Numbers and species of entrained fish can be monitored by inserting a screen or 3/8 inch diameter punch-holed steel plate over an outlet tube (Corps 2012). Larval fish, in particular are susceptible to entrainment by hydraulic dredging and these fish would be expected to incur higher mortality than sub-adult or adult fish.

In the event that substantial numbers of fish are trapped between the control structure and the rock plug due to high lake levels, fish rescue would be conducted to avoid injury or mortality. Fish entrainment by construction vessel propwash would be minimized by limiting boat speeds.

### **Introduction of Nonnative and invasive species**

Impact – Due to the use of aquatic construction equipment and boats, there is the potential for nonnative quagga or zebra mussels and nonnative and invasive vegetation to be introduced into Folsom Lake Reservoir.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds aquatic construction equipment and boats are to be decontaminated of invasive species prior to placement in Folsom Lake per approval by CDFW and invasive establishment is expected to be less than significant.

### ***Aesthetic & Visual Resources***

Impact – Potential direct effects from construction activities would include the temporary effect of ongoing construction activities due to equipment, boats, and haul trucks operating in the area, the permanent effect of the change in shoreline due to construction of the approach channel and spur dike, and the potentially permanent disposal of material in the proposed disposal areas.

Construction of the cutoff wall will create a temporary effect to aesthetics and visual resources due to the amount of equipment necessary for construction of the wall.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds the equipment necessary for construction of the cutoff wall would include large drills, trucks, and the operation of a concrete batch plant and rock crusher. The drills and trucks would be present on the rock plug throughout the duration of construction of the cutoff wall, and would be visible to recreationists on the lake, as well as drivers and bikers using Folsom Lake Crossing. However, while the use of this equipment would be a visual effect during construction, it would also be consistent with the existing condition at the Folsom Overlook, rock plug, and auxiliary spillway site, as these areas are currently in use for construction of the control structure. As a result of both the temporary nature of this feature, and the ongoing activity at the project area, construction of the cutoff wall will be considered a less-than-significant effect on aesthetics and visual resources.

Impact – Excavation of the approach channel will have temporary effects associated with operation of various types of construction equipment.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds much of the excavation activities would be shielded from the view of sensitive receptors on Folsom Lake Crossing and Folsom Lake by the rock plug and the control structure. However,

cranes and trucks would be visible on the Folsom Overlook and rock plug during in-the-dry excavation. Additionally, barges would be operating on the lake during in-the-wet excavation, and the excavation area will be visually exposed to boaters on the lake. The operation of construction equipment, while a temporary effect, is considered less-than-significant as it is consistent with existing conditions in the project area during ongoing construction of the control structure.

Impact – Construction of the spur dike will permanently modify the shoreline.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds however, the existing condition of the shoreline is of a low visual quality due to the unvegetated, riprapped slopes of the Folsom Overlook area. Construction of the spur dike will consist of an expansion of the Overlook area, and would remain visually consistent with the Overlook. Like the Overlook, the spur dike would likely remain unvegetated with riprapped banks. As a result, the construction of the spur dike will not contrast dramatically with the existing views, and will be considered a less-than-significant impact.

Impact – Construction of the approach channel will permanently modify the existing shoreline.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds the majority of the approach channel will be submerged after completion, except at low lake levels. Yearly fluctuations in reservoir levels will vary this visual parameter. During years of high precipitation, reservoir levels would be retained at a high level throughout the summer until release in the fall season in order to provide capacity for incoming winter flows. However, during years of low precipitation, the low reservoir levels would result in an exposed approach channel, which would be of extremely low visual quality. While the approach channel is considered a permanent change to the shoreline, and thus a potentially adverse effect, the southern shore of Folsom Lake is of a low visual quality due to the presence of Folsom Dam. As a result, the permanent change of the approach channel would be considered consistent with the overall aesthetic quality of the southern shore of Folsom Lake, and would not substantially degrade the existing visual character or quality of the site. Therefore, potential effects to aesthetics from the construction of the approach channel would be considered less-than-significant.

Impact – Use of the haul road will have potential temporary visual impacts to recreationists on the lake, the residents on the hills above Dike 7, and in some cases, by drivers on East Natoma Street.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds the haul route is located along the shoreline from the Folsom Overlook to the Mormon Island Auxiliary Dam (MIAD) disposal area, and is part of the project's existing condition. Use of the haul route will be visible by recreationists on the lake, the residents on the hills above Dike 7, and in some rare cases, by drivers on East Natoma Street. Views of the trucks on the haul route are considered a temporary effect throughout the duration of project construction, as they will be occurring intermittently throughout construction. Potential

aesthetic effects due use of the haul route would remain consistent with the analysis from the 2007 FSEIS/EIR.

Impact – Disposal activities at Dike 7 will be visible by residents at Dike 7.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds Dike 7 is located halfway between Folsom Overlook and the MIAD disposal area, and has been actively used as a disposal site throughout the multi-phase JFP construction. As a result, aesthetically, the use of Dike 7 as a disposal area is consistent with existing conditions at the start of the approach channel construction effort. Potential aesthetic effects due to use of the Dike 7 disposal area would be consistent with the analysis from the 2007 FSEIS/EIR.

Impact – Construction of the transload facility will temporarily modify the shoreline and be visible to residents above Dike 7 and recreationists at Folsom Point and on the Lake.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that the temporary transload facility would be constructed adjacent to Dike 7, and would be considered an effect to the views for the residents above Dike 7 and for recreationists at Folsom Point and on the lake. Up to 200,000 cy of fill would be deposited in the reservoir to create a ramp, which would modify the shoreline. However, as the southern shoreline of Folsom Lake is highly disturbed and modified due to the flood control facilities associated with Folsom Dam and Dike 7, this effect would not be considered a substantial degradation to the shoreline. Since the transload facility would be removed at the conclusion of the project, this effect would be considered less-than-significant.

Activities at the transload facility would include the loading and unloading of material using barges, cranes, and trucks for up to nine hours per day during construction. Barges in transit to and from the transload facility would be visible to the residents above Dike 7 and to recreationists at Folsom Point and on the lakebed. However, since this is a temporary effect that would be present intermittently during in-the-wet excavation, this effect would not have a substantial adverse effect on the scenic vistas associated with Folsom Lake and is considered less-than-significant.

Impact – Temporary disposal activities at MIAD and Dike 8 would be visible to residents and disposal would permanently alter the landscape after completion of construction.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that the deposited materials would contrast with the existing landscape during temporary disposal activities, and would permanently alter the natural landscape after the completion of construction. There is the potential that some of this soil would be used by USBR for construction of a large landside berm at the auxiliary dam. However, it is assumed that not all of the material at the disposal sites would be reused. As a result, the excess material would be recontoured and landscaped to maintain visual consistency with the surrounding hills. The contractor would revegetate the disposal areas with native grasses to provide ground cover, erosion control, and to allow it to regain some

aesthetic consistency with the surrounding areas. Since the view from these neighborhoods is of the hills, disposal of material at MIAD would not substantially alter the residents' long-term view shed. With implementation of the mitigation discussed below, disposal at MIAD and Dike 8 would be considered to have a less-than-significant effect on aesthetics.

### *Recreation*

**Impact** – During construction of the project (2013-2017), a recreation safety boundary will be established in the waters around the spur dike, approach channel, and transload facility. Potential direct effects include limiting recreational activities to outside the boundary. Potential indirect effects will occur if those recreational activities are relocated to other local recreation areas increasing the usage and wear and tear on the facilities. In addition, upon completion of the project, the waters in front of the approach channel will remain blocked off from public use for security reasons.

**Finding** – For the reasons stated in the FSEIS/EIR, CVFPB finds that during construction, the waters around the spur dike, approach channel, and transload facility would be excluded from public access due to safety concerns. The contractor would be required to construct a physical barrier 3,000 feet from the blast zone which would be maintained throughout the construction period. Buoys would be installed from approximately Dike 7 to the Overlook to rope off restrict waters. The safety exclusion boundary would permit access from the Folsom Point boat access. Because the approach to Folsom Point launch site would be reduced during low water levels, a safety route and boat hazards will be identified by floating markers as needed. Recreational boats may need to reduce speeds upon launch point entry when water levels drop. The Bureau normally closes Folsom Point launch to the public when the lake level drops to 405 feet (General Plan 2007). The safety exclusion boundary is shown on Figure 17. Boat patrols would be required before, during and immediately after blasts. Construction would begin in 2013 and continue through 2017. Upon completion of the project the waters in front of the approach channel would remain blocked off from public use for security reasons.

The surface area of Folsom Lake at gross pool is 11,450 acres (USBR 2009). The safety exclusion boundary from Dike 7 to Folsom Overlook would be approximately 295 acres which is less than 3% of Folsom Lake's surface area. Recreation access and reservoir levels would not be affected by the recreation safety boundary. The safety boundary is not expected to change as reservoir levels change. Thus, the exclusion of this area from public access is not a substantial reduction in the water based recreational opportunities available at the Folsom Lake State Recreation Area (FLSRA). During construction there would be no potential impacts to trails or camping facilities. As a result, potential long-term effects to recreational activities would be considered less-than-significant.

All existing recreational areas near the construction area, including Folsom Point, would remain open during construction. The area limited by construction area is minimal, so it

is assumed that the majority of the recreation activity would not change. As a result, potential indirect effects associated with the construction activities of the project would be less-than-significant. In addition, potential visitors use declines when lake levels fall between 435 feet and 400 feet in elevation (General Plan 2007) due to limited access. Beal's Point becomes impacted when lake levels reach 430 feet, Granite Bay becomes out of service at 425 feet, and boats must be removed from the slips at the Marina at 412 feet, and Folsom Point closes when water levels reach 405 feet (GP 2007). Therefore as lake levels decline, fewer water based recreationalist would be affected by the safety boundary. During construction there would be no potential impacts to trails or camping facilities. As a result, potential long-term effects to recreational activities would be considered less than significant.

Impact – Use of Folsom Point for the initial launch site to begin construction of the transload facility will have potential temporary, short term impacts to recreation.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that these potential short term, temporary effects will be less than significant. Construction will begin in May 2013. The use of Folsom point will require approximately 6-8 hours. The Corps will coordinate with USBR and/or California Department of Parks and Recreation (State Parks) for use of Folsom Point and will minimize use of Folsom Point during peak visitor hours.

Impact – The excavation of the approach channel and rock plug will require use of explosives, causing the temporary closure of Folsom Lake Crossing and the bike trail associated with the Folsom Lake Crossing Bridge.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that blasting events could occur every day up to twice per day over 44 months from February 2014 to August 2017 with the potential for up to 400 blasts in-the-wet and up to 200 blasts in-the-dry. Blasting events have the potential to last up to 2 hours and would be scheduled from 1:30 p.m. to 2:30 p.m. with additional provisions for a second blast from 10:00 a.m. to 11:00 a.m. This 2 hour period would allow for 30 minutes to close Folsom Lake Crossing, 1 hour to conduct blasting, and 30 minutes to reopen the roadway. The blasting would not be permitted to interfere with peak traffic flow, would occur at consistent time(s), and would require an encroachment permit from the City of Folsom. The contractor would coordinate with the City of Folsom and provide adequate notification to the public, including signage, prior to beginning blasting. Since the closures would be temporary in nature (potential to last up to 2 hours), consistently scheduled, and proper notification would occur, any potential short-term effects would be considered less-than-significant.

Impact – The proposed project would draw a construction workforce creating the potential need for worker vehicle parking areas.

Finding - For the reasons stated in the FSEIS/EIR, CVFPB finds that parking will be available at the staging areas and would not affect the availability of parking spaces for

recreation. With available parking for the construction workforce, no potential significant effects would occur.

### *Traffic & Circulation*

Impact – Construction activities will potentially have temporary direct effects on traffic and circulation in the project area by resulting in the growth of labor force accessing the site on a daily basis, and growth of truck trips due to the import of the aggregate material for the transload facility, spur dike and large deliveries.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds an estimated 8 to 20 workers would be onsite each day during construction depending on scheduled activities. These workers would access the area via regional and local roadways, and park their vehicles at the staging area. Approximately 82% of the employees are located in the Sacramento area; approximately 11% are located in Placer County and approximately 7% are located in El Dorado County. Table 44 of the FSEIS/EIR presents the assumptions used on where the workers are expected to originate their trips.

Based on the assumptions in Table 44, approximately 2 to 8 worker vehicles would add to I-80 and Highway 50 traffic during commute hours. Approximately one to two worker vehicles would add to commute traffic in the other regions. All workers would access the staging area parking from Folsom Lake Crossing. The increase in traffic due to the project's labor force in relation to existing traffic load and capacity of the roadway system would be less-than significant.

Construction vehicles accessing the site would be bringing aggregate materials and large deliveries. These deliveries would vary during the year depending on construction activities. The project site is assumed to receive aggregate and batch plant materials from the Teichert Prairie City Borrow Source located on Scott Road south of White Rock Road in Sacramento County. Offsite materials and equipment would be delivered to the project area via East Bidwell Street to East Natoma Road to Folsom Lake Crossing. Aggregate deliveries would be approximately 13 trucks per hour during the first year and last year of construction due to the installation and removal of the transload facility. Deliveries to the project area include steel and other construction materials would average three per day. The increase in traffic due to the deliveries of aggregate and other large deliveries in relation to existing traffic load and capacity of the roadway system would be less-than-significant. Materials for blasting are assumed to be brought to the project area on a daily basis from Jamestown, CA or Suisun City, CA. One truck trip a day during blasting periods would not result in a significant impact to traffic.

To determine the significance of the increase truck traffic, the number of haul trips was estimated for each alternative. Then this number was compared with the Institute of Transportation Engineers (ITE) significance threshold of 50 additional peak-hour truck trips. Traffic analysis did not show the Level of Service (LOS) deterioration during any project year. While some roadways in certain years would experience an increase in volume/ capacity, in all cases the increase is less than the 50 or more new truck trips

during the a.m. peak hour or the p.m. peak hour threshold of significance. Furthermore, the haul trucks trips at any given access route would be short-term. Therefore, potential construction related traffic impacts would not substantially disrupt the flow and/or travel time of traffic or exceed the ITE significance threshold. This impact would be less-than-significant. Full results of the traffic study, including traffic volumes, LOS, and volume/capacity ratio are in Appendix F of the FSEIS/EIR.

Impact – Traffic effects due to potential blasting operations of the proposed excavation for the approach channel and rock plug will cause the temporary closure of some roads estimated from Feb 2014 – October 2017.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that a safety fly rock zone of 2,500 feet would be maintained for human safety. During excavation of the approach channel and rock plug approximately 400 blasts in-the-wet and 200 blasts in-the-dry would occur from February 2014 to August 2017 (approximately 1,100 days of work). This results in an approximately one blast every other day. However, blasting events have the potential to occur every day for a maximum of twice a day. Blasting would require an encroachment permit from the City of Folsom, and the contractor would coordinate with the City of Folsom and provide adequate notification to the public, include signage, prior to blasting. The contractor's blasting plan would be approved by the Corps prior to blasting commencement.

The blasting would not be permitted to interfere with peak traffic flow, would occur at consistent time(s) and would require an encroachment permit from the city of Folsom. Folsom Lake Crossing would experience temporary traffic disruptions during construction at the roadways that would need to be closed during the rock excavation phase, which would require blasting. Folsom Lake Crossing would need to be closed for two hours for each blasting event. This two hour period would allow for 30 minutes to close the road, one hour to conduct the blasting and 30 minutes to reopen the roadway (The typical timeframe per blasting event for Phase III was 45 minutes. The timeframe includes the closing of the road, conducting blasting, and re-opening the road). Blasting is estimated to be needed during the excavation of the rock plug. During the blasting period, traffic desiring to cross the American River via Folsom Lake Crossing would be detoured through Historic Folsom using the same route that was used prior to the construction of Folsom Bridge.

The potential traffic effects caused by any short-term roadway stoppage are not considered to be significant factors to the current and projected traffic conditions in the area. The blasting activities would be scheduled for off-peak traffic hours thereby minimizing the potential affects to the existing traffic patterns. General traffic volumes during off-peak hours are significantly lower and the short term stoppages due to blasting activities would have no significant degradation to service levels. Blasting activities would be conducted during a consistent time throughout the day so the local driving public can be better prepared and adjust their driving patterns accordingly. The contractor would also provide public information notices for the blasting operations and associated road closures. These items are generally part of the blasting permit issued



by the local jurisdiction. With the implementation of the road closers, any public safety hazards resulting from construction activities on or near the public road system would be less than- significant.

### *Noise*

Impact – There is potential for significant effects if construction activities are conducted during non-exempt hours.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds mitigation measures would be necessary for all of these long-term, short-term, and modeled receiver sites where the daytime and nighttime exterior noise standards would be exceeded outside of construction noise exempt hours. Implementation of the mitigation measures discussed in Section 4.9.6 of the FSEIS/EIR would reduce the potential construction noise effects during non-exempt hours at human noise sensitive receptors to less-than-significant.

Additionally, if noise complaints are to occur from construction activities in non-exempt hours, it is expected that the Corps contractor would address those complaints and implement further mitigation, as needed, to reduce these potential effects. As a result, it is assumed that any potential significant effects associated with noise would be reduced to less-than-significant, with the implementation of the mitigation discussed in Section 4.9.6, and by responding to noise complaints when they are received. Furthermore, due to the many variables that need to be taken into account for nonexempt construction activities, it is recommended that a noise monitoring program be instituted in order to ensure compliance and establish the necessary mitigation measures where they are needed.

### *Cultural resources*

Impact – Project activities could affect the eligibility listings for Folsom Dam, right and left wing dams

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds Folsom Dam, which includes the right and left wing dams, has been found individually eligible for listing in the National Register of Historic Places (NRHP) due to its role in flood control, hydropower, and irrigation in the Sacramento region and eligible as a contributing element to the larger Central Valley Project (CVP). Dikes 7 and 8 were found eligible for listing in the NRHP as integrated components of Folsom Dam and as important structural elements in the formation of Folsom Lake. Previous determinations of affect for activities relating to the Dam Safety and Flood Damage Reduction phases of the JFP have been made for USBR and Corps projects within the current project Area of Potential Effects (APE). Those determinations of affect have been that there would be no adverse effect to historic properties within the APE (Folsom Dam and Dikes 7 and 8).

Impact – Construction of the cutoff wall and removal of the rock plug could affect historic properties within the APE.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that the Corps has made the preliminary determination that construction of the cutoff wall would not result in an adverse effect to historic properties within the APE. Construction of the secant pile cutoff wall and removal of the rock plug would occur in existing solid rock or fill material placed since the construction of Folsom Dam. Excavation of the approach channel and construction of the spur dike, transload facility, and placement of sediment would occur within Folsom Lake. Some activities would require underwater excavation and in-the-wet construction.

There are no known historic properties within the APE for the approach channel, spur dike, transload facility, and sediment placement site within Folsom Lake. Although an intensive archaeological survey of these areas could not be conducted due to the high lake level of the reservoir, there are not likely to be existing cultural resources in these areas. Photos of the construction of Folsom Dam show that the area adjacent to the dam and around the dikes was heavily disturbed by earthmoving activities. Additionally, the slope of the shoreline and hillside of this area is steep and would have likely precluded settlement. Equipment necessary for construction would use existing haul routes, borrow areas, and staging areas.

Impact – Lower reservoir levels may expose previously unsurveyed areas. Excavation of material within these previously unsurveyed areas within the APE may expose historic properties.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that those activities where excavation of material from within the reservoir would occur, where possible an archeological monitor will be present to examine the excavated material. If the reservoir lake level lowers and reveals previously unsurveyed areas within the APE that have been inundated in the past those areas will be surveyed for the presence of historic properties. If historic properties are discovered within the APE during these inventory efforts their eligibility for listing in the NRHP will have to be determined and an evaluation of effect made. If it is determined that a historic property will be adversely affected by the project a programmatic agreement or memorandum of agreement will be executed between the Corps and the State Historic Preservation Officer (SHPO) in order to mitigate for potential adverse effects.

Impact – The placement of disposal material within the reservoir may affect CA-SAC-358H.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds CA-SAC-358H may be affected by placement of disposal material within the reservoir but it has been determined to be likely destroyed and lacking sufficient integrity to make it eligible as a historic property.

Impact – Construction of the approach channel, spur dike, and transload facility would result in additional permanent flood risk management features associated with Folsom Dam, Dike 7 and Dike 8.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that although Folsom Dam and Dikes 7 and 8 are historic properties and have made significant contributions to the broad patterns of our history, they would not be adversely affected by the proposed project. The proposed project would visually affect the landscape within the APE, but the landscape is not a characteristic with which Folsom Dam and Dikes 7 and 8 are eligible for listing in the NRHP.

The proposed project would not result in a change in the primary function of Folsom Dam and Dikes 7 and 8. The eligibility of Folsom Dam as a historic property that represents and functions as an important flood control, hydropower, and irrigation feature in the Sacramento region and as a contributing element to the larger CVP, would not be altered, resulting in no adverse affects to this historic property by the proposed project. The eligibility of Dikes 7 and 8 as historic properties that represent integrated components of Folsom Dam and as important structural elements in the formation of Folsom Lake would not be altered, resulting in no adverse affects to these historic properties by the proposed project, therefore the potential impacts would be less than- significant. There would be no potential indirect effects to cultural resources under construction activities.

The Corps has made preliminary determinations of eligibility for all of the known historic properties within the APE and those potentially affected by the proposed project. For those areas where survey of historic properties may still be completed, if historic properties are discovered they will need to be recorded and evaluated for their eligibility for listing in the NRHP prior to approval of the EIS/EIR. Additionally, if consultation with potentially interested Native Americans results in the identification of potential historic properties within the APE, recordation and evaluation of effects to those properties would also need to be completed prior to approval of the FSEIS/EIR. Those determinations will be sent to the SHPO for comment and concurrence. If the SHPO concurs with the Corps' preliminary determinations that construction of the proposed project would have no potential adverse effects on historic properties there would be no need for mitigation measures.

During inventory and evaluation efforts, if it is determined that a historic property may be adversely affected by the proposed project, a programmatic agreement or memorandum of agreement will be executed between the Corps and the SHPO in order to mitigate for potential adverse effects.

However, if archeological deposits are found during project activities, work would be stopped pursuant to 36 Code of Federal Regulation (CFR) 800.13(b), Discoveries without Prior Planning, to determine the significance of the find and, if necessary, complete appropriate discovery procedures.

## *Topography and Soils*

There are no significant long term effects to topography and soils and therefore no mitigation is required. However, the following effects have the potential to occur due to project activities:

Impact – Excavation of the approach channel would include permanently excavating the rock plug area, and would result in a permanent reduction of elevation of the shoreline.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that approximately 700 linear feet of the rock plug would be removed which represents 0.18% of the total shoreline. The approach channel would be consistent with the land use on the southwest/downstream shoreline of the reservoir. The topographical change of the approach channel would be consistent with the functionality of the existing Folsom Dam.

Impact – The construction of the spur dike would change the topography of a small portion of the Folsom Lake area (1%).

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds the spur dike would be a permanent expansion of the Folsom Overlook area. The construction of the spur dike would alter approximately 1% of Folsom Reservoir's 75-miles of shoreline. The topography of the spur dike would be consistent with the surrounding shoreline of the Folsom Overlook area, and would not change the overall topography of the area.

Impact – Construction activities will result in soil disturbance and replacement of soils with concrete, and temporarily expose disturbed areas to erosion by wind or rainfall events.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds soil types have a moderate to high erosion potential due to the steep slopes within the project area and the active excavation and grading of soil during construction activities. 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. Further discussion of potential erosion concerns and the associated BMPs are addressed in Section 4.4, Water Quality.

There would be no potential indirect effects to topography and soils associated with construction activities. Discussion of the project area geology and seismicity are addressed in 3.1.1, Geology and Seismicity. The design and construction of the approach channel 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. As a result, less-than-significant effects are expected to topography and soils.

## *Vegetation and Wildlife*

Impact – Use of the Dike 8 disposal area would result in a total permanent loss of 15.8 acres of ruderal herbaceous, oak savannah, transitional wetland, and open water/reservoir shoreline fluctuation zone habitats on the north of the dike. Associated with the loss of the habitat is the potential to remove up to 30 trees.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that mitigation measures committed to in the 2007 FSEIS/EIR and Record of Decision (ROD) would continue to be implemented. In addition, mitigation for the permanent loss of habitat discussed above would be required. This mitigation would be conducted in accordance with the recommendations provided in the Coordination Act Report. The final Coordination Act Report is included in Appendix I of the FSEIS/EIR and outlines the specific mitigation requirements for the removal of trees and loss of habitat.

Impact – Use of the Dike 8 disposal site has the potential to affect a variety of wildlife species, including duck species and any amphibian species that use the transitional wetland habitat in the northern reach of the Dike 8 area.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds there is anticipation that most of the terrestrial species using the area would temporarily relocate due to increased disturbance and activity in the area.

In order to preemptively avoid potential direct effects to amphibian and wetland species, materials would be placed during low water levels. In addition, the culvert under the haul route that allows the flooding of the Dike 8 area would be closed during low water levels prior to use of the Dike 8 area. As a result, this area would not flood, and the seasonal habitat would not be created for these species during the construction period. Since the flooding of this area fluctuates with reservoir levels, and does not annually flood, this would be considered a less-than-significant direct impact on these wildlife species.

Impact – Use of the Dike 8 disposal site will result in the permanent loss of 2.5 acres of transitional wetlands.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds this long-term habitat loss would be considered a significant indirect effect to these species, as they would no longer be able to seasonally access this habitat. As a result, mitigation for the permanent loss of transitional wetland habitat would be required. To mitigate for the 2.5 acres of transitional wetlands associated with fill placement at Dike 8, the Corps would purchase 2.5 acres of seasonal wetlands at a Corps approved mitigation bank.

Impact – Use of the Dike 8 disposal site has the potential to affect nesting birds and raptors using this habitat.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that to ensure there would be no effect to migratory birds, preconstruction surveys would be conducted, if needed, in and around the project area. If any migratory birds are found, a protective buffer would be delineated, and USFWS and CDFW would be consulted for further actions. Recommendations proposed by the USFWS in their Fish and Wildlife Coordination Act Report are listed in Section 4.15 of the FSEIS/EIR.

### *Special Status Species*

Impact – Use of the proposed Dike 8 disposal area has the potential to directly and indirectly significantly impact Valley Elderberry Longhorn Beetle (VELB) habitat (4 elderberry shrubs). Potential direct effects include removal or trimming of the shrubs while potential indirect effects include physical vibration and an increase in dust during disposal activities.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that if the proposed Dike 8 disposal site would be used during project construction, consultation has been initiated with USFWS and CDFW to assess the potential impacts discussed above and determine appropriate mitigation measures. The following mitigation measures have been proposed by the Corps during consultation to reduce the potentially significant effects associated with the Dike 8 disposal area to less-than-significant.

### **Valley Elderberry Longhorn Beetle**

The Corps would compensate for the loss of the four elderberry shrubs, if they are removed. The four elderberry shrubs would be transplanted to USFW approved location and monitored for 5 years. Compensation would also consist of planting elderberry shrubs and associated natives at an existing Corps mitigation site in the American River Parkway or purchasing credits at a USFWS approved mitigation bank. If the shrubs are not removed, and the proposed Dike 8 disposal area is used, the following measures taken from the USFWS “Conservation Guidelines for the Valley Elderberry Longhorn Beetle,” July 1999 would be incorporated into the project to minimize potential take of the VELB:

- A minimum setback of 100 feet from the drip line of all elderberry shrubs would be established, if possible. If the 100 foot minimum buffer zone is not possible, the next maximum distance allowable would be established. These areas would be fenced, flagged, and maintained during construction.
- Environmental awareness training would be conducted for all workers before they begin work. The training would include status, the need to avoid adversely affecting the elderberry shrub, avoidance areas and measures taken by the workers during construction, and contact information.

- 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.

Potential impacts to VELB would be less-than-significant with the implementation of the USFWS conservation guidelines for the beetle.

Impact – Use of the proposed Dike 8 disposal area could potentially result in direct and indirect effects to the white-tailed kite if they begin nesting in the area. Construction activities in the vicinity of a nest have the potential to result in forced fledging or nest abandonment by adult kites.

Finding – For the reasons stated in the FSEIS/EIR, CVFPB finds that prior to use of the proposed Dike 8 disposal area, preconstruction surveys would be conducted to determine if there are nests present within 1,000 feet of the disposal 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 potential effects to white-tailed kite would be less-than-significant.

### **White-tailed Kite**

The following mitigation measures would be implemented prior to use of the proposed Dike 8 disposal areas to reduce potential adverse effects to white-tailed kites:

- 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 CDFW and/or USFWS, and the proper avoidance and minimization measures would be implemented.
- If a nesting pair is present, a biological monitor would be on-site during construction activities to ensure, in coordination with CDFW, that white-tailed kites are not adversely affected by project construction.
- To avoid potential impacts to birds and raptor species, any trees that must be removed prior to use of the Dike 8 disposal area would be removed during the time period of August 15 to February 15. If trees must be removed outside of that timeframe, a qualified biologist must survey the area prior to tree removal to verify the presence or absence of nesting birds.

With the implementation of these mitigation measures, potential adverse effects to white-tailed kites associated with the proposed use of the Dike 8 disposal area would be less-than-significant.

## **Cumulative Impacts**

CEQA requires the consideration of cumulative effects of the proposed action, combined with the effects of other projects. The CEQA Guidelines (CERES 2007) define cumulative effects as “two or more individual effects which, when considered together, compound or increase other environmental impacts” (Section 15355).

The cumulative effects analysis determines the combined effect of the proposed project and other closely related, reasonably foreseeable projects. Cumulative effects were evaluated by identifying projects in and around the Folsom Dam vicinity that could have significant, adverse, or beneficial effects. These potential effects are compared to the potential adverse and beneficial effects of the proposed alternative to determine the type, length, and magnitude of potential cumulative effects. Additional detailed information on cumulative effects on the approach channel project is included in the 2007 FEIS/EIR (USBR 2007a). Mitigation of significant cumulative effects could be accomplished by rescheduling actions of proposed projects and adopting different technologies to meet compliances. Significance of cumulative effects is determined by meeting Federal and State mandates and specified criteria identified in the FSEIS/EIR for affected resources.

This section discusses the potential cumulative effects of the approach channel project when added to other past, present, and reasonably foreseeable future actions. If the project is not expected to contribute to a cumulative effect on a resource, that resource is not addressed; these resources include geology, topography, soils, minerals, hydrology, public utilities and services, socioeconomics, vegetation and wildlife, special status species, and HTRW. The 2007 Folsom Dam Safety and Flood Damage Reduction draft and final EIS/EIR addresses hydraulics and land use in detail. The other resources that could involve a cumulative effect are discussed in more detail below. Table 62 of the FSEIS/EIR summarizes the potential effects and related mitigation measures.

### *Air Quality*

The approach channel project’s construction period (2012-2017) would overlap with other JFP construction activities, including the control structure, chute, and stilling basin projects (2010-2016). These other activities are referred to in this section as the “downstream project”, and are considered to be a codependent project subject to evaluation for the General Conformity Rule by the USEPA.

Other concurrent projects listed above, with the exception of the downstream project and the Folsom Dam Raise, are considered discrete projects outside the consideration



of the General Conformity Ruling for the approach channel project. Emission projections with the Folsom Dam Raise project, which may begin in 2017, were not considered here since the project is in early planning stages. When Folsom Dam Raise emission figures are determined, they may also require cumulative assessment with the approach channel and downstream project for the purpose of General Conformity determination.

Long-term emissions associated with the completion of the JFP would be analyzed as a part of the Folsom Dam Water Control Update. However, it is anticipated that any long-term emissions associated with operation of the auxiliary spillway would be well below State and Federal thresholds, and would not significantly contribute to the overall potential cumulative impacts.

### **Combined JFP (Upstream and Downstream Projects) Analysis**

This section discusses the quantitative analysis of the potential cumulative short-term air quality effects of the approach channel project alternatives in combination with the other features of the JFP. Qualitative discussions of the potential cumulative effects of the approach channel project and the other projects identified in Section 5.3 of the FSEIE/EIR are also included. Prior cumulative air quality effects assessed from the 2007 EIS/EIR did not specifically address the approach channel project and other regional projects. Air emission models, project elements, the NO<sub>x</sub> *de minimis* threshold and resulting calculated emissions differed substantially between the 2007 EIS/EIR and the current Folsom Dam JFP project.

Sufficient construction activity information was available to perform a quantitative analysis of the potential cumulative air quality effects, using the General Conformity *de minimis* thresholds, for the approach channel project and the downstream project. The methodology for emission estimates and assumed mitigation measures for the downstream project are detailed in Appendix A. Because these estimates are conducted for the USEPA rather than CEQA, emission calculations were estimated using OFFROAD2011 and EMFAC2007 models.

Table 60 summarizes total annual unmitigated emissions for ROG, NO<sub>x</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> for the project and the downstream project. Emissions in Table 60 are compared to the GCR *de minimis* thresholds for determination of potential impacts relative to compliance with the GCR. Based on Table 60, unmitigated NO<sub>x</sub> and PM<sub>10</sub> emissions would exceed their respective *de minimis* thresholds and ROG CO, and PM<sub>2.5</sub> would be below their respective *de minimis* thresholds in all overlapping years (2013-2017).

Table 61 of the FSEIS/EIR summarizes total annual mitigated emissions for ROG, NO<sub>x</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> for the project and the downstream project. Mitigation for the approach channel project is presented in Section 4.2.7. Mitigation measures for exhaust emissions at the downstream project were based on SMAQMD guidance for

on-site off-road construction and on-site haul trucks (greater than 50 horsepower), including owned, leased, and subcontractor vehicles. Additional mitigation measures would include watering controls to reduce fugitive dust.

Based on Table 61, mitigated NO<sub>x</sub> would exceed the *de minimis* thresholds in 2016 and 2017 and mitigated ROG, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions would be below their respective *de minimis* thresholds in all overlapping years (2013-2017). Therefore, the cumulative impact of the criteria pollutant emissions from the approach channel project and the downstream project would be less-than-significant for ROG, CO, SO<sub>2</sub>, and PM<sub>2.5</sub>, less-than-significant with mitigation for PM<sub>10</sub>.

NO<sub>x</sub> emissions associated with the combined JFP exceed the GCR *de minimis* threshold. However, SMAQMD has evaluated the JFP's exceedance and has prepared a conformity determination based on the estimated emissions discussed in this FSEIS/EIR. The general conformity evaluation is included as Appendix B of the FSEIS/EIR. The evaluation determined that the current emissions estimated in the SIP were overestimated and as a result, the JFP emissions could be included as a part of CARB's 2011 SIP amendment. As a result, the combined emissions associated with this project would be in compliance with the GCR and would be considered less-than-significant with mitigation.

## **Regional Cumulative Projects Analysis**

Concurrent construction projects within and adjacent to Folsom Reservoir could have potential adverse cumulative air quality impacts, although these impacts would be temporary. Regional projects that could overlap with the Folsom JFP project include the Johnny Cash Folsom Prison Blues Trail (Historic Truss Bridge to Green Valley Road Segment projected for construction in year 2013 and unknown completion), the El Dorado 50 – HOV lanes (2013-2015), Hazel Avenue Improvement Project (2013) and the Mormon Island Auxiliary Dam Modification Project (years 2013-2014). The projected dates for widening of Green Valley Road are undetermined at this time. Each of these projects could temporarily overlap the Folsom Dam JFP project from one to two years and contribute to regional emissions.

It is expected that the potential primary impacts from these concurrent projects would result from construction activities. Construction of these projects would increase emissions of criteria pollutants, including ROG, NO<sub>x</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions, from on-site construction activities, including transport of materials.

As defined by the Federal Clean air Act, the general conformity *de minimis* thresholds apply to the individual emissions from a project, but do not apply to the cumulative emissions from regional projects. With mitigation required by SMAQMD, individual construction projects would likely result in emission totals less than SMAQMD's CEQA significance threshold levels. However, if regional construction projects within the SMAQMD's are implemented concurrently, these combined construction activities could

generate cumulative emissions above CEQA and general conformity thresholds. Since final emissions projections have not been finalized for these projects, exceedance is not known at this time.

The USBR has recently extended the MIAD Modification Project over a longer construction period in order to reduce annual emissions in order to comply with the SMAQMD thresholds. Though construction emissions would be mitigated below CEQA for the MIAD project, the cumulative emissions from these two projects (MIAD plus Folsom JFP project) could exceed the local air quality thresholds through years 2013 and 2014, and potentially, additional years as well. Additional regional project emissions within the boundaries of the SMAQMD could also contribute to exceedance of the emission thresholds.

However, incorporation of the Folsom JFP's emissions into the SIP by the SMAQMD, effectively accounts for the Folsom JFP's contribution to cumulative emissions, within the Sacramento Valley Air Basin. As a result, the Folsom JFP project would result in a less-than-significant contribution to potential cumulative air quality impacts.

### *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.

It is expected that the potential primary impacts from these concurrent projects would be due to construction activities. On an individual basis, these projects would mitigate emissions below the general reporting threshold. If these projects are implemented concurrently, the potential combined cumulative effects could be above reporting requirements for GHG emissions. If this was the case, concurrent construction projects within and adjacent to Folsom Dam 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, as discussed in Sections 4.2.6 and 4.3.6. By implementing the LACMTA Green Construction Policy, the Corps would reduce overall emissions associated with the Approach Channel project, 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. As a result, the overall cumulative GHG emissions from these concurrent project are considered to be less-than-significant.

### *Water Quality*

Other concurrent projects were researched by the Corps, but they are not expected to contribute to water quality effects in Folsom Reservoir and as a result they are not considered significant. Folsom JFP construction would result in increased dam safety and flood risk mitigation. This long-term effect would be beneficial and therefore does not require mitigation. The Lower American River Common Features Project and Long-Term Reoperation of Folsom Dam and Reservoir have the potential to collectively increase the flood damage reduction in even greater amounts. These projects would culminate in potential long-term beneficial impacts for flood damage reduction and dam safety. None of these concurrent projects are expected to contribute to mercury bioaccumulation, and therefore potential cumulative impacts are not anticipated.

### *Fisheries*

Potential cumulative effects are not expected for fisheries and as a result, not expected to be significant. Short-term land based activities of concurrent or cumulative projects would comply with federal and state water quality mandates to avoid contributions towards aquatic effects that could have an adverse effect on fisheries. Project compliance with Federal and State water quality regulations will ensure that potential effects are negligible or produce less-than-significant cumulative effects upon Folsom Reservoir fish. No potential effects are expected upon Federal or State species of concern or their habitat in conjunction with the approach channel project.

### *Aesthetics and Visual Resources*

Excavation of the approach channel would overlap with construction of the control structure, concrete lining of the chute and stilling basin, and for only the first year of construction, the seismic improvements project at MIAD. Concurrent construction of the approach channel, spillway, and control structure has the potential to result in short-term cumulative effects on visual resources in the project area. Additional vegetation clearing, earth moving, construction equipment and stockpile from these projects could contribute to a larger temporary overall visual impact. The control structure will contrast with the existing shoreline, leading to a long-term permanent visual impact. However, potential cumulative effects are expected to be less-than-significant because Folsom Lake's southern shoreline is of low visual quality and other large manmade features such as Folsom Dam are already well established in the landscape.

Improvements at MIAD, including excavation and replacement of the foundation, and placement of an overlay with drains and filters, would occur concurrently with the first year of approach channel excavation. Potential significant effects to the existing landscape at MIAD would be reduced by USBR with the creation of 80 acres of habitat

mitigation at Mississippi Bar. The new overlay could use up to 775,000 cy of the excavated materials disposed at MIAD by the Corps under previous phases of the JFP, which would reduce the overall impact of the MIAD disposal area (USBR 2010). Therefore, the combination of the MIAD Improvement project and the approach channel excavation would reduce the overall potential visual cumulative effects associated with the MIAD disposal site.

### *Recreation*

There is only one project considered in the cumulative analysis that would have the short term potential to limit recreation at FLSRA, and three projects that have to potential to increase recreational access on a long-term basis.

The Corps completed construction of Folsom Lake Crossing in 2009, which has provided increased recreation opportunities due to the new bicycle and pedestrian lanes. Likewise, the Johnny Cash Folsom Prison Blues (Folsom Lake) Trail would increase bicycle and pedestrian access from the Historic Truss Bridge to Green Valley Road. The rough grading of the approach ramp was completed in October 2011. Construction of the bridge and trail is expected to begin in fall of 2012. Future construction of the bike trail has the potential to have a significant, long term positive effect upon recreation and public access to the FLSRA.

The Mormon Island Auxiliary Dam Modification is currently being constructed and is scheduled to be completed in 2014; this project could potentially produce short term impacts to recreation. The approach channel is scheduled to begin in summer 2013, therefore, the construction periods of these two projects would overlap by one and a half years. No construction is proposed on the waterside of MIAD so there would be no potential impacts to boating or aquatic activities. The Folsom-Brown's Ravine Trail atop MIAD and the parking lots at MIAD would be closed to the public during construction because of the potential public safety hazards at the construction site. Visitors would need to park at Brown's Ravine or find alternate parking areas. While these projects would have a cumulative effect on recreation, the MIAD Modification Project would only temporarily impact land-based activities, whereas the approach channel construction would impact water-based activities. Because the projects affect different recreation activities, and the potential MIAD Modification Project impacts would be temporary, it is not expected that visitation would be substantially reduced and with this order of magnitude, potential cumulative effects are not considered to be significant.

### *Traffic and Circulation*

There are seven short-term projects that have the potential to effect traffic. The Hazel Avenue Improvement Project, widening of Green Valley Road, and the Folsom Bridge Project are completed projects that have benefited traffic volumes. There is the potential for future construction activities in the vicinity of the JFP to be constructed concurrently with the proposed action. It is anticipated that construction would be ongoing for the Control Structure, Chute, and Stilling Basin by the Corps' and the

Mormon Island Auxiliary Dam Modification Project by USBR. Caltrans has planned two Highway 50 improvement projects, the El Dorado 50 – HOV lanes, and Sacramento 50 Bus-Carpool Lane and Community Enhancements Project that have the potential to temporarily increase traffic levels along Highway 50.

Simultaneous construction of these projects would temporarily increase traffic levels from the transport of materials and the labor force's shift work. Deliveries of materials to the project site would range from two to three times a day. The addition of three truck trips along Highway 50 would not significantly add to congestion. Workers accessing the project area would do so during commute hours, whereas, Caltrans construction hours are during non-peak times. In acknowledgement, a growth factor of 2% per year consistent with previous studies was applied for future baseline projections on all study roadway segments in the traffic effects analysis to account for potential cumulative activities as well as ambient traffic growth in the area. Due to the staggered schedules, magnitude of vehicles involved and the short-term increase of traffic to existing roads, these projects are not expected to be cumulatively significant.

### *Noise*

There is the potential for future construction activities in the vicinity of the JFP to be constructed concurrently with the proposed action. These projects are short-term projects that include the Mormon Island Auxiliary Dam Modification Project, Folsom Dam Raise, and the Johnny Cash Folsom Prison Blues Trail construction. No long-term effects are expected. In addition, it is anticipated that construction would be ongoing by the Corps' for the Control Structure, Chute, and Stilling Basin work associated with the JFP. Concurrent construction of these projects has the potential to temporarily increase noise levels in the surrounding areas.

Simultaneous construction of these projects would increase noise levels, from onsite construction and transport of materials. The worst case assumption indicates that simultaneous construction could potentially increase source noise emissions by 3 dBA. If these construction projects are implemented concurrently, the potential combined cumulative effects could be above significance thresholds. If this were the case, each project would need to mitigate individual noise effects which could decrease overall cumulative effects for less-than-significant effects. However, without consideration of scheduling and sequence of activities, determination of whether concurrent construction projects within and adjacent to Folsom Lake could have significant cumulative noise effects is not possible. Construction involved with both the Folsom Dam JFP and the projects listed above are short-term and, therefore, there will be no long-term cumulative noise effects other than increases in noise levels during simultaneous construction activities.

### *Cultural Resources*

None of the projects identified would result in a cumulative effect that would adversely or significantly affect cultural resources. The area around Folsom Lake is an

established recreation and transportation corridor area and additional projects such as bike trails, widening of roads, Highway Off-road Vehicles (HOV), and carpool lanes would not result in short-term or long-term adverse affects to any of the historic properties within the APE (Folsom Dam and Dikes 7 and 8) since the projects would not affect the characteristics that make those properties eligible for listing in the NRHP.

Construction of projects such as pipelines, office buildings, the ongoing Folsom Dam Safety and Flood Damage Reduction Projects, and the Folsom Dam Flood Management Operations Study also would not adversely affect the historic properties within the APE. As with the approach channel project, these projects would not affect the characteristics that make Folsom Dam and Dikes 7 and 8 eligible for listing in the NRHP.

### *Topography and Soils*

There are two projects that have the potential to effect soils and topography. Both the Mormon Island Auxiliary Dam Modification and the Johnny Cash Folsom Prison Blues (Folsom Lake) Trail require large volumes of soils to be moved. Mormon Island Auxiliary Dam Modification is currently being constructed and is scheduled to be completed in 2014. The first segment of the Folsom Lake Trail includes a bike/pedestrian overcrossing of the Folsom Lake Crossing Road and rough grading of the approach ramp has been completed. Although the construction of the projects would involve a substantial amount of soil moving activities, potential impacts associated with soil erosion and loss of topsoil would be mitigated. Upon completion of the projects, the general topography at the site would change from current conditions but would remain consistent with the areas land use. Potential cumulative effects associated with soil resources and topography would be less-than-significant.

### *Vegetation and Wildlife*

In addition to the Folsom JFP approach channel excavation, the Mormon Island Auxiliary Dam Modification project has 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. Mitigation would also be created as a result of any potential vegetation and wildlife effects associated with the use of the proposed Dike 8 disposal area. 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, successful mitigation associated with both of these projects has the potential to increase overall habitat quality in the long-term. As a result, the cumulative effect of these two projects' habitat loss would be considered less-than-significant, with the implementation of the projects' proposed mitigation.

### *Special Status Species*

In addition to the Folsom JFP approach channel excavation, 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, have also included elderberry mitigation that added to this corridor. The four elderberry shrubs that could be removed with the use of the proposed Dike 8 disposal area are non-riparian and are disconnected from any contiguous habitat. If removed, mitigation conducted would include plantings, which would likely occur within the American River Parkway. As a result, the mitigation would benefit the species by adding habitat connectivity. As a result, the cumulative effect of these two projects' effects to elderberry shrubs would be considered less-than significant, with the implementation of the projects' proposed mitigation.

### *Growth-Inducing Effects*

In general, an action would be considered growth inducing if it caused or contributed to economic or population growth. Growth-inducing effects would result in more economic or population growth than would have occurred otherwise from other factors. Thus, a growth inducing action would promote or encourage growth beyond that which could be attributed to other factors known to have a significant relationship to economic or population growth.

Within the study area, growth and development are controlled by the local governments of the city of Folsom, and Sacramento, El Dorado, and Placer counties. Consistent with California law, each of these local governments has adopted a general plan and each general plan provides an overall framework for growth and development within the jurisdiction of each local government. Local, regional, and national economic conditions also directly affect growth and development.

The alternatives currently considered for the approach channel excavation would not contribute directly to population or economic growth by constructing additional housing or by building new businesses. However, the overall JFP would generate additional economic benefits during construction and would contribute to greater flood risk management for the Sacramento area once complete. The potential for any growth-inducing effects associated with the overall JFP were analyzed under the 2007 FEIS/EIR (USBR 2007a).

The approach channel excavation is of a limited scope, and would not promote or contribute to any regional economic or population growth. Any future local growth would be required to remain consistent with the local general plans, as described above.



Blank Page Left Intentionally

## **Attachment E:**

### **Mitigation, Monitoring, and Reporting Plan**

Blank Page Left Intentionally

**MITIGATION, MONITORING, AND REPORTING PLAN**  
**FOLSOM DAM MODIFICATIONS PROJECT – APPROACH CHANNEL**  
**SACRAMENTO COUNTY, CALIFORNIA**

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

The MMRP table includes the following:

- Section and Impacts – identifies the issue area section of the Supplemental Environmental Impact Statement/Environmental Impact Report (SEIS/EIR) and corresponding impact.
- Mitigation Measures – lists the adopted mitigation measures from the SEIS/EIR.
- Implementation Timing – identifies the timing of implementation of the action described in the mitigation measures.
- Responsible for Implementation – identifies the agency/party responsible for implementing the actions described in the mitigation measures.
- Responsible for Monitoring /Reporting Action– identifies the agency/party responsible for monitoring implementation of the actions described in the mitigation measures. Verification will be carried-out during the project and a MMRP completion report will be submitted to the CVFPB upon completion of the project.

**Notes:**

- D:** To be implemented or included as part of project design. Includes pre-project permitting and agency coordination.  
**P:** To be implemented prior to construction being initiated (pre-construction), but not part of project design or permitting.  
**C:** To be implemented during project construction.  
**M:** To be implemented as ongoing maintenance after construction is complete.  
**O:** To be implemented as an operational practice after construction is complete.

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>4.2.4 Air Quality</p> <p>1) Construction activities will generate criteria pollutants from equipment exhaust emissions and fugitive dust emissions.</p> <p>1) The unmitigated annual criteria pollutants would exceed the qualitative Sacramento Metropolitan Air Quality Management District (SMAQMD) Particulate Matter 10 (PM10) threshold and the quantitative SMAQMD Nitrogen Oxide (NOx) threshold as well as the General Conformity thresholds for PM10 and NOx.</p> <p>2) Sensitive receptors within 1,000ft of the construction area could potentially be exposed to diesel particulate matter (DPM).</p> <p>3) Construction workers and local sensitive receptors in the area may be exposed to airborne Naturally Occurring Asbestos (NOA) from construction activities from fugitive dust sources and trackout related to fugitive dust emissions or transportation of uncovered soils.</p> <p>4) Sensitive receptors located within 1,000ft of the construction area could be exposed to offensive odors emitted from construction activities.</p> <p>5) The Folsom JFP is expected to exceed the General Conformity de minimis thresholds for NOx emissions over the life of the project when mitigated.</p> | <p><b><u>SMAQMD's Basic Construction Emissions Control Practices</u></b></p> <p>The SMAQMD requires construction projects to implement basic construction emission control practices to control fugitive dust and diesel exhaust emissions (SMAQMD 2011). The Corps would comply with the following control measures for the project:</p> <ul style="list-style-type: none"> <li>• Water all exposed surfaces twice daily. Exposed surfaces include but are not limited to: soil piles, graded areas, unpaved parking areas, staging areas, and access roads.</li> <li>• 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 travel along freeways or major roadways should be covered.</li> <li>• Use wet power vacuum street sweepers to remove any visible trackout mud or dirt from adjacent public roads at least once a day. Use of dry power sweeping is prohibited.</li> <li>• Complete all roadways, driveways, sidewalks, or parking lots to be paved as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.</li> <li>• Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and</li> </ul> | D, C                  | Contractor/<br>the Corps   | CVFPB will verify that the Basic Construction Emission Control Practices are being implemented by the contractor. Basic practices include the use of higher tiered equipment beginning in 2015, BMPs, and submittal of equipment specs by the contractor to SMAQMD. |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Implement<br>ation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action                                                                                                                                                                           |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <p>2485]. Provide clear signage that posts this requirement for workers at the site entrances.</p> <ul style="list-style-type: none"> <li>• Maintain all construction equipment in proper working condition according to the manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.</li> <li>• Interim Tier 4 and/or Final Tier 4 off-road equipment would be used beginning in year 2015.</li> <li>• In addition to using Tier 3 and Tier 4 off-road equipment, contractors would report their equipment specifications to the SMAQMD and the Corps to ensure the mitigation is implemented.</li> </ul> <p><b><u>Construction Area Particulate Matter Mitigation Measures</u></b></p> <p>If the project's construction contractor determines that the construction activities would actively disturb more than 15 acres per day, then the contractor would be required to conduct PM10 and PM2.5 dust modeling. If that modeling shows violations of SMAQMD's PM10 substantial CAAQS significance thresholds of the PM2.5 CAAQS thresholds, then the contractor would be required to implement sufficient mitigation to eliminate any significant PM10 or PM2.5 impacts.</p> <p><b><u>Fugitive Dust Emission Mitigation Measures</u></b></p> <p>Fugitive dust mitigation would require the use of adequate measures during each construction activity and would include frequent water applications or application of soil additives, control of vehicle access, and vehicle speed restrictions. The Corps would implement the dust mitigation</p> | D,C                          | Contractor/<br>the Corps         | <p>SMAQMD ensures compliance of dust modeling, and CVFPB verifies dust modeling has been completed and impacts for emissions exceeding significance thresholds are mitigated for.</p> <p>CVFPB verifies fugitive dust emission</p> |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Implement<br>ation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <p>measures listed below.</p> <p>A geologist would monitor the project area for the presence of NOA during all construction activities. All grading / excavation projects at Folsom Dam are required by SMAQMD to produce an Asbestos Dust Mitigation Plan and fee payment to be submitted to the District 90 days prior to commencement of grading and/or other soil impacting activities. The Corps would comply with the CARB's Section 93105, 2002-07-09 Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (CARB 2008). The Corps would additionally ensure implementation of the fugitive dust mitigation measures below, which are similar to those required under an Asbestos Dust Control Plan.</p> <ul style="list-style-type: none"> <li>• Limit vehicle speeds on unpaved roads to 15 miles per hour, and</li> <li>• Water at least every two hours of active construction activities or sufficiently often to keep the area adequately wetted.</li> <li>• Remove any visible track-out from a paved public road at any location where vehicles exit the work site: this removal effort shall be accomplished using wet sweeping of a HEPA filter-equipped vacuum device daily.</li> <li>• Install one or more of the following track-out prevention measures: <ul style="list-style-type: none"> <li>o A gravel pad designed using good engineering practices to clean the tires of exiting vehicles.</li> </ul> </li> </ul> | D, C                         |                                  | <p>mitigation measures are implemented. Measures include verifying that a geologist is on-site to monitor for the presence of NOA during construction activities.</p> <p>CVFPB verifies Asbestos dust mitigation plan and fee have been paid to SMAQMD.</p> <p>CVFPB verifies that compliance with CARB's Section 93105, 2002-07-09 asbestos ATCM for Grading, Quarrying, and Surface mining Operations requirements are being met.</p> |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Implementation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------|----------------------------------------------------------|
|                     | <ul style="list-style-type: none"> <li>o A tire shaker</li> <li>o A wheel wash system</li> <li>o Pavement extending for not less than 50 feet from the intersection with the paved public road, or</li> <li>o Any other measure(s) as effective as the measures listed above.</li> </ul> <ul style="list-style-type: none"> <li>• Pre-wet the ground to the depth of anticipated cuts, and</li> <li>• Suspend any excavation operations when wind speeds are high enough to result in dust emissions across the property line, despite the application of dust mitigation measures.</li> <li>• To mitigate stockpile handling and stockpile wind erosion fugitive dust emissions, active storage pile would be kept adequately wetted using wet suppression controls.</li> <li>• To mitigate fugitive dust emissions from storage piles that would remain inactive for more than seven days, the Corps would ensure implementation of one or more of the following measures: <ul style="list-style-type: none"> <li>o Wet suppression controls</li> <li>o Establishment and maintenance of surface crusting sufficient to satisfy the surface crusting test identified in the Asbestos ATCM</li> </ul> </li> </ul> |                          |                                  |                                                          |



| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|---------------------------------------------|
|                     | <ul style="list-style-type: none"> <li>o Apply chemical dust suppressants or chemical stabilizers,</li> <li>o Cover with tarp(s) or vegetative cover, and/or</li> <li>o Install wind barriers across open areas.</li> <li>o Install wind barrier of 50 percent porosity around three sides of storage piles, and/or</li> <li>o Any other measure(s) as effective as the measures listed above.</li> </ul> <ul style="list-style-type: none"> <li>• To mitigate fugitive dust emissions from in-dry blasting operations, water would be applied every 4 hours within 100 feet of the demolition area.</li> <li>• To mitigate fugitive dust emissions from the rock crushing facility, wet suppression controls would be implemented.</li> <li>• To mitigate fugitive dust emissions from the concrete batch plant operations, one or more of the following measures would be implemented: <ul style="list-style-type: none"> <li>o Apply water sprays,</li> <li>o Set up enclosures, hoods, curtains, shrouds, movable and telescoping chutes, and/or</li> </ul> </li> </ul> |                       |                            |                                             |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                 |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|
|                     | <ul style="list-style-type: none"> <li>o Install a central dust collection system.</li> <li>o To mitigate staging area or haul road emissions, the Corps would upon completion of the project, accomplish post-construction stabilization of disturbed surfaces by using one or more of the following measures:</li> <li>o Establishing a vegetative cover,</li> <li>o Placing at least 12 inches of non-asbestos-containing material,</li> <li>o Paving, and/or</li> <li>o Implementing any other measure deemed sufficient to prevent wind speeds of 10 miles per hour or greater from causing visible dust emissions.</li> </ul> <p><b><u>Exhaust Emission Mitigation Measures</u></b></p> <p>Cleaner Off-Road Equipment</p> <p>The project will incorporate the Los Angeles County Metropolitan Transportation Authority (LACTMA) Green Construction Policy (LACMTA 2011) requirements for the on-site construction off-road equipment. The Corps will use Tier 3 off-road equipment for the first two years of construction (2013-2014), and use interim Tier 4 off-road equipment beginning in 2015.</p> | C                     |                            | CVFPB will verify implementation of LACTMA Green construction policy requirements including use of higher tiered equipment. |



| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Implementation Timing                 | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                                                                                                                                                                                                             |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <p>Haul Truck Controls</p> <p>MY 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.</p> <p>Use of Electrical Equipment</p> <p>Construction equipment powered by electricity, rather than diesel fuel, eliminates criteria pollutant emissions from diesel combustion. Electrification would result in a small amount of indirect CO<sub>2</sub> emissions due to the operation of the electric grid. Various types of construction equipment may feasibly be run on electricity. The Corps will electrify the concrete batch plant and the rock crushing facility.</p> <p><b><u>NO<sub>x</sub> Mitigation Fee</u></b></p> <p>The Contractor would provide payment of the appropriate SMAQMD-required NO<sub>x</sub> mitigation fee to offset the project's NO<sub>x</sub> emissions when they exceed SMAQMD's threshold of 85 lbs/day. Estimated calculations for these mitigation fees are included under each alternative's effects analysis in Tables 24 and 29. The NOx Mitigation Fee applies to all emissions from the project: on-road (on-and off site), off-road, portable, marine and stationary equipment and vehicles.</p> <p><b><u>SIP Inclusion</u></b></p> <p>The Folsom JFP is expected to exceed the General Conformity de minimis threshold for NOx over the life of the project when mitigated. Therefore, the Corps must demonstrate conformity by (1) showing the project will meet all ozone SIP control requirements; and (2) meeting one of following options:</p> | <p>C</p> <p>C</p> <p>C</p> <p>D,C</p> |                            | <p>CVFPB will verify MY 2010 or newer haul trucks are being used.</p> <p>CVFPB will verify that the concrete batch plant and rock crushing facility have been electrified.</p> <p>CVFPB will verify payment of NOx mitigation fee to SMAQMD.</p> <p>CVFPB will verify that the contractor has stayed within the estimated emissions in the 2011 SIP</p> |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                  |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <ul style="list-style-type: none"> <li>• Demonstrate that the total direct and indirect emissions are specifically identified and accounted for in the applicable SIP.</li> <li>• Demonstrate that the total direct and indirect emissions would not exceed the emissions budgets specified in the applicable SIP.</li> <li>• Obtain a written commitment from the State to revise the SIP to include the emissions from the action.</li> <li>• Fully offset the total direct and indirect emissions by reducing emissions of the same pollutant or precursor in the same non-attainment or maintenance area.</li> </ul> <p>The option applicable to this project is to obtain a written commitment from the State Governor or the Governor's designee for SIP actions, as described in 40 CFR §93.158(a)(5)(i)(B), to revise the SIP to achieve the needed emission reductions prior to the time emissions from the Federal action would occur, such that total direct and indirect emissions from the action do not exceed the 2011 SIP emissions budgets.</p> <p>An analysis of the project's estimated emissions was conducted by SMAQMD, in coordination with CARB and USEPA. This analysis indicated that the project's emissions could be included in the 2011 SIP emissions budget. SMAQMD prepared a conformity analysis which is included with this SEIS/EIR as Appendix B. In order to comply with SMAQMD's analysis, the Corps has committed to use the following mitigation measures to reduce the total project NOx, PM10, and PM2.5 emissions:</p> |                       |                            | emissions budget and implement required Air Quality mitigation measures stated within Section 4.2.7 (Air Quality mitigation measures) of the Final SEIS/EIR. |

| Section and Impacts                                                                                                                                                                                                                   | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|----------------------------------------------------|
|                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Off-road construction equipment complying with the LACMTA Green Construction Policy. Use Tier 3 off-road equipment for first two years of construction (2013-2014) and Tier 4 off-road equipment beginning 2015.</li> <li>Marine engines complying with USEPA Tier 2 and Tier 3 engine standards. Use Tier 2 marine engines for the first two years of construction (2013-2014) and Tier 3 marine engines beginning 2015.</li> <li>Use of model year 2010 or newer haul trucks beginning in 2013.</li> <li>Electrification of concrete batch plant and rock crushing plant.</li> <li>Fugitive dust controls which include watering controls on blasting operations, unpaved roads, excavation, wet suppression on stockpiles, and speed control.</li> <li>Ensure that air pollution specifications are incorporated into all construction contracts. Those specifications will require that contractors limit annual emission to levels that do not exceed the annual estimates shown in Table 23 (for Alternative 2) or Table 28 (for Alternative 3).</li> </ul> |                       |                            |                                                    |
| 4.3.4 Climate Change                                                                                                                                                                                                                  | Implementations of the mitigation discussed in the air quality analysis (Section 4.2.7), including the use of the LACMTA Green Construction Policy requirements for the on-site construction off-road equipment would further reduce                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | C                     | Contractor/<br>the Corps   | CVFPB will verify LACTMA Green Construction Policy |
| The project would emit GHGs from construction activities due to fuel combustion from onsite construction vehicles, worker vehicles for workers commuting to and from the project, and indirect emissions from the electricity used to |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                       |                            |                                                    |

| Section and Impacts                                | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                                                                                                              |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operate the rock crusher and concrete batch plant. | <p>the GHG emissions associated with this project (LACMTA 2011). In addition, SMAQMD recommends the following mitigation measures for reducing GHG emissions from construction projects. The use of electric equipment is already listed above and will reduce direct GHG emissions from fuel-based equipment. The Corps will implement the following mitigation measures:</p> <ul style="list-style-type: none"> <li>• Improve fuel efficiency from construction equipment: <ul style="list-style-type: none"> <li>o Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes (5 minute limit is required by the state airborne toxics control measure [Title 13, sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.</li> </ul> </li> </ul> <p>The following mitigation measures are relevant to impacts, but will likely not be required by the Corps. However the selected contractor will be encouraged to implement these measures where practicable:</p> <ul style="list-style-type: none"> <li>o 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.</li> <li>o Train equipment operators in proper use of equipment.</li> </ul> | C                     |                            | <p>requirements, air quality mitigation measures, electrification of concrete batch plant &amp; rock plug, and practicable mitigation measures are being implemented.</p> <p>CVFPB will verify if practicable GHG reducing measures are implemented.</p> |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Implementation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------|----------------------------------------------------------|
|                     | <ul style="list-style-type: none"> <li>o Use the proper equipment size for the job.</li> <li>o Use equipment with new technologies (repowered engines, electric drive trains).</li> <li>• Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).</li> <li>• Use a CARB approved low carbon fuel for construction equipment. (NO<sub>x</sub> emissions from the use of low carbon fuel must be reviewed and increases mitigated.)</li> <li>• Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.</li> <li>• Recycle or salvage non-hazardous construction and demolition debris (goal of at least 75% by weight).</li> <li>• Use locally sourced or recycled materials for construction materials (goal of at least 20% based on costs for building materials, and based on volume for roadway, parking lot, sidewalk and curb materials). Wood products utilized should be certified through a sustainable forestry program.</li> <li>• Produce concrete on-site if determined to be less emissive than transporting ready mix.</li> <li>• Use SmartWay certified trucks for deliveries and equipment transport.</li> <li>• Develop a plan to efficiently use water for adequate dust control.</li> </ul> |                          |                                  |                                                          |



| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Implementation Timing | Responsible for Mitigation       | Responsible for Monitoring/Reporting Action                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>4.4 Water Quality</p> <p>1) Long term changes to the rate and amount of surface runoff in the form of hydromodification could potentially affect local drainages.</p> <p><b>Construction activities</b></p> <p>2) Project activities may disturb or mobilize sediments which have the potential to affect total suspended solids, pH, turbidity, and dissolved oxygen. Re-suspension of sediments may affect the concentrations of metals in the water column releasing metals that are present in lake sediments from both natural and human sources.</p> <p><b>Construction activities in the dry</b></p> <p>3) Project activities (construction and excavation) occurring in the dry would have short term impacts on water quality from ground disturbing activities. Exposed soil could potentially erode as a result of significant runoff events causing turbidity in local waterways. In addition, debris, inadvertent spills of fuels, oils or concrete mix materials from construction equipment, work areas, staging areas, or the concrete batch plant could be a source of contamination into adjacent waterways.</p> <p><b>Construction activities in the wet</b></p> | <p>Implementation of the below mitigation measures by the contractor would reduce the significant impacts on water quality, and jurisdictional waters to a less than significant level. Compliance and evaluation as a part of the provisions stated for the various permits discussed below would serve to minimize and mitigate potential hydrologic impacts due to construction activities.</p> <p>The contractor would be required to obtain an NPDES Construction Storm Water Permit from the CVRWQCB, because the project would disturb more than one acre of land. Across the entire construction site, debris, soil, or oil and fuel spills could temporarily adversely affect the water quality of Folsom Lake and the Lower American River (including Lake Natoma) downstream. The construction storm water permit pertains to the prevention of increased turbidity of adjacent waterways as resulting from site erosion and sedimentation, as well as debris, soil, fuel, and oil spill prevention. The contractor would be required to design and implement a SWPPP prior to initiating construction activities, and to implement standard BMPs (see "Mitigation" below). There is also a potential for fugitive dust and construction runoff to enter waterways due to soil excavation, equipment use, cutoff wall construction, and movement of trucks in the project area and along the haul routes. However, frequent watering of haul routes, proper coverage and control of material stock piles (e.g. dirt, aggregate, etc.), and the installation of K-rails to prevent any construction related materials or vehicles from entering the waterways, would help to prevent such pollution impacts. All these measures would be required of the contractor.</p> <p>The NPDES Industrial Storm Water Permit requires that a</p> | <p>D,C</p> <p>D,C</p> | <p>Contractor/<br/>the Corps</p> | <p>CVFPB will verify that the contractor has obtained permits and is implementing required BMPs, SWPPP and mitigation measures associated with these 3 NPDES permits: 1) construction storm water permit, 2) Industrial storm water permit, and the 3) limited threat discharge permit.</p> <p>CVRWQCB will ensure compliance with Section 401 permit. CVFPB will verify the Corps has obtained the Section 401 permit and is complying with</p> |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>4) Project activities occurring in the wet (dredging, construction, disposal, and blasting) could have short term impacts on water quality. Potential dredging of material for the haul road embankment, transload facility ramp, and spur dike have the potential to cause turbidity in Folsom Lake, affecting water quality and the potential for bioaccumulation of mercury.</p> <p><b>Construction of project features</b></p> <p>5) Construction and removal of the transload facility, haul road embankment, and the construction of the spur dike would require materials to be placed directly into the water.</p> <p>6) Construction of the transload facility, haul road embankment and the spur dike would raise local bed elevation by as much as 60 ft causing a change in the relative abundance of habitat types available at various reservoir levels affecting local benthic organisms.</p> <p><b>Disposal</b></p> <p>7) Approximately 400,000 cy of material from the approach channel would be removed during in-the-wet conditions. The in-the-wet excavation activities (dredging and blasting) have the potential to create substantial turbidity, thus affecting water temperature and dissolved oxygen concentrations. These activities also have the potential to mobilize existing contaminants such as mercury with potential for the bioaccumulation of mercury in the aquatic environment.</p> | <p>SWPPP is designed and implemented, and is specific to the concrete batch plant operation. Pertaining to the concrete batch plant site, debris, oil and fuel, or concrete mix material spills could temporarily adversely affect the water quality of Folsom Lake and the Lower American River (including Lake Natoma) downstream. The industrial storm water permit addresses potential pollution inputs due to storm water runoff that are associated with all activities at the concrete batch plant. The contractor would be required to cover and control all material stock piles in order to prevent suspension of dust or concrete mix material due to wind. The contractor would also be required to coordinate the handling of all waste waters generated from concrete production with the CVRWQCB.</p> <p>In accordance with the NPDES Limited Threat Discharge Permit, groundwater must be tested for priority pollutants prior to dewatering activity in order to determine if any treatment would be required before discharging into Folsom Reservoir. Once cleared for dewatering, periodic, routine, and standardized sampling of the groundwater must be conducted before discharge into Folsom Reservoir occurs. This routine sampling ensures that the groundwater either meets or exceeds the water quality standards listed for beneficial uses of Folsom Reservoir and the Lower American River. Groundwater would be pumped into a holding tank where it is to be tested to meet water quality standards before being surface-discharged into Folsom Reservoir. All mandatory groundwater samples analyzed, both prior to commencement of dewatering activity and during ongoing dewatering operations, must be conducted by a State Certified Lab and meet the Reporting Minimum Levels.</p> <ul style="list-style-type: none"> <li>An NPDES permit would be obtained prior to construction activities, commencing by filing a Notice of Intent (NOI) with the CVRWQCB and</li> </ul> | D, C                  |                            | <p>the requirements throughout the project.</p> <p>CVFPB will verify dewatering permit is obtained and requirements are being met. Requirements include implementing a water quality monitoring plan by a qualified water specialist during dewatering activities.</p> |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Implement<br>ation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------|----------------------------------------------------------|
| <p>8) Dredged and excavated material that is not used for spur dike construction would be disposed at one of the proposed disposal sites, including potentially the in-reservoir disposal site.</p> <p>9) Benthic organisms would be smothered by the discharge of dredged material at the in-reservoir disposal site.</p> <p>10) Disposal material mechanically dredged, barged, and then placed in water have the potential to create turbidity.</p> <p>11) Disposal material may be transported via barge and then trucked to upland placement sites creating the risk for potential turbidity and sediment releases into the reservoir.</p> <p>12) Excavated material may be disposed of at on land disposal sites.</p> <p><b>Impacts to the waters of the United States (U.S.)</b></p> <p>13) Disposal of material into jurisdictional water will have permanent effects of 9 acres at the spur dike, and 2.5 acres of transitional wetlands at Dike 8. Disposal of material into jurisdictional waters will have temporary effects on 2.5 acres at the transload facility, 1 acre at the haul road embankment, and 85 acres of open waters into Folsom lake.</p> | <p>preparing a SWPPP. As required under the General Permit, the SWPPP would identify implementation measures necessary to mitigate potential construction-related water quality concerns. These measures would include BMPs and other standard pollution prevention actions such as erosion and sediment control measures, proper control of non-stormwater discharges, and hazardous spill prevention and response. The SWPPP would also include requirements for BMP inspections, monitoring, and maintenance. The NOI indicates the intent to comply with the General Permit which outlines conditions to minimize sediment and pollutant loading. The following items are examples of BMPs that would be implemented during construction:</p> <ul style="list-style-type: none"> <li>o Erosion control BMPs such as use of mulches or hydro seeding to prevent detachment of soil following guidance presented in the California BMP Handbooks – Construction (CASQA 2003). A detailed site map would be included in the SWPPP outlining specific areas where soil disturbance may occur, and drainage patterns associated with excavation and grading activities. In addition, the SWPPP would provide plans and details for the BMPs to be implemented prior, during and after construction to prevent erosion of exposed soils and to treat sediments before they are transported offsite.</li> <li>o Sediment control BMPs such as silt fencing or detention basins that trap soil</li> </ul> |                              |                                  |                                                          |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Implementation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------|----------------------------------------------------------|
|                     | <p>particles.</p> <ul style="list-style-type: none"> <li>o Construction staging areas designed so that stormwater runoff during construction would be collected and treated in a BMP such as a detention basin.</li> <li>o Management of hazardous material and wastes to prevent spills.</li> <li>o Vehicle and equipment fueling BMPs so these activities occur only in designated staging areas with appropriate spill controls.</li> <li>o Maintenance checks of equipment and vehicles to prevent spills or leaks of liquids of any kind.</li> </ul> <ul style="list-style-type: none"> <li>• Measures to control on-site spills would be included in the SWPPP. In addition to the spill prevention and control BMPs presented above, the SWPPP would contain a visual monitoring program and a chemical monitoring program for pollutants that are non-visible to be implemented if there is a failure of BMPs. Proper storage and handling of materials and equipment servicing would only occur in designated areas. If a spill occurs, appropriate steps would be taken to inform local regulatory agencies as well as implementation of a spill response program as outlined in the SWPPP. The following BMPs would be implemented as part of the SWPPP and spill response program: <ul style="list-style-type: none"> <li>o All barge and boat maintenance activities would be conducted outside</li> </ul> </li> </ul> |                          |                                  |                                                          |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Implementation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------|----------------------------------------------------------|
|                     | <p>the reservoir, with appropriate hazardous material containment measures in place.</p> <ul style="list-style-type: none"> <li>o All hydraulic dredge hoses and lines would be regularly inspected for cracks and leaks and appropriately maintained to prevent contamination.</li> <li>o Drilling activities should not use ammonium nitrate fuel oil (ANFO) as it would dissolve in water and release ammonia and nitrates.</li> <li>o Contractors would submit plans for containment measures for drilling fluids caused by hose breaks and other sources, shut down and clean up of spills.</li> <li>o All terrestrial based construction equipment would be refueled and oiled at least one hundred feet from the reservoir high water mark with appropriate hazardous material containment measures in place.</li> <li>o All barges and boats would be clean before they are launched.</li> <li>o Refueling would be conducted outside the reservoir when practicable, with appropriate hazardous material containment measures in place.</li> </ul> <p>If on-shore refueling is not feasible, over-water refueling activities would include the following fuel and oil spill avoidance and minimization measures:</p> |                          |                                  |                                                          |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Implementation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------|----------------------------------------------------------|
|                     | <ul style="list-style-type: none"> <li>• A dedicated refueling area would be created. The refueling area would be located to minimize exposure to wind and waves, and would be equipped at all times with spill containment equipment, such as environmentally inert oil sorbent spill booms, absorbent pads, and appropriate waste disposal vessels to contain at least 100 gallons of fuel or oil.</li> <li>• At least two appropriate fire extinguishers would be easily accessible and prominently displayed on site.</li> <li>• Appropriate communication devices would be available at all times in case of emergencies.</li> <li>• Fuel would be stored in a double walled tank or other appropriate secondary containment structures.</li> <li>• Fueling would take place only under calm wind and wave conditions such that spilled fuel would be visible and recoverable.</li> <li>• If refueling activities would take place after sundown, adequate light would be used so that any spill would be easily visible.</li> <li>• If more than 55 gallons of fuels are stored onsite, the contractor would file a Hazardous Materials Business Plan with the county.</li> <li>• The refueling station would store less than 1,320 gallons of fuel above ground at any time. If storage of 11,320 gallons or more of fuels is required, the contractor would file a Spill Prevention, Control and Countermeasure (SPCC) Plan with the Regional Board.</li> </ul> |                          |                                  |                                                          |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|---------------------------------------------|
|                     | <ul style="list-style-type: none"> <li>During refueling operations, fuel bibs, fuel collars, fuel vent collection vessels, and/other appropriate spill minimization equipment would be used to prevent overflow fuel from reaching the water.</li> <li>In the event of a spill into the water, environmentally inert sorbent booms and absorbent material would be deployed by trained personnel to contain and clean up the spill. The spill would not be treated by the use of any agent which would disperse, emulsify or coagulate the spilled material.</li> <li>The discharge of any quantity of oil that violates state water quality standards, causes a film or sheen on the water surface, or leaves sludge or emulsion beneath surface would be reported immediately 24 hours a day to the U.S. Coast Guards National Response Center (NRC) at 1-800-424-8802 or 1-202-426-2675 and the USACE and the USBR.</li> <li>The Corps would obtain a Section 401 permit from the CVRWQCB and comply with all requirements of the permit to ensure compliance with Section 401 of the CWA.</li> <li>If water quality parameters for mercury exceed 0.05 mg/L (and as specified in the 401 Certification), additional response actions would be implemented to reduce parameters to threshold.</li> <li>Guidance would be obtained from the CVRWQCB for testing earthen materials before constructing or adjacent to the reservoir to ensure any potentially associated pollutants, particularly concrete or concrete runoff, would not be</li> </ul> |                       |                            |                                             |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Implement<br>ation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action                                                                                                                                                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <p>introduced into the reservoir that would violate water quality standards. Fill material would be placed in the reservoir during periods of lower water elevation, when possible. BMPs, as discussed in the 401 permit and 404 (b) (1) analyses (Appendix D), would be adhered to in order to minimize water quality impacts during the placement of fill in the reservoir. The Corps would obtain a dewatering permit from CVRWQCB and would implement applicable water quality monitoring by a qualified water quality specialist during dewatering activities.</p> <ul style="list-style-type: none"> <li>• Mitigation measures to minimize water quality impacts due to construction within and along the reservoir shoreline would be developed in consultation with CVRWQCB staff. These measures may include placement of a silt curtain surrounding the construction zone or construction of cofferdams. If appropriate, routine water samples would be collected at the start and completion of each dredging and/or blasting period. Water quality monitoring by a qualified water quality specialist would be performed outside the silt curtain to verify that they are effective at keeping turbidity, sediment, and associated pollutants from dispersing into the Lake. Water quality monitoring would involve grab sampling by boat during operations, and could also include deployment of continuous monitoring devices that log turbidity, conductivity, and pH. Those details would be worked out with the CVRWQCB through development of the SWPPP and monitoring plan.</li> <li>• A water quality monitoring plan would be</li> </ul> | <p>D</p> <p>D, C</p>         |                                  | <p>CVFPB will verify that a water quality monitoring plan has been reviewed by CVRWQCB prior to in reservoir construction work.</p> <p>CVFPB will verify the Corps has assisted USBR and initiated mitigation in 2013 for the 10 acres of riparian</p> |





| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|---------------------------------------------|
|                     | <p>The following mitigation measures are relevant to impacts, but will likely not be required by the Corps. However the selected contractor will be encouraged to implement these measures where practicable:</p> <ul style="list-style-type: none"> <li>• During the process of dredging material to construct the approach channel for the auxiliary spillway, sediment containing mercury would be controlled using a variety of methods, including, but not limited to, silt curtains, silt fences, as well as other BMPs and construction methods approved by the CVRWQCB.</li> <li>• Details on the proper use of silt curtains to protect water quality are available in guidance developed by the Corps Engineer Research and Development Center (Corps 2005). The following BMPs from this guidance should be considered during the use of silt curtains to ensure compliance with turbidity guidelines as established by the CVRWQCB: <ul style="list-style-type: none"> <li>o Silt curtains should be selected, designed, and installed to meet permit and water quality certification requirements where applicable.</li> <li>o Silt curtains should be designed to pass water either under or through their walls. Curtains are designed to confine suspended sediment and to allow it to settle or be filtered, not to impede the movement of water.</li> <li>o In applications where the curtain will be extended to the bottom of the waterway in moving water conditions, a heavy woven permeable filter fabric should be designed into the curtain to relieve</li> </ul> </li> </ul> |                       |                            |                                             |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|---------------------------------------------|
|                     | <p>pressure on the curtain wall.</p> <ul style="list-style-type: none"> <li>o In all but the slowest current flows, curtains will “billow out” in the downstream direction, allowing water to pass beneath the curtain, thereby reducing the effective skirt depth.</li> <li>o Extra length (up to 10 to 20 percent) and depth (slack) of curtains should be included in designs to allow for exchanges of water within the curtain.</li> <li>o Special designs may be required for applications of curtains at depths greater than 10 to 15 feet or with currents exceeding 1 ½ knots. At greater depths, loads or pressures on curtains and mooring systems become excessive and could result in failure of standard construction materials.</li> <li>o Minimize the number of joints in the curtain; a minimum continuous span of 15 m (50 feet) between joints is a “good rule of thumb.”</li> <li>o Curtains of a bright color (yellow or “international” orange) are recommended to enhance visibility for boaters.</li> <li>o Anchor lines should be attached to the flotation device, not to the bottom of the curtain.</li> <li>o Care should be taken during removal of silt curtains to avoid or minimize</li> </ul> |                       |                            |                                             |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|---------------------------------------------|
|                     | <p>resuspension of settled solids.</p> <ul style="list-style-type: none"> <li>o Removal of settled solids trapped by the silt curtain is optional and should only be considered if the resulting bottom contour elevation is significantly altered.</li> <li>o Designs should conform to relevant contract specifications and manufacturer recommendations and guidelines for installation and safety measures.</li> </ul> <ul style="list-style-type: none"> <li>• In addition to the above BMPs regarding silt curtains, the following could be implemented by the contractor, as needed, to further reduce turbidity: <ul style="list-style-type: none"> <li>o When dredging contaminated sediment, installing silt curtains within continuous or intermittent sheet pile walls to provide anchoring points has proven to be more effective than using silt curtains alone.</li> <li>o Aquatic habitat can be protected with deflection curtains provided they are properly designed and deployed, taking into consideration site-specific conditions.</li> </ul> </li> </ul> <p>Regular inspections would be performed to verify the integrity and proper installation of the silt curtains. In addition to the above-listed mitigation measures, an Adaptive Management Plan will be developed as a mitigation control measure to assist with the management of construction control BMPs and monitor the effects onto the aquatic environment. It is difficult to predict the precise effects construction activities would have on turbidity,</p> |                       |                            |                                             |



| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Water temperature increase; and</li> <li>Introduction of nonnative quagga or zebra mussels from marine vessels and nonnative and invasive vegetation.</li> </ul> <p><b>Turbidity</b></p> <ol style="list-style-type: none"> <li>Construction activities could create turbidity which could adversely affect fish health, mortality, reproduction and habitat.</li> <li>Dredging activities will increase turbidity and sedimentation which may negatively affect fish.</li> <li>Construction activities have the potential to negatively influence fish due to the concentration level of sediments and duration of turbidity.</li> <li>Persistent sedimentation and turbidity from in-water placement of fill, disposal, dredging and excavation will be high and exceed levels safe for fish health and habitat protection over the duration of in-water construction.</li> <li>Impacts to water quality and fish or aquatic habitat due to the increase sedimentation and turbidity.</li> <li>Incidental silt release at the bottom of the silt curtain could affect fish adjacent to the silt curtains.</li> <li>Fish could become entrained or entrapped</li> </ol> | <p>coordinated and approved by the Corps to reduce adverse blast effects to aquatic organisms.</p> <ul style="list-style-type: none"> <li>Surface fish kill would be collected to avoid bird scavenging and to conduct surface monitoring of fish. Assessment of numbers, size, and species would be conducted by a qualified fisheries specialist to provide an index of blast caused mortality. These results would be reported to CDFW within the first 24 hours after blasting.</li> <li>The contractor would record maximum water pressures achieved by the blast shots by a transducer recording system to ensure compliance with blast thresholds.</li> <li>Total mercury monitoring would be conducted for water and sentinel species by a qualified specialist. USFWS and regulatory agencies would be advised of levels in water and sentinel organisms.</li> <li>A monitoring plan would be implemented to evaluate turbidity effects on fish within the project area. Monitor turbidity levels at limnetic, profundal and benthic zones in the project area as specified by the CVRWQCB. Turbidity levels must not increase to effect summer salmon habitat in front of Folsom Dam. Additional monitoring of turbidity levels are to be conducted in front of Folsom Dam from June through October to ensure turbidity levels does not exceed CVRWQCB thresholds. This monitoring will be conducted by the Corps.</li> </ul> <p>Regulatory agencies and the Corps will implement a stocking program in Folsom Lake to compensate for lost angler opportunity and fish incurring mortality from project effects. At a minimum, approximately 6,000 catchable size</p> | C                     |                            | <p>the Corps has occurred.</p> <p>CVFPB will verify that a qualified fish specialist is conducting surface monitoring of fish kill.</p> |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <p>within the silt curtains.</p> <p>8) Aquatic populations in Folsom reservoir can be negatively affected by increased turbidity.</p> <p>9) Transportation of fill across the reservoir on barges creates risk for potential sediment releases into the reservoir.</p> <p>10) Water temperature increases due to turbid water is possible inside and outside the silt curtains which may or may not negatively affect fish in the immediate area.</p> <p>11) Construction activities have the potential to produce substantial turbidity and sedimentation that may violate water quality thresholds that address aquatic protection</p> <p><b>Bioaccumulation</b></p> <p>1) Construction activities have the potential to increase methylmercury concentrations in aquatic organisms and Folsom reservoir fish populations which can create indirect effects on fisheries and human health.</p> <p><b>Blasting and Acoustic Actions</b></p> <p>1) Underwater sound from blasting and construction activities/equipment has the potential to adversely affect fish inhabiting Folsom Lake. Acoustic noise would result from blasting, marine engines, dredge equipment</p> | <p>triploid rainbow trout will be purchased by the Corps and stocked in Folsom Lake. Fish restocking numbers and species composition will be subject to change to compensate for mortality and recreational fishing losses.</p> <p>The following mitigation measures are relevant to impacts, but will likely not be required by the Corps. However, the selected contractor will be encouraged to implement these measures where practicable:</p> <ul style="list-style-type: none"> <li>Silt curtains should be installed at excavation, in-water disposal, dredging, blasting, and fill placement sites as a method to comply with CVRWQB Section 401 turbidity thresholds and exclude fish from the blast point. Use of this mitigation method will be decided by the contractor, but it is expected in order to achieve compliance with CVRWQCB Section 401 turbidity thresholds.</li> <li>Charges should be placed in drilled holes with stemming utilizing adequate angular material to reduce energy dispersal to the environment. Use of this mitigation will be decided by the contractor.</li> <li>The Blasting Plan should be designed to minimize the weight of explosive charges per delay and the number of days of explosive exposure. Use of this mitigation would be decided by the contractor.</li> <li>Explosives should be subdivided using delays to reduce total pressure. Use of this mitigation measure will be decided by the contractor. Where possible use decking in drill holes to reduce total pressure. Use of this mitigation measure would be decided by the contractor</li> <li>Use shaped charges for superficial charges to focus</li> </ul> | D, C                  |                            | CVFPB will verify if other practicable mitigation and BMPs are being implemented by the contractor to reduce effects to fish population. |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|---------------------------------------------|
| <p>scraping sediments, airlift use, and rock placement.</p> <p>2) The use of explosives can cause damage or mortality to aquatic organisms within the project area.</p> <p><b>Introduction of contaminants, fuel, and oil spills</b></p> <p>1) Construction activities have a higher risk for chemical contamination of aquatic life, due to the increased period of in-the- wet or underwater excavation, blasting and dredging.</p> <p><b>Physical Crushing</b></p> <p>1) Incidental physical crushing of fish could result from entrapment of fish and placement of fill material, dredging, air lift operation, and underwater blasting.</p> <p><b>Introduction of Nonnative and Invasive Species</b></p> <p>1) Due to the use of aquatic construction equipment and boats, there is the potential for nonnative quagga or zebra mussels and nonnative and invasive vegetation to be introduced into Folsom Lake Reservoir.</p> | <p>the blast energy, reducing energy released to the aquatic environment during demolition. Use of this mitigation will be decided by the contractor.</p> <ul style="list-style-type: none"> <li>Blasting arrays should be configured with maximum charge weights located in the middles of lesser charge weights as decided by the contractor.</li> <li>Conduct continuous monitoring on sublethal and lethal blast effects on fish. Conduct adaptive management to reduce effects of blasting on fish if significance thresholds for sublethal and lethal effects established by CDFW, USFWS and the Corps are exceeded.</li> <li>Bubble curtains are recommended for use during blasting and vibratory hammer use in under water construction. Bubble curtains, when effective, could reduce the velocity of sound waves and increase sound attenuation</li> <li>If bubble curtains are implemented, clean air compressors would be used without oil or contaminants.</li> <li>Acoustic fish scare methods are an option and may be used prior to blasting as a deterrent to fish within the blast affected area if determined to be effective. If pre-blast deterrence is used, non-detonated methods such as decompressed air are recommended; detonated blasts can cause harm to aquatic organisms are not recommended.</li> <li>Install and adjust silt curtains to prevent incidental fish passage. Erect additional barriers as needed to eliminate potential fish passage during installation and adjustment of silt curtains. Use</li> </ul> |                       |                            |                                             |



| Section and Impacts                                                                                                                                                     | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|---------------------------------------------|
|                                                                                                                                                                         | <p>effective acoustic noise where appropriate to discourage fish from the curtain area. Utilize other materials as necessary to prevent incidental fish passage.</p> <ul style="list-style-type: none"> <li>• When possible, schedule blasting during months when salmonids are using upstream tributaries (e.g. February through June for rainbow trout) and exclude blasting during summer months when some species (e.g. salmon) utilize colder water directly in front of the Folsom Dam. It is unlikely that this mitigation measure will be implemented due to project schedule constraints.</li> <li>• Blasting Methodology will be adapted to reduce game and native fish mortality if fish kill numbers are above an acceptable threshold established by regulatory agencies and the Corps.</li> <li>• Submerge the dredge cutterhead within the substrate to the maximum extent practicable when the dredge pumps are engaged, and utilize a slow rotation speed where feasible.</li> <li>• Utilize entrainment lessening equipment where applicable on hydraulic dredging apparatus to minimize fish kill.</li> <li>• Cutterheads would be no greater than 3 feet from the lakebed floor when cleaning the pipeline. Pipeline clearing will be kept to the minimum amount necessary.</li> </ul> |                       |                            |                                             |
| <p>4.6.4 Aesthetics and Visual Resources</p> <p>Direct effects from construction activities include the temporary effect of ongoing construction activities due to:</p> | <p>The primary effects described above are associated with the disposal of soil. There is the potential that some of this soil</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | C, M                  | Contractor/<br>the Corps   | CVFPB will verify that soil is being        |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Implement<br>ation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1) Equipment, boats, and haul trucks operating in the area</p> <p>2) Permanent effect on the change in shoreline due to construction of the approach channel and spur dike</p> <p>3) Potential permanent disposal of material in the proposed disposal areas</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>would be used by USBR for construction of a large landside berm at the auxiliary dam, however, it is assumed that not all of the material at the disposal sites would be reused. As a result, the excess material would be recontoured and landscaped to maintain visual consistency with the surrounding hills. The contractor would revegetate the disposal areas with native grasses to provide ground cover, erosion control, and to allow it to regain some aesthetic consistency with the surrounding areas.</p> <p>Additionally, since the approach channel is the final phase of the overall JFP, the haul road would be removed following project construction. The area would be regraded and revegetated with native grasses to return the area to a natural state consistent with the shoreline of Folsom Lake.</p> |                              |                                  | <p>used by USBR and that leftover soil has been recontoured and landscaped.</p> <p>Following construction, CVFPB will verify the contractor has revegetated with native grasses and the haul road has been removed.</p> |
| <p>4.7.4 Recreation</p> <p>1) During construction activities, waters surrounding the spur dike, approach channel, and transload facility would be excluded from public access due to safety concerns. Direct effects include limiting recreational activities to outside the boundary. Indirect effects will occur if those recreational activities are relocated to other local recreation areas increasing the usage and wear and tear on the facilities. In addition, upon completion of the project, the waters in front of the approach channel will remain blocked off from public use for security reasons.</p> <p>2) Folsom point would be temporarily closed for 1 day for 6-8 hours for the initial launch site to begin construction of the transload facility.</p> | <p>The following measure would be taken to keep the public informed of the project and reduce potential effects on recreational activities.</p> <ul style="list-style-type: none"> <li>To ensure public safety, warning signs and signs restricting access would be posted before and during construction, as necessary. Public outreach will be conducted through mailings, posting signs, coordination with interested groups, and meetings, if necessary, in order to provide information regarding changes to recreational access in and around Folsom Lake. Public outreach would also explain the purpose of the safety exclusion barrier around the blast site and the effects that underwater blasting can have on people if they are in the water and in range of the blast.</li> </ul>                                   | D, C                         | Contractor/<br>the Corps         | CVFPB will verify that safety measures are implemented. Safety measures include safety signs, public outreach and use of a safety exclusion barrier around the blast site.                                              |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|-----------------------------------------------------------------------------------|
| <p>3) Excavation of the approach channel and rock plug would require use of explosives causing temporary closure of Folsom Lake Crossing and the bike trail associated with Folsom Lake Crossing Bridge. Blasting events could occur every day up to twice per day over 44 months from February 2014 to August 2017 with the potential for up to 400 blasts in-the-wet and up to 200 blasts in-the-dry. Blasting events have the potential to last up to 2 hours and would be scheduled from 1:30 p.m. to 2:30 p.m. with additional provisions for a second blast from 10:00 a.m. to 11:00 a.m. This 2 hour period would allow for 30 minutes to close Folsom Lake Crossing road, 1 hour to conduct blasting, and 30 minutes to reopen the roadway.</p> <p>4) The proposed project would draw a construction workforce creating the potential need for worker vehicle parking areas.</p> | <ul style="list-style-type: none"> <li>At low water levels, a safety route and hazards will be marked for recreational boaters access into Folsom Point launch area as needed</li> <li>Workers will use staging areas for parking.</li> </ul>                                                                                                                                                                                                                                                                                                   |                       |                            |                                                                                   |
| <p>4.8.4 Traffic &amp; Circulation</p> <p>1) Construction activities will have temporary, direct effects on traffic and circulation in the project area by resulting in the growth of labor force accessing the site on a daily basis, and growth of truck trips due to the import of the aggregate material for the transload facility, spur dike and large deliveries.</p> <p>2) Traffic effects due to blasting operations of the proposed excavation for the approach channel and rock plug will cause the temporary closure of some roads estimated from Feb 2014 –</p>                                                                                                                                                                                                                                                                                                             | <p>Since there would be no significant effects on traffic and circulation, no mitigation would be required. However, the following measures would be implemented to avoid or minimize any effects, as well as ensure public safety on area roadways.</p> <ul style="list-style-type: none"> <li>The construction contractor would be required to prepare a traffic management plan, outlining proposed routes to be approved by the appropriate agencies, and implement the plan prior to initiation of construction. High collision</li> </ul> | D,C                   | Contractor/The Corps       | CVFPB will verify the contractor has an approved traffic management plan prior to |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| October 2017                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>intersections would appropriate local entity, and implement it be identified and avoided if possible. Drivers would be informed and trained on the various types of haul routes, and areas that are more sensitive (e.g., high level of residential or education centers, or narrow roadways).</p> <p>The construction contractor would develop and use signs to inform the public of the haul routes, route changes, detours, and planned road closures to minimize traffic congestion and ensure public safety.</p>                                                                                                                                                                                                                                                                                                                                                                                       | D,C                   |                            | <p>construction.</p> <p>CVFPB will verify that contractor has implemented public signs and traffic congestion is minimized.</p>                                                     |
| <p>4.9.4 Noise</p> <p>All Construction activities have the potential to be conducted during non-exempt hours. There are potential significant impacts if construction activities are conducted during non-exempt hours.</p> <p>Major noise contributing construction activities are defined as activities that generate noise levels of 35 dBA or higher any noise-sensitive receptors. The following activities are a brief description of such activities:</p> <ul style="list-style-type: none"> <li>At Folsom State Prison (MR-1a and MR-1b), it is assumed that the prison structures would provide a minimum of 30 dBA attenuation due to the concrete walls and small, thick glass windows. It is also assumed that the exterior concrete walls surrounding the prison facility would provide an additional 5 dBA of attenuation. Taking these assumptions into account noise levels at Folsom State Prison would not be significant.</li> </ul> | <p>The following measures would be implemented in order to reduce noise effects from general construction activities to less than significant. Any activity that would generate noise that could not be mitigated to less than significant would be conducted only during those hours when construction noise is exempt.</p> <ul style="list-style-type: none"> <li>Conduct the loudest construction activities during construction noise exempt hours, or as permitted by the city of Folsom. These activities include blasting, drilling, and dredging.</li> <li>Establish a noise monitoring program for construction activities that may exceed noise thresholds outside of construction noise exempt hours in order to maintain compliance with exterior noise standards and permits. See Appendix G for monitoring program guidelines.</li> <li>Maintain a standard 24 hour hotline for noise</li> </ul> | D, C                  |                            | <p>CVFPB will verify that a noise monitoring program for activities that may exceed non-exempt hour thresholds has been implemented by the contractor.</p> <p>CVFPB will verify</p> |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>At Tacana Drive and East Natoma Street (LT-2), drill and blasting and dredging rock in-the-wet, transload facility construction/removal, and Dike 7 staging area utilization activities would generate noise levels that exceed the 45 dBA L<sub>50</sub> nighttime exterior noise standard if the activities would be conducted individually. The major noise contributing activities at LT-2 would be Approach Channel/Spur Dike construction activities, transload facility construction/removal activities, and utilization of the Dike 7 staging area.</li> <li>At Mountain View Drive (LT-3), drill and blasting and dredging rock in-the-wet, transload facility construction/removal, and Dike 7 staging area utilization activities would generate noise levels that exceed the 45 dBA L<sub>50</sub> nighttime exterior noise standard if the activities would be conducted individually. The major noise contributing activities at LT-3 would be Approach Channel/Spur Dike construction activities, transload facility construction/removal activities, utilization of the Dike 7 and Overlook staging areas, and utilization of the Dike 8 disposal area.</li> <li>At East Natoma Street and Green Valley Road (LT-4), MIAD disposal and staging area utilization would generate noise levels that exceed the 45 dBA L<sub>50</sub> nighttime exterior noise standard if it was utilized without any other simultaneous construction activities. The major noise contributing activities at LT-4 would be Approach Channel/Spur Dike construction activities, transload facility construction/removal</li> </ul> | <p>complaints.</p> <ul style="list-style-type: none"> <li>Contractor would be responsible for maintaining equipment in best possible working condition.</li> <li>Each piece of construction equipment would be fitted with efficient, well-maintained mufflers.</li> <li>Schedule truck loading, unloading, and hauling operations during non-exempt construction hours as much as practicable.</li> <li>Locate construction equipment as far as possible from nearby noise-sensitive receptors. In particular, locating the batch plant at the Folsom Overlook staging area would reduce noise effects on sensitive receptors during non-exempt hours.</li> <li>Situate construction equipment so that natural berms or aggregate stockpiles are located in between the equipment and noise-sensitive receptors.</li> <li>Enclose pumps that are not submerged and enclose above-ground conveyor systems in acoustically treated enclosures.</li> <li>Line or cover hoppers, conveyor transfer points, storage bins and chutes with sound-deadening material.</li> <li>Acoustically attenuating shielding (barriers) and shrouds would be used when possible.</li> </ul> | <p>C</p> <p>C</p>     |                            | <p>a 24 hour hotline for noise complaints is established.</p> <p>CVFPB will verify maintenance checks for equipment have been done.</p> <p>CVFPB will verify that the loudest construction activities are conducted during noise exempt hours.</p> |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------|
| <p>activities, utilization of the Dike 8 disposal area, and utilization of the MIAD disposal and staging areas.</p> <ul style="list-style-type: none"> <li>At East of Folsom Auburn Rd. and Pierpoint Circle (LT-6), utilization of the Prison staging area would generate noise levels that exceed the 45 dBA L<sub>50</sub> nighttime exterior noise standard if it was utilized without any other simultaneous construction activities. The major noise contributing activities at LT-6 would be Approach Channel/Spur Dike construction activities, utilization of the Prison or Overlook staging areas, and transload facility construction/removal activities.</li> <li>At the Beal's Point Campground (ST-7), guests would be staying overnight. Drill and blasting and dredging rock in-the-wet construction activities would generate noise levels that exceed the 45 dBA L<sub>50</sub> nighttime exterior noise standard if it would be conducted by itself without any other simultaneous construction activities. The major noise contributing activities at ST-7 would be approach channel/spur dike construction activities, transload facility construction/removal activities, utilization of the Overlook staging area.</li> <li>At Folsom Point Park (ST-8), guests would not be staying overnight. Therefore, there are no anticipated noise impacts during non-exempt hours.</li> <li>At East Natoma Street and Briggs Ranch Drive (MR-9), transload facility construction/removal, Dike 8 disposal area utilization, and MIAD</li> </ul> | <ul style="list-style-type: none"> <li>Use blast mats to cover blasts in order to minimize the possibility of fly rock.</li> <li>For construction activities being conducted outside of construction noise exempt hours, the Contractor would obtain a permit from all nearby cities and counties in the vicinity of the project and maintain compliance with established limits.</li> <li>For drilling activities in the water, the use of down-the-hole-hammers are recommended, which produce much less noise than top-hammer drills from the striking bar.</li> </ul> | D, C                  |                            | CVFPB will verify that all required permits were obtained from nearby city and counties and are being complied with. |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mitigation Measures | Implementation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------|----------------------------------|----------------------------------------------------------|
| <p>staging and disposal area utilization activities would generate noise levels that exceed the 45 dBA L<sub>50</sub> nighttime exterior noise standard if the activities would be conducted individually. The major noise contributing activities at MR-9 are Approach Channel/Spur Dike construction activities, transload facility construction/removal activities, utilization of the Dike 8 disposal area, and utilization of the MIAD disposal and staging area.</p> <ul style="list-style-type: none"> <li>At Lorena Lane (MR-10), drill and blasting and dredging rock in-the-wet and Dike 7 staging area utilization activities would generate noise levels that exceed the 45 dBA L<sub>50</sub> nighttime exterior noise standard if the activities would be conducted individually. The major noise contributing activities at MR-10 would be Approach Channel/Spur Dike construction activities, transload facility construction/removal activities, utilization of the Dike 7 staging area, and utilization of the Overlook staging area.</li> <li>At Folsom Church of Christ (MR-11), drill and blasting and dredging rock in-the-wet, transload facility construction/removal, and Dike 8 disposal area utilization activities would generate noise levels that exceed the 45 dBA L<sub>50</sub> nighttime exterior noise standard if the activities would be conducted individually. The major noise contributing activities at MR-11 would be Approach Channel/Spur Dike construction activities, transload facility construction/removal activities, utilization of the Dike 8 disposal area, and utilization of the MIAD disposal and staging area.</li> </ul> |                     |                          |                                  |                                                          |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>4.10.4 Cultural resources</p> <ol style="list-style-type: none"> <li>1) Project activities could affect the eligibility listings for Folsom Dam, right and left wing dams</li> <li>2) Construction of the cutoff wall and removal of the rock plug could affect historic properties within the Area of Potential Effects (APE).</li> <li>3) Lower reservoir levels may expose previously unsurveyed areas. Excavation of material within these previously unsurveyed areas within the APE may expose historic properties.</li> <li>4) The placement of disposal material within the reservoir may affect CA-SAC-358H.</li> <li>5) Construction of the Approach channel, spur dike, and transload facility would result in additional permanent flood risk management features associated with Folsom Dam, Dike 7 and Dike 8.</li> </ol> | <p>The Corps has made preliminary determinations of eligibility for all of the known historic properties within the APE and those potentially affected by the proposed project. For those areas where survey of historic properties may still be completed, if historic properties are discovered they will need to be recorded and evaluated for their eligibility for listing in the NRHP prior to approval of the EIS/EIR. Additionally, if consultation with potentially interested Native Americans results in the identification of potential historic properties within the APE, recordation and evaluation of effects to those properties would also need to be completed prior to approval of the EIS/EIR. Those determinations will be sent to the State Historic Preservation Officer (SHPO) for comment and concurrence.</p> <p>If the SHPO concurs with the Corps' preliminary determinations that construction of the proposed project would have no adverse effects on historic properties there would be no need for mitigation measures.</p> <p>During inventory and evaluation efforts, if it is determined that a historic property may be adversely affected by the proposed project, a programmatic agreement or memorandum of agreement will be executed between the Corps and the SHPO in order to mitigate for adverse effects.</p> <p>However, 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.</p> | D, C                  | Contractor/<br>the Corps   | <p>CVFPB will verify that SHPO has provided concurrence. In the case that archaeological deposits are found during project activities, CVFPB will verify that all work has been stopped and discovery procedures are implemented pursuant to 36 CFR 800.13(b). Discoveries without Prior Planning.</p> <p>CVFPB will verify that record and evaluation procedures have occurred if historic properties are discovered during surveys of previously unsurveyed areas within the APE or</p> |



| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Mitigation Measures                                                                                                                                                                                                                                                                                                                                            | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|-----------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                |                       |                            | in consultation with potentially interested Native Americans.                           |
| <p>4.11.4 Topography and Soils</p> <p>There are no significant long term effects to topography and soils and therefore no mitigation is required. However, the following effects would occur due to project activities:</p> <ol style="list-style-type: none"> <li>1) Excavation of the approach channel would include permanently excavating the rock plug area, and would result in a permanent reduction of elevation of the shoreline.</li> <li>2) The construction of the spur dike would change the topography of a small portion of the Folsom Lake area (1%).</li> <li>3) Construction activities will 1) result in soil disturbance and replacement of soils with concrete, and 2) temporarily expose disturbed areas to erosion by wind or rainfall events.</li> </ol> | <p>There would be no significant long-term effects on topography and soils, therefore, no mitigation would be required.</p>                                                                                                                                                                                                                                    |                       |                            |                                                                                         |
| <p>4.12.4 Vegetation &amp; Wildlife</p> <ol style="list-style-type: none"> <li>1) Use of the Dike 8 disposal area would result in a total permanent loss of 15.8 acres of ruderal herbaceous, oak savannah, transitional wetland, and open water/ reservoir shoreline fluctuation zone habitats on the north of the dike. Associated with the loss of the habitat is the potential to remove up to 30 trees.</li> </ol>                                                                                                                                                                                                                                                                                                                                                          | <p>Mitigation measures have been implemented since the start of the Folsom JFP construction in 2008. The mitigation measures listed below would continue to be implemented throughout the final phase, as committed to in the 2007 FEIS/EIR and ROD.</p> <ul style="list-style-type: none"> <li>• To minimize dust impacts to wildlife, vegetation,</li> </ul> | D, C, M               | Contractor/<br>the Corps   | CVFPB will verify that measures identified in the 2007 FSEIS/EIR and ROD are being met. |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2) Use of the Dike 8 disposal site has the potential to affect a variety of wildlife species, including duck species and any amphibian species that use the transitional wetland habitat in the northern reach of the Dike 8 area.</p> <p>3) Use of the Dike 8 disposal site will result in the permanent loss of 2.5 acres of transitional wetlands.</p> <p>4) Use of the Dike 8 disposal site has the potential to affect nesting birds and raptors using this habitat.</p> | <p>and wetlands, unpaved access roads would be frequently watered with raw water using a sprayer truck during periods when trucks and other construction vehicles are using the roads, except during periods when precipitation has dampened the soil enough to inhibit dust. The speed limit on unpaved roads would be limited to avoid visible dust.</p> <ul style="list-style-type: none"> <li>• Prior to bringing in equipment from other sites, contractors will clean all mud, soil, and plant/animal material from the equipment. This will help prevent the importation of plants that are exotic or invasive.</li> <li>• The contractor will avoid impacts to native trees, shrubs, and aquatic vegetation to the greatest extent possible and that construction is implemented in a manner that minimizes disturbance of such areas to the extent feasible. Temporary fencing shall be used during construction to prevent disturbance of native trees that are located adjacent to construction areas but can be avoided. The contractor will coordinate with Corps Biologist prior to beginning work.</li> <li>• A Revegetation Plan would be developed to address potential losses to all habitats impacted within the project footprint. The Revegetation Plan would be implemented immediately following construction in accordance with requirements in the SWPPP, Planning Aid Letter, and Mitigation, Monitoring, and Reporting Plan (MMRP).</li> </ul> <p>In addition, mitigation for the permanent loss of habitat discussed above would be required. This mitigation would</p> |                       |                            | <p>CVFPB will verify that mitigation for permanent loss of habitat is being conducted according to the CAR.</p> <p>CVFPB will verify that a qualified botanist is monitoring for invasive and non-native species for five years following completion of the project.</p> <p>CVFPB will verify the mitigation is occurring in cooperation of USBR.</p> |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                                                                                                                                   |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <p>be conducted in accordance with the recommendations provided in the Coordination Act Report. The final Coordination Act Report is included in Appendix I. The final Coordination Act Report outlines the specific mitigation requirements for the removal of trees and loss of habitat.</p> <ul style="list-style-type: none"> <li>• All disturbed areas outside the reservoir area would be reseeded with forbs and grasses at the completion of construction.</li> <li>• Pre-construction surveys for active nests along proposed construction site, haul roads, staging areas, and disposal/stockpile sites would be performed by a qualified biologist. 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.</li> </ul> <p>Note: A focused survey for Swainson's hawk nests would be conducted by a qualified biologist during the nesting season (February 1 to August 31) to identify active nests within 0.25 miles of the project area. The survey would be conducted no less than 14 days and no more than 30 days prior to the beginning of construction. If nesting Swainson's hawks are found within 0.25 miles of the project area, no construction would occur during the active nesting season of February 1 to August 31, or until the young have fledged (as determined by a qualified biologist), unless otherwise negotiated with the California Department of Fish and Wildlife (CDFW) (previously name was California Department of Fish and Game). If work is begun and completed between September 1 and February 28, a survey is not required.</p> <ul style="list-style-type: none"> <li>• Any native trees or shrubs removed with a</li> </ul> |                       |                            | <p>CVFPB will verify purchase of the 2.5 acres of seasonal wetland has occurred or that appropriate mitigation measures are applied after completion of project.</p> <p>CVFPB will verify the Corps has coordinated with USBR and Sacramento County for site restoration.</p> |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Implementation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------|----------------------------------------------------------|
|                     | <p>diameter at breast height of 2 inches or greater should be replaced on-site, 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.</p> <p>The Corps would compensate for the loss of the 30 trees at Dike 8 with a diameter at breast height (dbh) of 2 inches or greater known to be lost by the project by planting 3,134 seedlings (live and valley oaks, cottonwoods) on a 13.34 acre site(s). Development of this site would be coordinated with the Service and CDFW. These plantings should be monitored for 5 years or until they are determined to be established and self-sustaining. The planting site(s) would be protected in perpetuity. The compensation was derived by totaling the dbh of the 30 impacted trees (783.5 inches) and multiplying it by 4 (assumes each seedling is ¼-inch in diameter) to get 3,134 trees. The area (13.34 ac) was based on planting densities used for oak woodland on other Corps projects that were 235 plants per acre.</p> <p>All revegetated or disturbed areas would be monitored annually by the Corps for invasive non-native plant species, particularly French broom and pampas grass, for five years following completion of construction, with the assistance of a qualified botanist. If invasive species are becoming established on areas disturbed by project activities during the five-year period, invasive species would be removed at times that preclude the plants from setting new seed.</p> <ul style="list-style-type: none"> <li>The Corps would compensate for the loss of three acres of open water/ reservoir shoreline</li> </ul> |                          |                                  |                                                          |

| Section and Impacts                                                                                                                                                                                                                                                                                                                                                      | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|---------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                          | <p>fluctuation zone by assisting USBR with restoration at Mississippi Bar or purchasing credits at a mitigation bank.</p> <ul style="list-style-type: none"> <li>To mitigate for the 2.5 acres of transitional wetlands associated with fill placement at Dike 8, the Corps would purchase 2.5 acres of seasonal wetlands at a Corps approved mitigation bank.</li> <li>In the event that mitigation is not initiated within this two-year period, the mitigation ratios would increase by 0.5:1 if initiated within two to five years, and by 1:1 if mitigation is initiated more than five years after the permanent or temporary impacts occur</li> </ul> <p>The Corps would coordinate with Reclamation and Sacramento County on the site restoration, as necessary. Any additional mitigation that could not be conducted on site would be accomplished by purchasing credits at a USFWS approved mitigation bank. A summary of the preliminary USFWS recommendations are included in Section 4.18.</p> |                       |                            |                                             |
| <p>4.13.4 Special Status Species</p> <p>1) Use of the proposed Dike 8 disposal area would result in direct and indirect effects to the four elderberry shrubs. Direct effects would include removal or trimming of the shrubs. Indirect effects, if the shrubs are not removed, would include physical vibration and an increase in dust during disposal activities.</p> | <p>If the proposed Dike 8 disposal site would be used during project construction, consultation would be initiated with USFWS and CDFW to assess the impacts discussed above and determine appropriate mitigation measures. The following mitigation measures would be proposed by the Corps during consultation to reduce the potentially significant effects associated with the Dike 8 disposal area to less than significant.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                       |                            |                                             |

| Section and Impacts                                                                                                                                                                                                                                                                                          | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2) Use of the proposed Dike 8 disposal area could potentially result in direct and indirect effects to the white-tailed kite if they begin nesting in the area. Construction activities in the vicinity of a nest have the potential to result in forced fledging or nest abandonment by adult kites.</p> | <p><b><u>Valley Elderberry Longhorn Beetle</u></b></p> <p>The Corps would compensate for the loss of the four elderberry shrubs, if they are removed. The four elderberry shrubs would be transplanted to USFW approved location and monitored for 5 years. Compensation would also consist of planting elderberry shrubs and associated natives at an existing Corps mitigation site in the American River Parkway or purchasing credits at a USFWS approved mitigation bank. If the shrubs are not removed, and the proposed Dike 8 disposal area is used, the following measures taken from the USFWS "Conservation Guidelines for the Valley Elderberry Longhorn Beetle," July 1999 would be incorporated into the project to minimize potential take of the VELB:</p> <ul style="list-style-type: none"> <li>• A minimum setback of 100 feet from the dripline of all elderberry shrubs will be established, if possible. If the 100 foot minimum buffer zone is not possible, the next maximum distance allowable will be established. These areas would be fenced, flagged, and maintained during construction.</li> <li>• Environmental awareness training would be conducted for all workers before they begin work. The training would include status, the need to avoid adversely affecting the elderberry shrub, avoidance areas and measures taken by the workers during construction, and contact information.</li> <li>• Signs would be placed every 50 feet along the edge of the elderberry buffer zones. The signs</li> </ul> | D, C, M               | Contractor/<br>the Corps   | CVFPB will verify that compensation for elderberry shrubs has occurred if removed or that minimization measures are implemented if shrubs are not removed. |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Implementation Timing | Responsible for Mitigation | Responsible for Monitoring/Reporting Action                                                                                                                                                                              |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <p>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.</p> <p>Impacts to VELB would be less than significant with implementation of the USFWS conservation guidelines for the beetle.</p> <p><b><u>White-tailed Kite</u></b></p> <p>The following mitigation measures would be implemented prior to use of the proposed Dike 8 disposal area to reduce potential adverse effects to white-tailed kites:</p> <ul style="list-style-type: none"> <li>• 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 CDFW and/or USFWS, and the proper avoidance and minimization measures would be implemented.</li> <li>• If a nesting pair is present, a biological monitor would be on-site during construction activities to ensure, in coordination with CDFW, that white-tailed kites are not adversely affected by project construction.</li> <li>• To avoid potential impacts to birds and raptor species, any trees that must be removed prior to</li> </ul> | D, C                  |                            | CVFPB will verify that a qualified biologist conducted a pre-construction survey, coordinated with the appropriate regulatory agencies where necessary, and implemented appropriate avoidance and minimization measures. |

| Section and Impacts | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Implementation<br>Timing | Responsible<br>for<br>Mitigation | Responsible<br>for<br>Monitoring/<br>Reporting<br>Action                                                                                                                                                                                                                                                                                  |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <p>use of the Dike 8 disposal area would be removed during the time period of August 15 to February 15. If trees must be removed outside of that timeframe, a qualified biologist must survey the area prior to tree removal to verify the presence or absence of nesting birds.</p> <p>With the implementation of these mitigation measures, effects to white-tailed kites associated with the proposed use of the Dike 8 disposal area would be less than significant.</p> |                          |                                  | <p>CVFPB will verify biological monitor on site during construction activities if a nesting pair of white tail kites are found.</p> <p>CVFPB will verify tree removal has been done during August 15-February 15. If not, then CVFPB will verify a qualified biologist has surveyed the trees to verify absence or presence of birds.</p> |

By: \_\_\_\_\_ Date: \_\_\_\_\_ By: \_\_\_\_\_ Date: \_\_\_\_\_

William H. Edgar

Jane Dolan

President

Secretary



Blank Page Left Intentionally

**Attachment F: Resolution 2013-04**

Blank Page Left Intentionally

STATE OF CALIFORNIA  
THE CALIFORNIA NATURAL RESOURCES AGENCY  
CENTRAL VALLEY FLOOD PROTECTION BOARD

RESOLUTION NO. 2013-04

FOLSOM DAM MODIFICATION PROJECT  
CERTIFICATION OF SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT/  
ENVIRONMENTAL IMPACT REPORT FOR THE CONSTRUCTION OF THE  
APPROACH CHANNEL  
FOLSOM, CALIFORNIA

**WHEREAS**, the Folsom Dam Modification Project is a Joint Federal Project (JFP) authorized by Congress in the Water Resources Development Act of 1999, and by the California legislature in Water Code Section 12670.14(c); and

**WHEREAS**, the JFP is a cooperative effort by the U.S. Department of the Interior, Bureau of Reclamation (Reclamation), U.S. Army Corps of Engineers (USACE), the Central Valley Flood Protection Board, and Sacramento Area Flood Control Agency (SAFCA) to improve dam safety and flood protection for the Sacramento area by making improvements to Folsom Dam and associated structures; and

**WHEREAS**, the Central Valley Flood Protection Board certified the Folsom Dam Safety and Flood Damage Reduction Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR) and approved the JFP in July 2007 (Reclamation/ Central Valley Flood Protection Board 2007), adopted findings, and adopted the mitigation and monitoring plan for which a Notice of Determination was filed July 27, 2007 with the State Clearinghouse; and

**WHEREAS**, the JFP consists of multiple actions over many years, with USACE, SAFCA, and the Central Valley Flood Protection Board responsible for the flood damage reduction portions, including: the control structure, chute, and stilling basin; and

**WHEREAS**, the 2007 FEIS/EIR contained a general evaluation of the auxiliary spillway, including: the control structure, the lining of the spillway chute, and stilling basin; these features and their potential impacts were analyzed based on the level of design available at that time; and

**WHEREAS**, project design refinements of the control structure construction, the six Tainter gates installation (a feature of the control structure), the lining of both the spillway chute and stilling basin, and the exploratory geotechnical borings that required additional environmental analysis and were evaluated in a Supplemental Environmental Assessment/Environmental Impact Report (SEA/EIR); and

**WHEREAS**, the Central Valley Flood Protection Board certified the Folsom Dam Safety and Flood Damage Reduction, Control Structure, Chute, and Stilling Basin Work 2010

Final Supplemental Environmental Assessment/ Environmental Impact Report (2010 FSEA/EIR) approving the design refinements to the JFP in August 2010 (USACE/ Central Valley Flood Protection Board), adopted findings, and adopted the mitigation and monitoring plan for which a Notice of Determination was filed August 31, 2010 with the State Clearinghouse; and

**WHEREAS**, the 2010 FSEA/EIR also evaluated the air quality, traffic, and noise effects of a concrete batch plant located at either the Folsom Overlook or inside the spillway chute; and

**WHEREAS**, the Central Valley Flood Protection Board certified the Folsom Dam Safety and Flood Damage Reduction, Prison Staging Area and Stilling Basin Drain Work 2012 Final Environmental Assessment/Environmental Impact Report (FSEA/EIR) approving the design refinements to the JFP in September 2012 (USACE/ Central Valley Flood Protection Board), adopted findings, and adopted the mitigation and monitoring plan for which a Notice of Determination was filed October 2, 2012 with the State Clearinghouse; and

**WHEREAS**, the 2012 FSEA/EIR established that an additional 10 acres of California Department of Corrections and Rehabilitation (CDCR) land, for which the Folsom State Prison is located, was needed for staging during concurrent construction of some of the features of the JFP; and

**WHEREAS**, the 2012 FSEA/EIR also determined that utilizing the CDCR land would necessitate: (1) installing a temporary traffic signal on Folsom Lake Crossing to ensure traffic safety; (2) widening an existing direct access road to allow for larger construction vehicles; (3) realigning the Folsom State Prison fence around the edge of the staging area; (4) and designing and constructing a stilling basin drain necessary to allow for the collected water in the stilling basin to flow back into the American; and

**WHEREAS**, the 2007 FEIS/EIR also contained a general evaluation of the approach channel and any associated features and the potential impacts were analyzed based on the level of design available at that time; and

**WHEREAS**, recent design refinement and construction methods to the approach channel would necessitate: (1) installation of a cutoff wall or cofferdam; (2) placement of fill material for a haul road; (3) excavation of an approximate 1,100 foot long approach channel upstream of the auxiliary spillway and control structure; (4) installation of the approach channel concrete slab and walls; (5) construction of a spur dike in the reservoir adjacent to the approach channel for hydraulic purposes; (6) stockpiling and disposal of excavated material at any of the four proposed potential disposal sites (Mormon Island Auxiliary Dam (MIAD), Dike 7, Dike 8, and spur dike); (7) construction of a temporary trans-load facility near Dike 7 for barge unloading of dredge material; (8) staging of contractor materials and equipment at any of the proposed locations (spillway excavation site, Folsom Overlook, MIAD, Dike 7, and/or Folsom Prison); (9) temporary installation of a concrete producing batch plant and/or rock

crusher at and of the proposed locations (spillway excavation site, Folsom Overlook, MIAD, and/or Folsom Prison) are evaluated in this 2012 Supplemental Environmental Impact Statement/Environmental Impact Report (2012 SEIS/EIR); and

**WHEREAS**, this 2012 SEIS/EIR (State Clearinghouse No. 2012072039) was circulated for public and agency review from July 25 to September 10, 2012, and responses to the comments received have been incorporated into the 2012 Final Supplemental Environmental Impact Statement/Environmental Impact Report (2012 FSEIS/EIR); and

**WHEREAS**, the Central Valley Flood Protection Board is the lead agency under the California Environmental Quality Act (CEQA) for the 2012 FSEIS/EIR; and

**WHEREAS**, a Statement of Findings for each potentially significant impact that would result from the construction of the JFP has been prepared and is attached to this Resolution.

**NOW, THEREFORE BE IT RESOLVED** that the Central Valley Flood Protection Board:

1. Has considered the 2012 FSEIS/EIR and finds, on the basis of the record as a whole, including comments and written responses received on the draft document and mitigation measures, that the 2012 FSEIS/EIR reflects the independent judgment of the Central Valley Flood Protection Board; and
2. Pursuant to CEQA Guidelines Section 15091, finds that changes and alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects identified in the 2012 FSEIS/EIR, in the attached Statement of Findings; and
3. Certifies this 2012 FSEIS/EIR has been completed in compliance with CEQA as the CEQA lead agency, adopts findings, and adopts the mitigation and monitoring plan; and
4. Approves the design refinements for the Folsom Dam Modification Project and delegates authority to the Executive Officer to execute the Notice of Determination.

**PASSED AND ADOPTED** by vote of the Board on \_\_\_\_\_, 2013.

\_\_\_\_\_  
William H. Edgar  
President

\_\_\_\_\_  
Jane Dolan  
Secretary

Approved as to Legal Form and Sufficiency

\_\_\_\_\_  
Jeremy Goldberg  
Senior Staff Counsel