M e m o r a n d u m

Date: January 17, 2019

To: Central Valley Flood Protection Board Members

From: Department of Water Resources

Subject: Folsom Dam Modification Project, Water Control Manual Update – Board Package

The Department of Water Resources, Flood Projects Office staff, working on behalf of the Central Valley Flood Protection Board (Board), recommend certification of the 2018 Supplemental Environmental Assessment / Environmental Impact Report (2018 SEA/EIR); adoption of the Resolution, Findings, Statement of Overriding Considerations, and Mitigation Monitoring and Reporting Plan; and execution of the Notice of Determination for the Folsom Dam Modification Project, Water Control Manual Update (Manual Update).

Background and Summary:
The 2018 SEA/EIR was prepared to analyze the environmental impacts associated with new operational changes established in the Manual Update for Folsom Dam and Lake. The purpose of the Manual Update is to fully realize the flood risk management and dam safety benefits of the recently completed auxiliary spillway (Joint Federal Project [JFP]), using Alternative 2 – Forecast Informed Operations with Variable Folsom Flood Control Space. The 2018 SEA/EIR is a supplemental supporting document to the 2007 Folsom Dam Safety and Flood Damage Reduction Environmental Impact Statement (EIS) / EIR, which evaluated the potential effects of construction of the auxiliary spillway but did not include a detailed analysis related to operations. The 2018 SEA/EIR focuses on potential impacts resulting from the Manual Update within the lower American River Watershed, but also includes an evaluation of impacts on the operation of the Central Valley Project / State Water Project system. The 2018 SEA/EIR was finalized in December 2018.

The attached documents summarize the 2018 SEA/EIR and conclude that while most environmental impacts will be less-than-significant, impacts to cultural resources will be significant and unavoidable.

If you have any questions or need additional information please contact Vance Cave, Project Manager, at 916-480-5343 or at Vance.Cave@water.ca.gov, or Lori Price, Environmental Lead, at 916-574-2310 or Lori.Price@water.ca.gov.

Board Packet for

Agenda Item 5F

Consider approval of Resolution No. 2019-02 to certify the Folsom Dam Modification Project, Water Control Manual Update Supplemental Environmental Assessment / Environmental Impact Report (SEA/EIR); adopt the Statement of Findings, the Statement of Overriding Considerations, and the Mitigation Monitoring and Reporting Plan; and execute the Notice of Determination.

Supplemental Environmental Assessment / Environmental Impact Report (SEA/EIR), Statement of Findings, Statement of Overriding Considerations, Mitigation Monitoring and Reporting Plan, and Notice of Determination

Folsom Dam Modification Project
Water Control Manual Update

Meeting of the Central Valley Flood Protection Board

January 25, 2019

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Meeting of the Central Valley Flood Protection Board
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Staff Report

Folsom Dam Modification Project, Water Control Manual Update Certification of Supplemental Environmental Assessment / Environmental Impact Report

1.0 ITEM

Consider adoption of Resolution 2019-02 (Attachment A) to:

1. Certify the Final Supplemental Environmental Assessment / Environmental Impact Report (SEA/EIR) (Attachment B);

2. Adopt the Statement of Findings (Attachment C);

3. Adopt the Statement of Overriding Considerations (Attachment C);

4. Adopt the Mitigation Monitoring and Reporting Plan (MMRP) (Attachment D); and

5. Delegate authority to the Executive Officer to execute the Notice of Determination (Attachment E).

2.0 SPONSORS

Federal:	U.S. Army Corps of Engineers and U.S. Bureau of Reclamation
State:	Central Valley Flood Protection Board
Local:	Sacramento Area Flood Control Agency

3.0 PROJECT LOCATION

The local project area for the Folsom Dam Modification Project, Water Control Manual Update (Manual Update) includes the lower American River Watershed in Placer, El Dorado, and Sacramento Counties, which comprises Folsom Dam and Lake, Nimbus Dam, Lake Natoma, and the lower American River to its confluence with the Sacramento River, approximately 30 miles downstream from Folsom Dam.

The regional assessment area for the Manual Update includes the facilities and service areas of the Central Valley Project and State Water Project; located primarily in the Central Valley and Sacramento-San Joaquin Delta areas.

4.0 PROJECT DESCRIPTION

The U.S. Army Corps of Engineers (USACE), U.S. Bureau of Reclamation (USBR), Central Valley Flood Protection Board (Board), and the Sacramento Area Flood Control Agency (SAFCA) propose to implement operational changes to fully realize the flood risk management and dam safety benefits of the Folsom Joint Federal Project (JFP).

The purpose of the Manual Update is to provide additional flood risk reduction and increased operational flexibility at the Folsom Dam and Lake facility. These modifications add flood damage reduction benefits, while still safely allowing passage of the probable maximum flood (PMF). The objectives include:

- Passing the PMF while maintaining at least three feet of freeboard below the top of the dam, to stay within the dam safety constraints of USBR.
- Control of a 1/100 annual chance flood event ("100-year flood") to the normal objective release of 115,000 cubic feet per second (cfs), as set by SAFCA to support Federal Emergency Management Agency (FEMA) levee accreditation along the American River.
- Control of a 1/200 annual chance flood event ("200-year flood") as defined by criteria set by the Department of Water Resources to a maximum release of 160,000 cfs.
- Reducing the variable space allocation from the current operating range of 400,000-670,000-acre feet (af) to an operating range of 400,000-600,000 af as directed in the Water Resources Development Act of 1999 authorizing language.
- Incorporating improved forecasting capabilities from the National Weather Service (NWS).

5.0 PROJECT BACKGROUND

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

Upon completion of the American River Watershed Long-Term Study in 2002, subsequent studies (known as the PASS studies [Project Alternatives Solution Study]) determined that the objectives for Folsom Dam flood damage reduction and dam safety could be met with a new auxiliary spillway and a three and one-half foot dam raise. The Folsom Dam Raise Project and the Folsom Modifications Project were reevaluated together in the March 2007 Post-Authorization Change Report for the American River Watershed Project. This report resulted in the recommendation of the JFP auxiliary spillway at Folsom Dam (to be constructed jointly with USBR), and a Folsom Dam Raise Project. The Folsom Dam Safety and Flood Damage Reduction Final Environmental

Impact Statement (EIS)/EIR for the JFP was certified and approved by the Board on July 27, 2007 (Resolution 07-03).

The Folsom JFP completed construction in October 2017. Per Section 101(e) of the Water Resources Development Act (WRDA) of 1999, USACE was directed by Congress to update the water control manual for Folsom Dam to fully realize the flood risk management and dam safety benefits of the JFP. Sections 101(b) and 101(e) of WRDA 1999 also directed USACE to reduce variable space allocation from the current interim operating range between 400,000 acre-feet (af) and 670,000 af, to a range between 400,000 af and 600,000 af, and to evaluate the feasibility of incorporating improved weather forecasts from the National Weather Service into an updated water control manual for Folsom Dam and Lake.

6.0 AUTHORITIES

Federal:

- Section 566 of the Water Resources Development Act of 1999 (P.L. 106-53)
- Section 128 of the Energy and Water Development Appropriations Act of 2006 (P.L. 109-103)
- Section 3029 of the Water Resources Development Act of 2007 (P.L. 110-114)

State:

- Water Code sections 12670.14 and 12670.16

7.0 FUNDING STATUS

Funds for updating the Water Control Manual are combined with project funds for the JFP. Total project costs are projected to be $854,053,000 with the USACE's share of such costs projected to be $555,140,000; the Non-Federal Sponsors' (Board and SAFCA, collectively) share of such costs projected to be $298,920,000; and the costs for betterments are projected to be $0. These amounts are estimates subject to adjustment by USACE, after consultation with the Non-Federal Sponsors, and are not to be construed as the total financial responsibilities of USACE and the Non-Federal Sponsors. If these projected amounts are to be increased, such increases shall be subject to the written consent of USACE, the Board and SAFCA.

8.0 PROJECT COOPERATION AGREEMENT AND LOCAL PROJECT COOPERATION AGREEMENT

The Project Cooperation Agreement (PCA) for the JFP/Manual Update established a 65 percent cost share between the Federal sponsor (USACE) and a 35 percent cost share between the Non-Federal sponsors.

The Local Project Cooperation Agreement (LPCA) for the JFP/Manual Update included a 70 percent State cost share and a 30 percent SAFCA cost share of the Non-Federal

sponsors' 35 percent cost share. The State has been providing 70 percent of the Non-federal share of total project costs, or approximately $209,250,000. The State cost-share will be paid from existing Proposition 1E bond funds and future general fund appropriations.

9.0 ENVIRONMENTAL ANALYSIS

The 2018 SEA/EIR is a supplemental supporting document to the 2007 Folsom Dam Safety and Flood Damage Reduction EIS/EIR, which evaluated the potential effects of construction of the JFP auxiliary spillway but did not include a detailed analysis related to its operations. The 2018 SEA/EIR was prepared jointly by USACE as the lead agency for National Environmental Policy Act (NEPA) compliance, and the Board as the lead agency for California Environmental Quality Act (CEQA) compliance. The SEA/EIR is comprised of: (1) a description of the existing environmental resources in the project area; (2) an evaluation of the impacts and significance of the action alternative on environmental resources; and (3) proposed measures to avoid, minimize, or mitigate any adverse effects to a less-than-significant level. The analysis concludes the following:

1. The proposed Project would have no impact on geology; topography; air quality; climate and climate change; traffic and circulation; noise/vibration; hazardous, toxic, and radiological waste; environmental justice; and aesthetics/visual resources.
2. The proposed Project would have a less-than-significant impact on hydrology/hydraulics; water quality; water supply and deliveries; hydropower production and distribution; and recreation; and a less-than-significant impact with the incorporation of avoidance and minimization measures on vegetation and wildlife; and fisheries.
3. The proposed Project will have significant and unavoidable impacts on cultural resources.

Recommended avoidance and minimization measures are included in the Final SEA/EIR (Attachment B) and the MMRP (Attachment D).

10.0 PUBLIC INVOLVEMENT

The Draft SEA/EIR was initially circulated for public review and comment for a period of 45 days between June 7, 2017 and July 21, 2017 (SCH # 2012102034). On June 6, 2017 a Notice of Availability (NOA) was filed with the State Clearinghouse. The NOA was published in The Sacramento Bee newspaper and posted at the County Clerk offices in Sacramento, Placer, and El Dorado counties. Hard copies of the SEA/EIR were made available for public review at the public libraries in Folsom, Placerville, and Roseville. An electronic version was posted on the USACE and Board websites. Public meetings were held on June 14, 2017 at the Sacramento City Library and on June 15, 2017 at the Folsom Community Center.

A total of eight comments were received from State, local, and non-governmental agencies. Comments received were addressed and incorporated into the Final SEA/EIR as appropriate.

11.0 STAFF RECOMMENDATION

Staff recommends that the Board:

Adopt:

- Resolution 2019-02 (Attachment A)

Certify:

- The Final SEA/EIR for the Folsom Dam Modification Project, Water Control Manual Update

Adopt:

- The Statement of Findings, (Attachment C)
- The Statement of Overriding Considerations, (Attachment C)
- The Mitigation Monitoring and Reporting Plan (Attachment D)

Delegate:

- The Executive Officer to execute the Notice of Determination (Attachment E).

11.0 LIST OF ATTACHMENTS

A. Resolution 2019-02

B. FINAL SEA/EIR (http://cvfpb.ca.gov/public-notices/)

C. Statement of Findings and Statement of Overriding Considerations

D. Mitigation Monitoring and Reporting Plan

E. Notice of Determination

Prepared By:	Vance E. Cave, PM; Lori Price Environmental Scientist
DWR Staff Review:	David Martasian, Kelly Briggs, Wilbur Huang, Todd Bernardy
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Board Staff:	Itzia Rivera
Board Legal Reviewers:	Jit Dua

STATE OF CALIFORNIA
THE NATURAL RESOURCES AGENCY
CENTRAL VALLEY FLOOD PROTECTION BOARD
RESOLUTION OF ADOPTION 2019-02
FOR THE CERTIFICATION OF THE FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT / ENVIRONMENTAL IMPACT REPORT FOR THE FOLSOM DAM MODIFICATION PROJECT, WATER CONTROL MANUAL UPDATE
FOLSOM, CALIFORNIA

BACKGROUND:

A. **WHEREAS**, the Folsom Dam Modification Project, Water Control Manual Update is a cooperative effort by the U.S. Army Corps of Engineers (USACE), the U.S. Bureau of Reclamation (USBR), the Central Valley Flood Protection Board (Board), and Sacramento Area Flood Control Agency (SAFCA) to provide flood risk protection for the Sacramento area by optimizing operations of the recently completed Joint Federal Project (JFP) auxiliary spillway; and

B. **WHEREAS**, Section 566 of the Water Resources Development Act of 1999 (P.L. 106-53) and Section 128 of the Energy and Water Development Appropriations Act of 2006 (P.L. 109-103) authorized the Folsom Dam Modification Project and directed the USACE to conduct further studies; and

C. **WHEREAS**, the 2007 Post Authorization Change Report recommended authorization of the JFP and refined the Selected Plan; and

D. **WHEREAS**, construction of the JFP was authorized by Section 3029 of the Water Resources Development Act of 2007, P.L. 110-114; and

E. **WHEREAS**, the Board and SAFCA are authorized and empowered under their organizing acts and other state laws to participate in, fund, and carry out flood control activities; and

F. **WHEREAS**, the Board is the lead agency under the California Environmental Quality Act (CEQA) for the Folsom Dam Modification Project, Water Control Manual Update; and

G. **WHEREAS**, the Board certified the Folsom Dam Safety and Flood Damage Reduction Final Environmental Impact Statement / Environmental Impact Report (2007 Final EIS/EIR) and approved the JFP in July 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

H. **WHEREAS**, the 2007 Final EIS/EIR contained a general evaluation of the JFP, including: construction of the control structure, spillway chute, and stilling basin; and

I. **WHEREAS**, the 2007 Final EIS/EIR allowed for design refinements that may be required, and if necessary, provided provisions for preparation of supplemental environmental documents as required due to construction modifications or alterations; and

J. **WHEREAS**, updates to the Water Control Manual were not evaluated at a project level in the 2007 Final EIS/EIR and have since been determined; and

K. **WHEREAS**, the objective of the updates to the Water Control Manual is to implement operational changes to fully realize the flood risk management and dam safety benefits of the new JFP auxiliary spillway, through the implementation of Alternative 2 – Forecast Informed Operations with Variable Folsom Flood Control Space; and

L. **WHEREAS,** these operational changes were evaluated in the 2018 Folsom Dam Modification Project, Water Control Manual Update Final Supplemental Environmental Assessment / Environmental Impact Report (2018 Final Supplemental EA/EIR); and

M. **WHEREAS**, the Draft Supplemental EA/EIR was circulated for public and agency review from June 7 to July 21, 2017, with all responses to comments addressed and/or incorporated into the 2018 Final Supplemental EA/EIR; and

N. **WHEREAS**, a Statement of Findings for each potentially significant impact that would result from the implementation of the Water Control Manual Update has been prepared; and

O. **WHEREAS**, a Mitigation Monitoring and Reporting Plan summarizes the impacts, lists adopted mitigation measures, identifies timing of implementation, and establishes responsible party(ies) for implementation to avoid, minimize, or reduce any potentially significant environmental impacts; and

P. **WHEREAS**, pursuant to California Code of Regulations, title 14, division 6, chapter 3, (CEQA Guidelines) Section 15091, changes and alterations have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effects identified in the 2018 Final Supplemental EA/EIR; and

Q. **WHEREAS**, pursuant to CEQA Guidelines Section 15093, a Statement of Overriding Considerations for significant and unavoidable impacts that would result from the implementation of the Water Control Manual Update has been prepared; and

R. **WHEREAS**, the findings are set forth in the 2018 Final Supplemental EA/EIR, the Statement of Findings, the Statement of Overriding Considerations, and the Mitigation Monitoring and Reporting Plan.

NOW, THEREFORE, BE IT RESOLVED THAT THE BOARD:

1. Has independently reviewed and considered the 2018 Final Supplemental EA/EIR including comments and written responses received on the draft document and mitigation measures.

2. Finds that the 2018 Final Supplemental EA/EIR was prepared, published, circulated and considered in accordance with the requirements of the CEQA and the State CEQA Guidelines, constitutes an adequate, accurate, objective, and complete Final Supplemental EA/EIR in accordance with the requirements of CEQA and the State CEQA Guidelines, and reflects the independent judgment and analysis of the Board.

3. Certifies the 2018 Final Supplemental EA/EIR for the Folsom Dam Modification Project, Water Control Manual Update.

4. Adopts the Statement of Findings.

5. Adopts the Statement of Overriding Considerations.

6. Adopts the Mitigation Monitoring and Reporting Plan.

7. Delegates authority to the Executive Officer to execute the Notice of Determination.

PASSED AND ADOPTED by vote of the Board on _____, 2019.

By: _____
William Edgar
President

By: _____
Jane Dolan
Secretary

STATEMENT OF FINDINGS AND STATEMENT OF OVERRIDING CONSIDERATIONS FOR THE FOLSOM DAM MODIFICATION PROJECT – WATER CONTROL MANUAL UPDATE FOLSOM, CALIFORNIA

Project Description

The U.S. Army Corps of Engineers (USACE) Sacramento District, U.S. Bureau of Reclamation (USBR), State of California Central Valley Flood Protection Board (Board), and the Sacramento Area Flood Control Agency (SAFCA) propose to implement operational changes at Folsom Dam and Lake. In 2017, construction of the Joint Federal Project (JFP) auxiliary spillway at Folsom Dam was completed. The purpose of the JFP is to (1) reduce flood risk in the Sacramento Metropolitan Area in conjunction with other features of the regional flood risk management system, and (2) pass the Probable Maximum Flood (PMF) while maintaining at least three feet of freeboard from the top of the dam for dam safety purposes. The JFP was designed to improve the ability of Folsom Dam to manage large flood events by allowing more water to be safely released earlier in a storm event, resulting in more storage capacity remaining in the reservoir to hold back the peak inflow. This is accomplished through construction and operation of the new gated auxiliary spillway that is fifty feet lower in elevation than the gated spillways at Folsom Dam.

To fully realize the flood risk management and dam safety benefits of the new JFP, the Folsom Dam and Lake Water Control Manual (Manual Update/Project) must be updated by incorporating operations criteria with the JFP in place, in coordination with USBR, Board, the California Department of Water Resources (DWR), and SAFCA. The new set of reservoir operation rules were developed to meet, at a minimum, the following five primary dam safety and flood risk management objectives:

- Pass the PMF while maintaining at least three feet of freeboard below the top of dam to stay within the dam safety constraints of USBR.
- Control a 1/100 annual chance flood event (“100-year flood”) to the normal objective release of 115,000 cubic feet per second (cfs), as criteria set by SAFCA to support Federal Emergency Management Agency (FEMA) levee accreditation along the American River.
- Control a 1/200 annual chance flood event (“200-year flood”), as defined by criteria set by DWR to a maximum release of 160,000 cfs.
- Reduce the variable space allocation from the current operating range of 400,000-670,000 acre-feet (af) to 400,000-600,000 af, as authorized in the Water Resources Development Act (WRDA) of 1999.
- Incorporate improved forecasting capabilities from the National Weather Service (NWS).

To the extent possible, the Manual Update also complies with the other authorized purposes and operational criteria for Folsom Dam and Lake, including water supply, water quality, fish and wildlife preservation, hydropower, and recreation.

These Findings address the potential significant impacts associated with implementing the Manual Update. A joint Final Supplemental Environmental Assessment / Environmental Impact Report (2018 SEA/EIR) was prepared by USACE, Sacramento District as the federal lead agency under the National Environmental Policy Act (NEPA); and Board as the state lead agency under the California Environmental Quality Act (CEQA). The 2018 SEA/EIR is supplemental to the Folsom Dam Safety and Flood Damage Reduction Project Final Environmental Impact Statement/Environmental Impact Report (2007 FEIS/EIR), which evaluated the construction of the JFP but did not include a detailed environmental analysis of the operational changes.

The custodian of the CEQA record for Board is its Executive Officer, Leslie Gallagher, at the Central Valley Flood Protection Board Offices at 3310 El Camino Avenue, Room 170, Sacramento, California 95821.

Statement of Findings

The Final 2018 SEA/EIR identifies the following impacts as resulting from the Project. Impacts found not to be significant have not been included. Board, in its capacity as lead agency according to CEQA Guidelines Section 15091 makes the following Findings.

Vegetation and Wildlife

Impact – Modeling was conducted using the past 82 years of flow data compared to predicted future conditions with and without the Manual Update. Overall, releases from Folsom Dam under the new operations would result in a decrease in the frequency of low flow events (20,000-40,000 cfs); an increase in the frequency of mid-range flows (50,000-80,000 cfs); and a decrease in destructive high flow events (90,000-100,000 cfs). These changes, while observed through modeling, are below the five percent modeling significance threshold and are considered a negligible change. Therefore, vegetation and wildlife in the project area would continue to be influenced by conditions similar to the current flow regime, and there would be no impact on flow-dependent indicators such as cottonwood growth or backwater recharge.

Modeling of river bank erosion rates also showed a negligible change under the new operations. However, sediment transport is known to occur starting around 35,000 cfs; therefore, the predicted increase in the frequency of mid-range flows may result in increased erosion rates along the banks of the American River. The highest risk for erosion exists in the unarmored portions of the lower American River, and eventual completion of the American River Common Features Project levee improvements is expected to reduce this risk.

The American River Parkway is federally designated critical habitat for the Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (VELB) and the species has been recorded in riparian habitats along the lower American River. Erosive flows could result in a temporary

loss of habitat, although the eroded areas would also provide gaps that would promote natural recolonization by early successional vegetation, including the beetle's host plant. While the new operations are not expected to significantly affect the beetle or its habitat, the U.S. Fish and Wildlife Service (USFWS) requested monitoring of erosion rates and riparian habitat loss after large flows to ensure that impacts remain less than significant.

Finding – Changes and alterations to the Project are not necessary since implementation of the Manual Update would not significantly impact vegetation or wildlife. However, a monitoring program will be implemented to ensure that impacts remain less than significant and effects to VELB and its critical habitat do not exceed allowable limits as defined in the USFWS Biological Opinion (08FBDT00-2018-I-0171).

Statement of Facts – To ensure that impacts to vegetation and wildlife remain under significance thresholds, and that effects to VELB and its critical habitat do not exceed allowable limits as defined in the USFWS Biological Opinion, flow events with discharges that exceed 60,000 cfs shall be monitored to determine the amount of erosion and habitat loss that occurs in the lower American River. A report documenting the estimated amount of VELB take associated with any habitat loss will be provided to USFWS. As per the Biological Opinion, monitoring would cease if the results show that temporary habitat losses in river sub-reaches 7 and 8 (Watt Avenue to Paradise Beach) do not exceed 70 percent of the allowable take and if after five years, reinspection of the eroded areas shows that at least 50 percent of the area has revegetated naturally.

Fisheries

Impact – Modeling was conducted using the past 82 years of flow data compared to predicted future conditions with and without the Manual Update. In the lower American River Watershed, modeling indicated water temperatures would be slightly lower in late spring, summer, and early fall, and slightly higher in March and August with the new operations. These slight changes are under significance thresholds and are considered negligible.

As stated above, releases from Folsom Dam under the new operations would result in a decrease in the frequency of low flow events (20,000-40,000 cfs); an increase in the frequency of mid-range flows (50,000-80,000 cfs); and a decrease in destructive high flow events (90,000-100,000 cfs). Mobilization of spawning gravels begins to occur around 35,000 cfs, dependent on channel geometry; however, 50,000 cfs is considered the flow rate where mobilization is most likely to occur independent of channel geometry. Depending on the flow rate, flows that mobilize the riverbed can serve as flushing flows that remove buildup of silts, fines, and sands over spawning substrates, or redistribute gravels and cobbles, improving salmonid spawning habitat. Flows above 80,000 cfs, or repeated flow events in a single season, can lead to bed coarsening, which removes suitable material for spawning beds. Overall, the Manual Update will result in an increase in certain flow rates between 40,000 cfs and 80,000 cfs, and a decrease in high flow rates. The overall impact on spawning gravel mobilization compared to the existing condition is considered negligible.

Construction of the Folsom Dam essentially stopped the natural recruitment of gravels from upstream and has resulted in a degradational trend (bed coarsening) in river sub-reaches 1-4 (just below Nimbus Dam) and aggradation (sediment deposition) in the lower sub-reaches near the confluence of the Sacramento River. In response, in 2008 USBR implemented a gravel augmentation program on the lower American River under the Central Valley Project Improvement Act (CVPIA), which requires efforts to restore anadromous fish populations. The effort has continued every year since, except in 2015. The average annual placement is 10,000 cubic yards (cy) of spawning gravel material with a range of 5,000 cy to 35,000 cy. This program is an element of the existing condition within the project area but was not accounted for in the modeling results. With the implementation of the Manual Update, potentially increasing bed mobilizing flows is beneficial for moving and redistributing cobbles that have been placed in the riverbed, creating a more natural spawning habitat in the immediate vicinity. The decrease in coarsening flows should retain more of the augmented material within the lower American River system rather than being flushed out to the Sacramento River channel. This CVPIA spawning gravel effort is independent of the Manual Update, will continue into the future, and will continue to improve the spawning gravel volume and availability within the lower American River system. However, as part of the Project, this program will be supplemented for the potential loss of spawning gravel that could occur from increased mid-range flows (30,000-80,000 cfs) following implementation of the Manual Update. Therefore, the overall impacts to fisheries are considered to be less than significant with the continued implementation and supplementation of USBR's CVPIA spawning gravel augmentation program.

The American River is federally designated critical habitat for the California Central Valley (CCV) steelhead (*Oncorhynchus mykiss*) and the species is known to spawn in the river. While the new operations are not expected to significantly affect CCV steelhead or its habitat, the National Marine Fisheries Service (NMFS) has requested monitoring to evaluate movement of spawning gravel in the upper reaches of the lower American River to ensure that impacts remain less than significant.

Finding – Changes and alterations to the Project are not necessary since implementation of the Manual Update would not significantly impact fisheries. However, a monitoring program will be implemented to ensure that impacts remain less than significant and effects to CCV steelhead and its critical habitat do not exceed allowable limits as defined in the NMFS Biological Opinion (WCR-2018-10001).

Statement of Facts – To minimize potential impacts to fisheries, down-ramping rates have been incorporated into the Manual Update, such that flows between 8,000 cfs and 160,000 cfs will not decrease by more than 10,000 cfs over any two-hour period. The Manual Update will also include minimum flows as required by the Lower American River Flow Management Standard, as well as language that directs dam operators to consider measures to minimize impacts to CCV steelhead and its habitat when making operational decisions, to the extent possible. SAFCA will also supplement USBR's existing gravel augmentation program with approximately 300 short tons of spawning gravel ($20,000) for 15 years and establish or contribute to a 15-year monitoring program to evaluate spawning gravel movement in the upper reaches of the lower American River. USACE and USBR will also meet annually with NMFS and the California

Department of Fish and Wildlife to discuss the previous and upcoming flood management seasons in regard to potential impacts to fisheries from operations.

Cumulative Effects

CEQA requires the consideration of cumulative impacts of the proposed project combined with the impacts of other closely related past, present, and probable future projects in and around the project vicinity. CEQA Guidelines Section 15355 define cumulative effects as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts".

Cumulative effects were evaluated by identifying projects in and around the project vicinity that could have significant, adverse, or beneficial effects. Projects with the potential to contribute to cumulative effects that were considered include the Folsom Dam Raise, the American River Common Features General Reevaluations, and the West Sacramento Flood Control Project General Reevaluations. Overall, the cumulative effects were not found to be cumulatively considerable.

Statement of Overriding Considerations

The Final 2018 SEA/EIR concludes that implementing the Manual Update will result in potentially significant impacts to the environment that cannot be avoided or substantially lessened with the incorporation of mitigation measures or alternatives. This Statement of Overriding Considerations is therefore necessary to comply with CEQA Guidelines Section 15093.

Significant and Unavoidable Impacts

Cultural Resources

Impact – Potential historic properties may be present within the project area around Folsom Reservoir and along the American River. However, due to high water levels, identification efforts have not been completed. As such, it is not possible to determine if the Project may adversely affect historic properties prior to the approval of the Manual Update.

Within Folsom Reservoir, model results based on an 82-year period of record suggest that the new operations would result in generally more stable lake levels at Folsom Reservoir, which would decrease the rate of site decay through most of the reservoir drawdown zone. However, at water elevations between 426 feet and 430 feet, the model predicts an increase in wet/dry cycles that could increase degradation of any cultural resources located on the lakebed at those elevations.

The Manual Update would slightly increase the frequency of mid-range flows between 40,000 cfs and 80,000 cfs in the lower American River. Sediment transport is understood to begin around 35,000 cfs; therefore, the predicted increase in the frequency of mid-range flows may

result in increased bank erosion, which could further degrade cultural resources along the river banks. However, the American River downstream of Nimbus Dam is not equally susceptible to this increased erosion, and the highest erosion risk exists in the unarmored portions. The eventual completion of the American River Common Features Project levee improvements is expected to reduce this risk.

While the potential impacts to cultural resources have been modeled, the true extent of those impacts is unknown. Therefore, it is unclear if mitigation will or will not be required, or whether mitigation would reduce any impacts to less than significant. Under CEQA, a potentially significant impact is one that if it were to occur, would be considered a significant impact. Therefore, for CEQA purposes, impacts to cultural resources remain significant and unavoidable.

Finding – Changes and alterations have been incorporated into the Project which will mitigate, but will not avoid or substantially lessen, significant impacts identified in the Final 2018 SEA/EIR. Therefore, impacts to cultural resources are considered significant and unavoidable.

Statement of Facts – In compliance with the National Historic Preservation Act (NHPA) of 1966, as amended, when effects on historic properties cannot be fully determined prior to approval of an undertaking, a Programmatic Agreement (PA) may be used in order for the undertaking to be in compliance with the NHPA Section 106 process. The PA will stipulate the steps that would be taken to continue identification of historic properties, evaluation of effects, and a resolution to adverse effects (if required).

For this Project, impacts to cultural resources will be resolved through a PA. USACE is the lead Federal agency for the Section 106 process, and USBR, the California State Historic Preservation Officer, and the Advisory Council on Historic Preservation are signatories to the PA. Federally recognized and non-Federally recognized Native American tribes were invited to be involved in the PA process. To date, the United Auburn Indian Community (UAIC) is the only tribe that has indicated a desire to participate and they will sign the PA as a concurring party. Board is also a concurring party to the PA.

Overriding Considerations

In accordance with CEQA Guidelines Section 15093, Board balanced the economic, social, technological, and other benefits of the project against its unavoidable environmental risks and has found that the benefits of the Project outweigh the significant adverse environmental effects that are not mitigated to a less than significant level. Overriding considerations that support approval of the Project are as follows.

The purpose of the Manual Update is to establish operational changes at the Folsom Dam and Lake that include the new auxiliary spillway (JFP) to increase dam safety and more effectively manage flood risk above and below the dam. Operation of the JFP would increase water discharge capability from the reservoir, improving dam safety and reducing flood risk to the Sacramento Metropolitan area. Flood risk reduction is necessary to provide economic, social, and other benefits, as flood events are often uncontrolled and can result in deaths or injuries, damage to property and infrastructure, and release of environmental contaminants. Without an

updated water control manual, the JFP could only be operated in the extremely rare instance where the structural integrity of the dam was at risk of failure.

Following the analysis of several alternatives, it is expected that the chosen alternative (Forecast Informed Operations with Variable Flood Control Space) will best meet dam safety and flood risk management objectives for Folsom Dam and the Sacramento Metropolitan area. The Manual Update meets the five goals necessary to reduce the risk of catastrophic dam failure and flooding of areas downstream of the Folsom Dam and Lake facility, thereby increasing the safety of several hundred thousand people, and reducing the potential for loss of life and damages to property worth several billion dollars in the Sacramento Metropolitan area. Forecast-based releases would provide more flexibility in dam operations and allow for more conservative water storage and controlled releases, which would minimize potential impacts to biological resources, public services, utilities, water quality, and cultural resources. All feasible means to minimize and avoid potential adverse environmental impacts were incorporated into the Manual Update.

Flood risk management benefits provided by the Manual Update outweigh the unavoidable adverse environmental impacts of the Project. Board finds that these benefits override the potential unavoidable significant impacts resulting from implementation of the Manual Update.

ADOPTION OF FINDINGS AND OVERRIDING CONSIDERATIONS BY THE BOARD

The Board hereby formally adopts the findings and overriding considerations set forth herein.

The Board has weighed the impacts and benefits of the Project and find that the benefits of implementing the Project outweigh the significant and unavoidable environmental impacts.

By: _____ Date: _____
William H. Edgar
President

By: _____ Date: _____
Jane Dolan
Secretary

Attachment D

MITIGATION MONITORING AND REPORTING PLAN

WATER CONTROL MANUAL UPDATE

PLACER, EL DORADO, AND SACRAMENTO COUNTIES, CALIFORNIA

This mitigation monitoring and 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 Assessment / Environmental Impact Report (SEA/EIR) and corresponding impact.
- Mitigation Measures – lists the adopted mitigation measures from the SEA/EIR.
- Implementation Timing – identifies the timing of implementation of the action described in the mitigation measures. *See Notes below.
- Responsible for Mitigation – 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 and/or reporting on the 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 Central Valley Flood Protection Board (Board) upon completion of the project.

*Notes:
D: To be implemented or included as part of project design.
P: To be implemented prior to construction being initiated (pre-construction) (in this case, prior to implementation of the updated manual operations).
C: To be implemented during project construction (in this case, during implementation of the updated manual operations).

Section and Impacts	Avoidance, Minimization, & Mitigation Measures	Implementation Timing	Responsible for Mitigation	Responsible for Monitoring/ Reporting Action
4.4 Vegetation and Wildlife • Slight increases in mid-range flow frequencies could affect erosion rates and channel widening in some sub-reaches of the lower American River.	In order to monitor whether the amount or extent of incidental take anticipated from implementation of the WCMU is approached or exceeded, USACE shall adhere to the following monitoring requirements: • For years in which there is an event with discharge of at least 60 Kcfs (rounded); USACE shall require the operating agency(s) to use the procedure as outlined in Term and Condition 1 (a-g) of the October 5, 2018 USFWS Biological Opinion (08FBDT00-2018-I-0171) to evaluate erosion and vegetation loss from implementation of the WCMU. • USACE or the operating agency shall submit a report of the estimated amount of take of listed species habitat for those years meeting the definition of Term and Condition 1(e). The report shall include an explicit determination as to whether the estimated amount of take is within or has exceeded that authorized. The report shall be delivered to the USFWS no later than the next October 1 following the event. • USACE or the operating agency shall submit a report of the revegetation of eroded listed species habitat for those years meeting the definition of Term and Condition 1(e). The report shall include an explicit determination as	C	USACE	SAFCA Board will verify that monitoring requirements are implemented.

Section and Impacts	Avoidance, Minimization, & Mitigation Measures	Implementation Timing	Responsible for Mitigation	Responsible for Monitoring/ Reporting Action
	to whether the estimated take is within or has exceeded that authorized. The report shall be delivered to the USFWS no later than the next October 1 of the fifth season following the event.			
4.5 Fisheries • Modeling indicated a slight increase in channel degradation potential in the lower American River, which could result in the mobilization of sediments and gravels used for spawning.	• Down-ramping rates are incorporated into the WCMU. Flows between 8,000 cfs to 160,000 cfs will not decrease by more than 10,000 cfs over any 2-hour period. • Minimum flows of the lower American River Flow Management Standard are incorporated into the WCMU. • USACE and USBR shall include language in the WCMU that directs operators of Folsom Dam to consider measures to minimize impacts to spawning and incubating California Central Valley (CCV) steelhead when making operational decisions that have the potential to result in scour of incubating CCV steelhead eggs and alevins, to the extent possible without interfering with measures necessary to protect lives or property. • USBR's existing lower American River gravel augmentation program will be supplemented annually by approximately 300 short tons of spawning gravel (~$20,000) for 15 years.	D D D C	USACE/ USBR	Board will verify that monitoring requirements are implemented. SAFCA

Section and Impacts	Avoidance, Minimization, & Mitigation Measures	Implementation Timing	Responsible for Mitigation	Responsible for Monitoring/ Reporting Action
	• A 15-year monitoring program to evaluate the movement of spawning gravel in the upper reach of the lower American River (downstream of Nimbus Dam) will be established. • USACE and USBR shall annually convene a meeting with NMFS and CDFW on or about the second week of November of each year to discuss flood management operations, including the previous and upcoming flood management seasons and any potential effects from operations; risks to CCV steelhead; and identification and implementation of measures to minimize impacts on CCV steelhead. • USACE and USBR shall provide a report of past flood management operation to NMFS and CDFW at least two weeks prior to the meeting. • USACE and USBR shall provide a report to NMFS by October 20th of each year that includes: o A summary of operation that resulted in flows that exceeded 30,000 cfs downstream of Nimbus Dam in the previous water year (October 1-September 30). o A summary of the implementation of gravel augmentation in the previous water year and gravel augmentation plans for the current water year.	C C C C		SAFCA

Section and Impacts	Avoidance, Minimization, & Mitigation Measures	Implementation Timing	Responsible for Mitigation	Responsible for Monitoring/ Reporting Action
4.9 Cultural Resources • Modeling indicated an increase in wet/dry cycles between 426 feet and 430 feet in Folsom Reservoir, which could increase degradation of any cultural resources at those elevations along the lake bed. • Slight increases in mid-range flow frequencies could affect erosion rates and channel widening in some sub-reaches of the lower American River, which have the potential to impact cultural resources.	• Adverse effects will be mitigated through the process outlined in the 2018 Programmatic Agreement (PA) among USACE, USBR, California State Historic Preservation Officer, and the Advisory Council on Historic Preservation.	C	USACE/ USBR	Board is a concurring party to the PA and will be kept informed of the process.

By: _____ Date: _____

William H. Edgar

President

By: _____ Date: _____

Jane Dolan

Secretary