



February 21, 2018

Armando Quintero, Chair  
California Water Commission  
P.O. Box 942836  
Sacramento, California 94236-0001

Sent via email to [cwc@water.ca.gov](mailto:cwc@water.ca.gov)

**RE: State and Federal Agency Comments Regarding the Adverse Environmental Impacts of Temperance Flat Dam Demonstrate the Project is Not Eligible for Funding Under Proposition 1**

Dear Commissioner Quintero, Members of the Commission, and Staff:

On behalf of the Natural Resources Defense Council, Defenders of Wildlife, Sierra Club California, Friends of the River, and The Bay Institute, we are writing to provide public comments regarding the Commission's review of the application for Proposition 1 funding for Temperance Flat dam. While the Commission's regulations prohibit non-applicants from filing appeals, existing law and the Commission's regulations requires the Commission to consider all public comments with respect to these potential funding awards. *See also* Cal. Code Regs., tit. 23, §§ 6000, 6008(a)(5). This letter summarizes and attaches comments from state and federal agencies regarding the Temperance Flat project, which were submitted to the Bureau of Reclamation in 2014. These agency comments demonstrate that: (1) the proposed project has significant adverse environmental impacts, supporting staff's determinations regarding the applicant's claimed Public Benefit Ratio; (2) the proposed project has major implementation risks due to lack of water rights or water available for appropriation; and (3) the Commission should determine that the proposed project is not eligible for funding, because it does not result in net ecosystem improvements and because the applicant has failed to comply with CEQA.

These prior comment letters generally support staff's recent revision to the applicants' Public Benefit Ratio for this project, and they demonstrate that these issues have been known for several years and the applicant has failed to resolve them. We appreciate the Commission's consideration of these comments. Please include this comment letter and attachments in the administrative record for this proceeding.

1. Agencies Concluded in 2014 that the Proposed Project Would Cause Significant Adverse Environmental Impacts, Supporting Staff's Determinations Regarding the Applicants' Claimed Public Benefit Ratio:

The comment letters from state and federal agencies on the 2014 draft environmental impact statement ("DEIS") demonstrate that the project would have significant adverse impacts on salmon and other species. Many of the same models and unsupported assertions from the DEIR were used in the application to the California Water Commission, and these comment letters from state and federal agencies support the revised Public Benefit Score for this project.

For instance, the California Department of Fish and Wildlife ("CDFW") warned in 2014 that "[t]he Department has significant concerns with the Project-related impacts to the San Joaquin River below Friant Dam." Exhibit 1 at 3. These concerns included adverse effects on salmon and steelhead due to the reduction in flood flows, reduced floodplain inundation, and adverse temperature impacts. CDFW also documented adverse impacts to other fish and wildlife from the proposed project. See Exhibit 1 at 2, 5.

CDFW's comment letter explains that the DEIS fails to consider the adverse effects of reduced flows on salmon, including reduced floodplain inundation. Exhibit 1 at 3; *id.* at 6 ("A loss of potential floodplain habitat from reduced frequency, magnitude, and duration of floodplain inundation would not be beneficial for juvenile Chinook."); *id.* at 7 ("reducing the magnitude and/or frequency of flood flows could have significant negative effects on the ability to restore self-sustaining populations of spring- and fall-run Chinook salmon in the portion of the San Joaquin River between Friant Dam and the Merced River confluence."). Other state and federal agencies concurred in these conclusions. See, e.g., Exhibit 4, Enclosure 1 at 4 (concluding that the loss of flood flows would adversely affect salmon and steelhead that migrate not only from the upper San Joaquin River, but also from other tributaries to the San Joaquin River); Exhibit 5 at 7-9. CDFW's letter explains that the project would likely cause adverse impacts on other life stages of salmon, as well as adverse impacts in the lower San Joaquin River and Delta. Exhibit 1 at 3.

Several agencies also disagreed with the DEIS conclusions regarding water temperature effects of the project on salmon. For example, CDFW disagreed with the draft EIS's conclusion that the project would have beneficial temperature effects on salmon, concluding that "[i]t is unclear that [water temperature effects] will be beneficial for salmon." Exhibit 1 at 6. NMFS concluded that there were significant flaws with the temperature modeling provided in the DEIS. See Exhibit 4, Enclosure 1 at 3. The SWRCB concurred, stating that,

The EIS should clarify how the project meets the goals of enhancing water temperature and flow conditions in the San Joaquin River downstream from Friant Dam for salmon and other native fish. It is not clear how the project as proposed meets the stated goal of enhancing water temperatures and flows downstream of Friant. **It appears that the project causes further degradation to winter and spring temperature and flow conditions in the San Joaquin River downstream from Friant Dam for salmon and**

**other native fish. Reclamation and DWR should consider additional project alternatives or mitigation measures to avoid or minimize temperature impacts during the winter and spring seasons or explain why such measures are not feasible.**

Exhibit 2 at 2 (emphasis added); *see id.* at 2-4. The U.S. Environmental Protection Agency likewise concluded that the project likely would cause significant adverse effects on downstream water temperatures during the spring months. Exhibit 5 at 4, 9. EPA also recommended that the DEIS be revised to consider a temperature control device on Friant Dam to manage water temperatures. *Id.* at 5.<sup>1</sup>

State and federal agencies concluded that the EDT model that was used to assess impacts of the Project on salmon were not reliable. *See* Exhibit 1 at 8 (“There are a number of assumptions made in the ‘EDT’ habitat model that make the results unreliable for the purposes of comparing alternatives or determining impact significance.”); Exhibit 4, Enclosure 1 at 2-3.

In total, these comments demonstrate that the project would cause adverse impacts to salmon from the reduction in flood flows, reduction in floodplain inundation, and worsened water temperatures. The Commission’s regulations require the applicant to include these adverse impacts as part of the assessment of potential benefits and impacts from the project. Cal. Code Regs., tit. 23, § 6004(a). The applicant failed to do so, as noted in staff’s revised PBR. The comments also demonstrate that the EDT model used in the application is not reliable for assessing impacts of the proposed project on salmon, which was again noted in staff’s revised PBR.

2. The Proposed Project Faces Major Implementation Risks due to lack of Water Rights and Water Available for Appropriation:

Should the Commission determine that the project is even eligible for funding, the comment letters also demonstrate that this project should score extremely poorly on the implementation risk category. *See* Cal. Code Regs., tit. 23, § 6007(e). As the State Water Resources Control Board explained in 2014, the San Joaquin River has been designated as a fully appropriated system, which means that the Board currently cannot issue a water right for this project. Exhibit 3; Exhibit 2 at 4-5; Exhibit 1 at 4. Instead, they would have to petition to rescind that determination and apply for a new water right, a very long process with significant risks that a water right would never be granted. The agencies also explained that the project could injure downstream water rights and adversely affect operations of the CVP and SWP in the Delta. *Id.* This increases the risk that a water right would not be granted for the proposed project.

3. The Proposed Project is Not Eligible for Funding Because it Fails to Provide Net Ecosystem Improvements:

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<sup>1</sup> A temperature control device on Friant Dam is likely to be the least costly alternative means of improving water temperatures. Such a device likely would not result in adverse effects on downstream water temperatures in the winter and spring, unlike the proposed project.

The comments strongly suggest that on balance, the adverse effects of Temperance Flat dam on salmon and other fish and wildlife outweigh any purported benefit to salmon from the project. At a minimum, they demonstrate that the models and analyzes used in the DEIR, and again in the application, fail to demonstrate that the project would result in net ecosystem benefits. A project must result in net ecosystem improvements to be eligible for funding from Proposition 1. See Cal. Water Code §§ 79750(b), 79752, 79756(b); Cal. Code Regs., tit. 23, § 6006(c)(2)(B),(E). Because the project fails to result in net ecosystem improvements, it is not eligible for funding from Proposition 1.

4. The Proposed Project is Not Eligible for Funding Because the Applicant has Failed to Comply with CEQA

Finally, Proposition 1 requires that the applicant has released a draft CEQA document for public comment to be eligible for funding. See Cal. Water Code § 79757(a)(1). The Technical Reference Document explains that,

Water Code Section 79755(a)(5)(C) requires that environmental documentation associated with a proposed project approved for WSIP funding be completed prior to allocation of funds. In addition, a project is not eligible for funding unless draft environmental documentation is available for public review. All projects proposed for funding must comply with CEQA.

Technical Reference Document at 2-3. The Technical Reference Document was incorporated by reference into the regulations, Cal. Code Regs., tit. 23, § 6003(a)(1)(O), and it thereby is formally part of the regulations. Other sections of the Technical Reference Document explicitly state that that the feasibility study and environmental document must be submitted with the application. See, e.g., Technical Reference Document at 3-2, 4-153. The Technical Reference Document defines the term “environmental documentation” to mean documentation required to comply with CEQA. *Id.* at 12-3. Therefore, submission of a draft CEQA document as part of the application is required to be eligible for funding.

However, a draft EIR or other CEQA document was not prepared and circulated in accordance with CEQA. For instance, CDFW explained that the draft EIS,

The impact analysis does not appear to be complete or timely since it is based on biological studies which were not conducted over the entire Project area and which are as much as seven years old. **The Department recommends the designation of a State lead agency and the analysis of the potential Project-related impacts over the entire Project area within the scope of a CEQA review.** Among other things, this will facilitate an appropriate analysis of the impacts to the State-listed species so the Department would be able to utilize the CEQA document in the preparation of an Incidental Take Permit (ITP) pursuant to Fish and Game Code Section 2081(b) and in compliance with the California Endangered Species Act (CESA).

Exhibit 1 at 2-3 (emphasis in original). To our knowledge, a draft CEQA document has never been released for public review (nor have the applicants even filed a Notice of Preparation for a draft EIR pursuant to CEQA), in contrast to other projects that applied for funding from Proposition. Because the applicants have failed to comply with CEQA, the project is not eligible for funding.

5. Conclusion

The attached documents from the California Department of Fish and Wildlife, State Water Resources Control Board, National Marine Fisheries Service, and U.S. Environmental Protection Agency demonstrate that the Temperance Flat project will cause significant adverse impacts on fish and wildlife; that those adverse environmental impacts outweigh any environmental benefits; that the project has major implementation risks; and that the project is not eligible for funding because it fails to provide net ecosystem benefits and the applicant has failed to comply with CEQA.

Thank you for consideration of our views. Should the applicant file an appeal with the Commission, we intend to review and provide public comment on that appeal.

Sincerely,



Doug Obegi  
Natural Resources Defense Council



Rachel Zwillinger  
Defenders of Wildlife



Kyle Jones  
Sierra Club California



Ron Stork  
Friends of the River



Gary Bobker  
The Bay Institute

**Enclosures:**

- Exhibit 1: CDFW comments
- Exhibit 2: SWRCB NEPA comments
- Exhibit 3: SWRCB water rights letter
- Exhibit 4: NMFS comments
- Exhibit 5: EPA comments

# **EXHIBIT 1**



State of California – Natural Resources Agency  
DEPARTMENT OF FISH AND WILDLIFE  
Central Region  
1234 East Shaw Avenue  
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(559) 243-4005  
[www.wildlife.ca.gov](http://www.wildlife.ca.gov)

**EDMUND G. BROWN JR., Governor**  
**CHARLTON H. BONHAM, Director**



October 20, 2014

Melissa Harris, Project Manager  
United States Department of the Interior  
Bureau of Reclamation, Planning Division  
2800 Cottage Way, MP-700  
Sacramento, California 95825-1893

**Subject: Draft Environmental Impact Statement (MP-720/ENV-6.00)  
Upper San Joaquin River Basin Storage Investigation (Project)  
Fresno and Madera Counties**

Dear Ms. Harris:

On September 5, 2014, the California Department of Fish and Wildlife (Department) received the above referenced 7,000-page *Draft Environmental Impact Statement* (DEIS). Acting as the federal lead agency under the National Environmental Policy Act (NEPA), your agency has prepared and circulated the DEIS to inform cooperating and other public agencies of the potential environmental impacts which could result from Project implementation. The DEIS indicates that the environmental document was prepared consistent with the substance, format, and process requirements of both NEPA and the California Environmental Quality Act (CEQA), and could therefore be relied upon by the Department in the event we are involved in approving some aspect of the Project. However, the DEIS has not been circulated through the State Clearinghouse as required under CEQA (Section 15205(b)(4)). The Department provided informal comments to your consultant (MWH Americas, Inc.) on an administrative draft of the DEIS in April 2013.

The Department understands that Project approval would allow for the construction and operation of the Temperance Flat Dam on the San Joaquin River approximately 6.8 miles upstream of the existing Friant Dam. In addition to the construction and operation of the dam and its permanent appurtenant facilities (diversion works, hydropower generation and transmission facilities, and access roads), several temporary facilities (coffer dams, aggregate quarry, batch plant, staging areas, and waste areas) would be constructed to facilitate Project implementation. The Project would also involve the decommissioning of several existing facilities (Kerckhoff Powerhouse No. 1, Kerckhoff Powerhouse No. 2, and the Wellbarn Road boat ramp) from within the inundation area upstream of the new dam. The Project would involve mostly federal lands but portions of the Project area are privately held. The 665-foot tall concrete arch gravity dam would create the capacity to impound as much as 1.26 million acre-feet of San Joaquin River water, and would reportedly result in increased surface water storage and improve flood management, provide for hydropower generation, and the betterment of water supply reliability. The DEIS also indicates that the Project will provide benefits to the downstream fisheries. At capacity, just over 12,000 acres of lacustrine, woodland, grassland, and riverine communities would be inundated upstream of



the dam, while the permanent appurtenant and temporary facilities would occupy a comparatively small acreage of upland shrub and woodland communities (encompassing some seasonal wetlands) above the reservoir. In the DEIS, the Project and five Project alternatives are outlined, which constitute slight variations in the location of the permanent appurtenant and temporary facilities and the conveyance of water released downstream of the dam. Botanical, wildlife, aquatic, and wetland studies were conducted on the federally owned lands in support of the DEIS between 2007 and 2011; however, these studies were not conducted on the privately held portions of the Project area.

In the DEIS, Project-related impacts to several plant and animal species, and fish and riparian habitats which occur at and near the Project area are discussed. Some of the impacts will be reduced to a "less than significant" level through the implementation of minimization and mitigation measures, while other impacts will be "unavoidable and significant". In summary, the DEIS states that the significant:

- 1) impacts, associated with the loss of special status plants, will be mitigated to less than significant levels through the relocation of those plants and plant populations prior to Project implementation;
- 2) impacts, associated with the loss of riparian and other sensitive communities, will remain **significant and unavoidable**, even after the impacts are minimized and mitigated for;
- 3) impacts, associated with the loss or degradation of Waters of the United States (including wetlands and Waters of the State), will be reduced to less than significant through the creation of wetlands;
- 4) impacts, associated with the introduction and spread of invasive plants during Project construction activities, will be reduced to less than significant through the implementation of a weed management plan;
- 5) impact to special status invertebrates, amphibians, reptiles, passerines, and bats, as well as to ringtail, American badger, San Joaquin pocket mouse, birds protected under the Migratory Bird Treaty Act (except the golden eagle and the bald eagle), migratory and wintering deer herds, and riparian habitat for special status bird species, will be mitigated to less than significant levels; and
- 6) impacts associated with impacts to the golden eagle and the bald eagle will be minimized through a set of planned avoidance and minimization measures, but will remain **significant and unavoidable**;

The impact analysis does not appear to be complete or timely since it is based on biological studies which were not conducted over the entire Project area and which are as much as seven years old. **The Department recommends the designation of a State lead agency and the analysis of the potential Project-related impacts over the entire Project area within the scope of a CEQA review.** Among other things, this will facilitate an appropriate analysis of the impacts to the State-listed species so the Department would be able to utilize



the CEQA document in the preparation of an Incidental Take Permit (ITP) pursuant to Fish and Game Code Section 2081(b) and in compliance with the California Endangered Species Act (CESA).

The Department has significant concerns with the Project-related impacts to the San Joaquin River below Friant Dam. The DEIS implies that the Project would be beneficial to restoring the San Joaquin River below Friant Dam, and to the ecosystems in the lower San Joaquin River and Delta, mainly due to the conclusion that increased storage will benefit water temperatures. However, while temperature benefits would likely be realized during drier years, the DEIS fails to adequately consider the ecosystem benefits that flood releases currently provide to the aquatic and riparian communities downstream of Friant Dam and the potentially detrimental effects to those ecosystems by eliminating flood flows from the hydrograph.

Floodplain inundation through release of flood flows in Central Valley rivers has been shown to significantly benefit both growth and survival of outmigrating Chinook salmon juveniles (Jeffres et al., 2008; Sommer et al., 2001). For example, juvenile survival in the Stanislaus River was estimated to be 5 to 10 percent during base flow releases and nearly 100 percent during prolonged flood control releases, even when winter water temperatures were highly suitable, based on a comparison of data from rotary screw traps at Oakdale and Caswell (Zeug et al., 2014).

There may be some benefit to water temperatures from the Project, but overall it would mean less water and altered timing of releases for the San Joaquin River and the Delta. Temperature benefits for reintroduced Chinook salmon would be spatially limited to Friant Dam and Reach 1 of the San Joaquin River below Friant, and temporally limited to late summer and fall, benefitting spawning and egg incubation, but providing no benefit to or harming other life stages of salmon. Downstream reaches of the San Joaquin River, the lower San Joaquin River, and the Delta would see no temperature benefit and a loss of habitat due to reduced flows.

### **Department Jurisdiction**

**Trustee Agency Authority:** The Department is a Trustee Agency with the responsibility under CEQA for commenting on projects that could impact plant and wildlife resources. Pursuant to Fish and Game Code Section 1802, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. As a Trustee Agency for fish and wildlife resources, the Department is responsible for providing, as available, biological expertise to review and comment on environmental documents and impacts arising from project activities, as those terms are used under CEQA.

**Responsible Agency Authority:** The Department has regulatory authority over projects that could result in the “take” of any species listed by the State as threatened or endangered (or candidates for listing), pursuant to Fish and Game Code Section 2081. If the Project could result in the “take” of any species listed as threatened or endangered under CESA on non-federal lands, the Department may need to issue an ITP for the Project. CEQA requires

a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (sections 21001{c}, 21083, Guidelines sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The CEQA Lead Agency's FOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code Section 2080.

**Lake and Stream Alteration Agreement (LSAA):** The Department also has regulatory authority with regard to activities occurring in streams and/or lakes that could adversely affect any fish or wildlife resource, pursuant to Fish and Game Code sections 1600 *et seq.* In the event that all or a portion of Project implementation will be carried out by an entity other than the federal government (the federal government is not an entity as defined in Fish and Game Code sections 1600 *et seq.*), prior to ground-disturbing activities which could affect the bed, bank, or channel of the San Joaquin River, Millerton Lake, or any other streams, the Department recommends the Project proponent submit a Lake and Stream Alteration Notification to the Department for the Project. The Department is required to comply with CEQA in the issuance or the renewal of an LSAA. For additional information on notification requirements, please contact our staff in the Stream Alteration Program at (559) 243-4593.

**Water Rights:** The San Joaquin River has been declared Fully Appropriated by the State Water Resource Control Board (State Water Board). According to the DEIS (page 28-88), the State Water Board informed Reclamation that Reclamation would have to seek a revision of the Fully Appropriated Streams Declaration (State Water Board Order 89-25, Exhibit A) pursuant to Title 23 of the California Code of Regulations (CCR), Section 871, along with submittal of a proposed application for a new water right (California Water Code Section 1202, *et seq.* and Title 23 of the CCR, Section 650 *et seq.*) for operation of the proposed Project. The proposed water right application would not be accepted or processed until the State Water Board adopts an order changing the Fully Appropriated Streams Declaration. The Department, as a State Trustee Agency, is consulted by the State Water Board to provide terms and conditions designed to protect fish and wildlife resources prior to water rights actions appropriating the State's water resources.

Reclamation operates Friant Dam under Water Right Permits 11885, 11886 and 11887 and License 1986 (Applications 234, 1465, 5638, and 23, respectively) (Water Right). The State Water Board approved an Order in 2013 which modified Reclamation's Water Right to authorize long-term implementation of the San Joaquin River Restoration Settlement Act (Settlement). The San Joaquin River Restoration Program (SJRRP) was established to implement the Settlement. The Water Right Order and Settlement provide for SJRRP flows dedicated for the purpose of restoration, preservation, and enhancement of fish and wildlife resources. Proposed water storage and diversion at Temperance Flat Dam should not conflict with the required SJRRP flow releases at Friant Dam. In addition, new water right conditions for the proposed Project should include releases from Temperance Dam designed for the purpose of enhancing water quality/temperature downstream from Friant Dam.

## **Specific Comments**

Deer WLD-9: Migratory and Wintering Deer Herds: The deer in the vicinity of the Project are California Mule Deer. Although there has been little direct investigation of deer in the Project Area, it is believed that the majority of the population is part of the South Sierra Foothill herd and is not migratory.

Recent unpublished research in adjacent areas indicates that migratory deer from the San Joaquin Deer Herd winter as close as three or four miles from Squaw Leap and that North Kings Deer also migrate to the Madera side of the San Joaquin River. It is possible that deer from three herds; the San Joaquin, North Kings and South Sierra Foothill intermingle in the Project Area, due to its proximity to the known range of these herds, which was published as early as 1952 (Longhurst, 1952). The San Joaquin River is not considered a barrier and deer migrate across it to wintering and summering areas on either side

Mitigation Measure WLD-9: Migratory deer depend on each segment of habitat within their migratory range for survival. Elimination of one segment of seasonal habitat can have the same effect as directly eliminating the population that utilizes that habitat. Because deer populations are concentrated within their winter range, that segment of habitat is critical for a larger percentage of the total population than an equivalent acreage of summer range. It is estimated that the inundation of 6,000 acres of prime deer winter range by Pine Flat reservoir reduced the carrying capacity of the North Kings Deer Herd by 1,000 animals (Ashcraft and Heubach 1964).

Key habitat areas are critical for migratory populations and the loss of a segment of habitat cannot easily be mitigated to a less than significant level. The animals that utilize the lost habitat are simply lost across the entire migratory range. Likewise but on a smaller scale, resident deer herds are also lost by habitat destruction of either fawning sites or entire habitats. Adjacent areas purchased as "mitigation" do not replace the lost animals but simply protect existing animals already in those areas. To adequately reduce impacts from a significant impact to less than significant levels, habitat in adjacent areas would need to be enhanced, in perpetuity, to allow the existing population to be supported on less acreage.

ES-7: The Project Purpose and Need states that the project is needed to enhance water temperature and flow conditions in the San Joaquin River below Friant Dam for salmon and other native fish. Reclamation believes that temperatures would be enhanced during late summer and fall of some years. However, it is unclear how the Project would enhance flows below Friant Dam without respect to the SJRRP hydrographs.

ES-8: Similar to our above comment, it is unclear how extra storage capacity will provide beneficial flows if that water is intended for some other use; the system may lose flood releases during larger rain events than would occur without the Project. This would make releases below Friant even more homogeneous each year and would further reduce the ability of the San Joaquin River to mimic a natural stream.

Table ES-3, FSH-8 and FSH-9: FSH-8 seems misleading as the Project would be beneficial for open-water shad habitat but as FSH-9 indicates, there would be no more shad spawning

habitat; there would be no recruitment of shad to benefit from the additional open water habitat.

Table ES-3, FSH-10: A loss of potential floodplain habitat from reduced frequency, magnitude, and duration of floodplain inundation would not be beneficial for juvenile Chinook.

Table ES-3, FSH-11: It is unclear that this will be beneficial for salmon.

ES-60, Table ES-3: There appears to be an impact that was not considered in the DEIS; introduction and/or spread of aquatic invasive species (e.g., zebra and quagga mussels) due to adding another reservoir and increasing boat/public access to the area.

Chapter 5, p 5-4, Table 5-1: 1) California roach should be included in this table. They are in the family Cyprinidae along with the several other native fish listed in the table (Sacramento sucker, Sacramento pikeminnow, Sacramento blackfish, hitch, and hardhead). These fish are part of the native minnow assemblage which require riverine habitat for their reproductive life stage. If the native fish that are listed in Table 5-1 are present in the Project Area, then California roach would likely be present as well; and 2) The "Study Area Distribution" section of Table 5-1 should be revised by stating that all the native minnows utilize the San Joaquin River below Kerckhoff Dam.

Chapter 5, p 5-4, Paragraph 1: *Margaritifera* spp. is a freshwater mussel. Western pearlshell is *Margaritifera falcate*.

Chapter 5, p 5-69, Impact FSH-1: Hitch and California roach should be included as fish that will be significantly impacted under all the action alternatives.

Chapter 5, p 5-69, Impact FSH-1, p 3: The fish mentioned in this paragraph are capable of living in reservoirs; however, these fish populations will be significantly impacted or eliminated due to the inability to reproduce.

Chapter 5, p 5-81, Impact FSH-7: The majority of the Project Area is located within the riverine portion of Millerton Lake. This area is a canyon with steep walls which would not provide suitable spawning habitat for black bass. Therefore, these action alternatives should not be considered beneficial.

Chapter 5, p 5-2: Since the quality and quantity of the smaller gravels have not been evaluated in this section of the river, it may not be appropriate to make an inference about the quality of the spawning habitat in this area.

Chapter 5, p 5-2, Par 4: This indicates that gravel is highly embedded due to low gravel recruitment. The opposite is actually true in much of the Project Area; high gradients and frequent mobilization has resulted in loose, easily mobilized gravels which are not embedded. In reality, nearly all spawning habitat for American shad, rainbow trout, and striped bass would be inundated by the dam, likely severely impacting or eliminating those fisheries. The American shad population in Millerton Lake is unique in that it is the only known landlocked population in existence.



Page 5-55, Figure 5-2: The caption states that these are modeled temperatures for Reach 1, but does not specify where in Reach 1. The Department currently monitors water temperature at 27 sites in Reach 1A, and has found that temperature trends vary considerably depending on the distance from Friant Dam. During many years, temperatures within a few miles of Friant Dam are suitable for any life stage of Chinook salmon at any time of year, while temperatures at the bottom of Reach 1A are more dependent on the amount of flow and air temperature.

Page 5-57: The floodplain analysis only considers the magnitude of peak flows, omitting any analysis of peak flow duration. While the peak magnitude is of interest for maintaining geomorphology and determining the extent of floodplain inundation, the duration of floodplain inundation is important for the health of the aquatic and riparian ecosystem. Under current conditions, there are periods during Normal Wet and Wet years that have one or two months of flood control releases from Friant Dam. Under any Project scenario, both the magnitude and duration would be reduced to Restoration Flows in the SJRRP Settlement; therefore, the peak would be lower and last for no longer than two weeks. This reduces the duration of floodplain inundation by fifty percent or more during times of year when it would be beneficial for riparian recruitment, primary and secondary productivity, and Chinook salmon and other fish species.

Page 5-102, FSH-14: Less frequent and reduced magnitude of flood flows from Millerton would mobilize spawning gravel less frequently and in fewer areas than under current conditions, leading to degradation of existing spawning habitat for salmonids below Friant Dam and potentially reducing spawning success and embryo survival of Chinook salmon. Less frequent and reduced flood flow releases from Millerton Reservoir would also result in less frequent, reduced, and shorter duration of floodplain connectivity in the Extended Study Area, and would therefore have a potentially significant impact on rearing habitat for Chinook salmon. Due to these potential Project-related impacts to spawning and rearing habitat, reducing the magnitude and/or frequency of flood flows could have significant negative effects on the ability to restore self-sustaining populations of spring- and fall-run Chinook salmon in the portion of the San Joaquin River between Friant Dam and the Merced River confluence. Further, the DEIS does not appear to consider the duration and extent of floodplain connectivity, as well as the increased benefit of 8,000 cubic feet per second (cfs) versus 4,500 cfs flows, but should.

Page 5-102, FSH-14: The DEIS states that "the ecological significance of change in flood pulse frequency" between 4,000 cfs and 8,000 cfs "is unclear," and that since the Settlement will require pulses, it will be less than significant. This suggests that the impacts are uncertain and the analysis lacks sufficient information to conclude that the impacts are less than significant. Analyses should evaluate the biological impacts of the proposed Project, independent of the Settlement.

Chapter 12, p 12-9, lines 1-24: A description of the Chowchilla Bypass Structure indicates that it "controls the proportion of flood flows that remain in the San Joaquin River between the Chowchilla Bypass and the Mendota Canal." In this description, it is unclear whether "Mendota Canal" refers to the Delta-Mendota Canal (DMC) or to the segment of the San Joaquin River channel leading to the Mendota Pool and Mendota Dam.

Chapter 12, p 12-27, lines 28-32: The description of the San Joaquin River reach between Sand Slough Control Structure and the Mariposa Bypass indicates that the design capacity at this reach is 1,500 cfs. This description could be enhanced by acknowledging vegetation encroachment within the channel in this reach of the San Joaquin River. Encroachment issues hinder the San Joaquin River ability to pass flows up to its design capacity, under existing conditions.

Chapter 12, p 12-33, lines 19-23: Description of the No Action Alternative under Impact FLD-1 acknowledges potential flood system improvements along the San Joaquin River below Friant Dam as part of SJRRP, but does not mention other flood system improvements within the Extended Study Area. Please note that regional flood management planning workgroups have identified and developed additional flood system improvements in the San Joaquin River below Friant Dam. These system improvements (projects) have been developed in conjunction with ongoing SJRRP improvements and include multi-purpose projects (i.e., with integrated flood risk reduction and conservation objectives). These projects are part of the implementation of the 2012 Central Valley Flood Protection Plan, pursuant to the California Central Valley Flood Protection Act of 2008, and could be included in this discussion. For additional details, please visit: <http://usjrflood.org/> and <http://midsjrfloodplan.org/>

Chapter 5 and Modeling Appendix: There are a number of assumptions made in the “EDT” habitat model that make the results unreliable for the purposes of comparing alternatives or determining impact significance. These include: (1) changes in habitat conditions modeled in EDT only considers spring-run Chinook salmon and not fall-run Chinook or other native fish species; (2) the full range of stream flows were not considered as monthly average flow does not capture habitat extent and variability adequately; and (3) the model lacks transparency, calibration, or peer review of its methods of converting flow and temperature data (and its weighting of each’s importance to the population) to predictions of population success. It would be more appropriate to use a comparison of physical habitat availability under different flow regimes by using a 2-dimensional (or 1-D) hydraulic model to construct flow-habitat curves for different life stages and applying those curves to the different daily flows for each alternative hydrograph.

Chapter 15, Page 15-35, Impact SWQ-4: The DEIS states that the inundation of the three abandoned mines would result in low probability of substantial increases of toxic contamination, and the report concluded that the impact of the action alternatives would be potentially significant. However, the environmental analysis did not include an evaluation of the bioaccumulative properties of mercury or methylmercury in Millerton Lake or the proposed Temperance Flat Reservoir. The bulk of the literature supports the concept that reservoir creation and operation exacerbate mercury contamination by creating conditions that increase the production and bioaccumulation of methylmercury in aquatic life. Mercury is toxic in all of its forms, but methylmercury is the one form that is most toxic and readily available for bioaccumulation in fish, birds, and wildlife mammals as well as humans.

For decades, scientists have observed that the creation and enlargement of reservoirs results in the increase of methylmercury concentrations in reservoir water and the fish residing in the reservoirs (Abernathy and Cumbie 1977; Bodaly et al. 1984; Hall et al. 2009; Johnston et al.



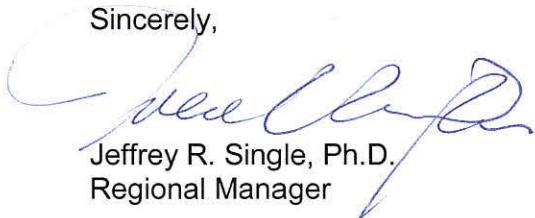
Melissa Harris, Project Manager  
United States Department of the Interior  
Bureau of Reclamation, Planning Division  
October 20, 2014  
Page 9

1991). Reservoir aqueous methylmercury concentrations were statistically proportional to the amount of land flooded (Bodaly et al. 2007; Selch et al. 2007). After initial flooding, fish methylmercury concentrations increase 2 to 7 fold, and the elevated concentrations can continue for up to 35 years (Genivar 2006; Schetagne et al. 2003; Therrin 2005; Therrin and Schetagne 2005). Some of the other environmental factors that have been found to be important in determining predatory fish methylmercury concentrations in California reservoirs include, but are not limited to: reservoir total and methylmercury water and sediment concentrations, reservoir chlorophyll-a concentrations, reservoir water level fluctuations, reservoir dam height, and the ratio of aqueous methylmercury to chlorophyll-a (Louie et al. 2013).

As stated in the DEIS, Millerton Lake is currently listed for mercury on the 2010 CWA 303(d) list of impaired waters. The beneficial uses that are not being protected include wildlife habitat and water contact recreation because bioaccumulated methylmercury is a threat to fish and wildlife and human consumers of fish. The Project will likely not support beneficial uses in the proposed Temperance Flat Reservoir, as well as possibly worsen the mercury contamination problem in Millerton Lake. Therefore, the potential adverse impacts of the Project should be listed as **Significant**, regardless if the abandoned mines are inundated. Additionally, the State Water Resources Control Board (SWRCB) is currently developing the Statewide Mercury Control Program for Reservoirs (SWRCB 2014). The Department suggests consultation with the SWRCB concerning this issue prior to developing the Final Environmental Impact Statement.

We appreciate the opportunity to comment on the DEIS. If you have any questions regarding our comments, please contact Steve Hulbert, Environmental Scientist, at the address provided on this letterhead or by telephone at (559) 243-4014, extension 289.

Sincerely,



Jeffrey R. Single, Ph.D.  
Regional Manager

cc: See Page Ten



Melissa Harris, Project Manager  
United States Department of the Interior  
Bureau of Reclamation, Planning Division  
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cc: Clay Rodgers, Assistant Executive Officer  
California Regional Water Quality Control Board  
Central Valley Region  
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Fresno, California 93706

Thomas Leeman  
United States Fish and Wildlife Service  
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Rocky Montgomery  
United States Fish and Wildlife Service  
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ec: Scott Cantrell  
Gerald Hatler  
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Julie Vance  
California Department of Fish and Wildlife

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Melissa Harris, Project Manager  
United States Department of the Interior  
Bureau of Reclamation, Planning Division  
October 20, 2014  
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# **EXHIBIT 2**

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## State Water Resources Control Board

October 27, 2014

Ms. Melissa Harris  
Project Manager  
Bureau of Reclamation  
2800 Cottage Way  
Sacramento, CA 95828-1898

### COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE UPPER SAN JOAQUIN RIVER BASIN STORAGE INVESTIGATION ENVIRONMENTAL IMPACT STATEMENT

State Water Resources Control Board (State Water Board) staff appreciates the opportunity to review and provide comments on the draft Environmental Impact Statement (EIS) for the Upper San Joaquin River Basin Storage Investigation. Comments on the draft EIS are due on October 27, 2014. The State Water Board requested an extension of this comment period due to the relatively short comment period and the State Water Board's extensive drought related workload, but did not receive a response. Accordingly, the State Water Board's review of the draft EIS was limited.

#### Introduction

According to the Executive Summary, the Draft EIS documents the analysis of the potential environmental effects of alternatives to increase storage of water from the upper San Joaquin River watershed to improve water supply reliability and operational flexibility in Central Valley Project San Joaquin Valley areas and other regions of California, and enhance water temperature and flow conditions in the San Joaquin River downstream from Friant Dam for salmon and other native fish. In addition to the No-Action Alternative, the Draft EIS considers five action alternatives, which include constructing a dam in the upstream portion of Millerton Lake at river mile 274, and which vary based on operations and intake feature configurations. The U.S. Department of the Interior, Bureau of Reclamation (Reclamation), is the lead on the project in cooperation with the California Department of Water Resources (DWR). Reclamation prepared the draft EIS to disclose the potential direct, indirect, and cumulative impacts of implementing a proposed action and a range of reasonable alternatives, and to identify feasible mitigation measures to reduce, minimize, or avoid significant adverse impacts. The draft EIS states that it has been prepared in compliance with both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). With respect to CEQA, the EIS specifically states:

“This Draft EIS has also been prepared in consideration of CEQA and State CEQA Guidelines to support the CEQA Lead Agency and Responsible and Trustee agencies that would be involved in approving a proposed alternative. However, at the time of

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

release of this Draft EIS, DWR was unable to provide CEQA review. When a project (such as the Investigation) requires compliance with CEQA and NEPA, and the NEPA document is ready before the CEQA document – as is the case here – the CEQA Lead Agency (DWR) should use the EIS rather than preparing an EIR when the following two conditions occur:

1. An EIS will be prepared before an EIR would otherwise be completed for the project
2. The EIS complies with the CEQA Guidelines (see CEQA Guidelines section 15221).”

Since the EIS may be used to satisfy CEQA compliance and the State Water Board is a responsible agency under CEQA, State Water Board staff conducted an initial review of the draft EIS. Upon further review, the State Water Board may have additional comments. State Water Board staff’s comments are summarized below.

### General Comments

- The impact assessments in the resource chapters should clarify how quantitative changes were evaluated between the baseline and the alternatives. Specifically, what quantitative thresholds were used in determining whether impacts were significant?
- The EIS should provide justification for determinations that no feasible mitigation measures are available to address impacts, specifically impacts to fish and wildlife. The EIS should clarify how the project meets the goals of enhancing water temperature and flow conditions in the San Joaquin River downstream from Friant Dam for salmon and other native fish. It is not clear how the project as proposed meets the stated goal of enhancing water temperatures and flows downstream of Friant. It appears that the project causes further degradation to winter and spring temperature and flow conditions in the San Joaquin River downstream from Friant Dam for salmon and other native fish. Reclamation and DWR should consider additional project alternatives or mitigation measures to avoid or minimize temperature impacts during the winter and spring seasons or explain why such measures are not feasible.

### Fisheries Comments

- For FSH-10, the EIS should provide justification for the assumption that an increase in minimum population size during dry years will support population resilience more than small decreases in maximum population size.
- For FSH-10, the EDT model should be used to evaluate potential effects to each life stage of spring-run Chinook salmon using changes to important habitat attributes as a basis for the evaluation. The habitat attributes, evaluation criteria, and significance thresholds should be adequately described and justified. This same process should be applied to other impact evaluations in chapter 5.
- For FSH-11, the analysis should utilize thresholds (see USEPA 2003<sup>1</sup>) to calculate the amount of time that “optimal” or “sub-optimal” conditions are met under baseline and alternative conditions. Please provide summary tables indicating the frequency of threshold compliance by month under each alternative and no action alternative. The

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<sup>1</sup> U.S. Environmental Protection Agency (USEPA). 2003. USEPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards. USEPA 910-B-03-002. 49 pp. April.



thresholds and locations which are used should be tailored to evaluate key indicator species and each of their life stages that the project may impact. The 7DADM metric should be used as recommended by USEPA 2003.

- For FSH-11, the EIS should include a discussion of potentially feasible mitigation measures like higher carryover storage requirements at Friant Dam and/or a temperature control device/selective intake on Friant Dam.
- For FSH-14, the EIS should provide additional information on the impacts of floodplain availability to native fish. The analysis should include the frequency that floodplain flows would occur under each alternative, and incorporate existing information about floodplain acreages that correspond to different flows (see cbec 2010<sup>2</sup>). State Water Board staff recommends that floodplain effects be evaluated by month as to better understand when and where changes would occur that could affect native fish. State Water Board staff also recommends extending the floodplain analysis past the Merced River confluence to Vernalis.
- For FSH-15, the EIS should provide additional justification for the statement, “San Joaquin River water temperature is strongly affected by air temperatures. Additionally, the SJR5Q water temperature model results indicate that the action alternatives would not affect water temperatures in the San Joaquin River immediately downstream from the confluence with the Merced River under both existing and future conditions (see Figure 5-16, Figure 5-17 and the Modeling Appendix for additional figures). Therefore, it is reasonable to conclude that water temperatures in the San Joaquin River downstream from the Merced River would not be affected by the action alternatives.”  
In regards to the above statement: 1) in addition to air temperature, water temperature is also strongly affected by flow; 2) Figures 5-16 and 5-17 refer to temperature conditions at Reach 2A and not near the Merced confluence; and 3) even if temperatures downstream of the Merced are not affected, changes to flow could alter the amount of time that migratory fish are exposed to sub-optimal temperatures. State Water Board staff suggests evaluating the duration of exposure to sub-optimal temperatures that migratory fish would likely experience under each of the project alternatives. Reducing flows and velocities may create indirect temperature impacts to migratory fish in the San Joaquin River and this can only be evaluated by considering duration of exposure.
- For FSH-16, the draft EIS states the following: “in the San Joaquin River at Vernalis, project-related flow reductions are generally greatest in late winter and spring. However, for all months at both locations, flow reductions greater than 5 percent to 10 percent only occur in years when river flows are well above average, with essentially no change at times when flows are at or below the median monthly flow.” Flow reductions that occur in years when the river flows are well above average may be important to native fish and should not be discounted. Please provide additional information on the changes to the

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<sup>2</sup> cbec. 2010. San Joaquin Floodplain inundation mapping. Memorandum. cbec, inc, Sacramento, California. 24pp. Report provided in Appendix 4 of Comments pertaining to the "Scientific Basis for Developing Alternate San Joaquin River Delta Inflow Objectives" described in the State Water Resources Control Board's October 29, 2010, Draft Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives. Prepared on behalf of the San Joaquin River Group Authority. December 6, 2010.



frequency of flows by month for each alternative and additional justification for the less than significant impact determination.

- For FSH-18, please provide additional justification for the statement, “therefore, effects on water temperature and DO would be minimal and adverse effects on fish habitat would be minor.” Provide additional detail describing the anticipated changes to water temperature and DO levels in the Delta resulting from the project alternative and why they are not significant. There are many other instances where changes are described as minimal or minor but are not quantified. State Water Board staff recommends quantifying the description of changes when possible. Further, other impact evaluations in Chapter 5 indicate that the project alternatives do not change water temperatures in the Lower San Joaquin River, but the statement above indicates that there are potential temperature changes that can occur as far downstream as the Delta. Please explain.
- The EIS should clarify whether the project will change the instream temperature profile upstream of Friant Dam, particularly during critically dry years, as it relates to fish protection.

#### Botanical and Wetlands

- Surveys should be completed outside of the primary study area to determine the presence of, and impacts to any special-status plant species from the development of project features and new transmission line corridors.
- For the mitigation measure to impact BOT-1, areas designated for establishment of relocated species need to be analyzed for suitability.
- For the mitigation measure to impact BOT-4, please provide justification that implementation of a weed management plan for three seasons after construction is adequate.

#### Water Right Issues

- In Chapter 28 the EIS states, “by letter dated August 7, 2014, the State Water Board staff informed Reclamation that Reclamation would have to seek revision of the Fully Appropriated Streams Declaration (State Water Board Order 89-25, Exhibit A) pursuant to Title 23 of the CCR, Section 871, along with the submittal of a proposed application for a new water right (see: CWC Section 1202, et seq. and Title 23 of the CCR, Section 650 et seq.) for operation of the proposed project. The proposed application could not be accepted or processed until the State Water Board adopts the order changing the Declaration.” After public notice of the proposed water right application, the State Water Board may receive protests which may result in additional requirements for the project. Reclamation is requesting an additional storage capacity of 1,260 thousand acre-feet at the new reservoir. The full face value of the water right application should be evaluated in the EIS.
- The EIS should describe the new water rights and permits needed for the proposed project and any associated environmental effects, including the intended collection

season for the reservoir, points of diversion, points of rediversion, and any other provisions needed for a viable project.

- To facilitate the State Water Board's consideration of water right related issues associated with this project, State Water Board staff requests that the EIS provide additional information regarding potential injury to other legal users of water, including potential injury to diverters downstream of Friant. While discussion of water right related issues is not necessarily required by CEQA or NEPA, this information will be needed to inform any future water right applications or related water right actions for this project. Such analyses are closely related to the environmental effects of the project and are thus conveniently discussed in the environmental document for the project.
- The EIS should provide an analysis of the availability of unappropriated water (including diversion season and release requirements), to substantiate that water is available to appropriate, in excess of the quantities required to remain instream. The analysis should be on a minimum monthly time step, and should include all hydrologic year types.
- The EIS should identify where water will be transferred and evaluate any potential impacts associated with the transfers (point of diversion/rediversion, biological opinions etc.).

Please contact Patricia Fernandez at (916) 319-9141 or [patricia.fernandez@waterboards.ca.gov](mailto:patricia.fernandez@waterboards.ca.gov), if you have any questions or would like to discuss this matter further.

Sincerely,

*ORIGINAL SIGNED BY*

Diane Riddle, Manager  
Hearings & Special Program Section  
Division of Water Rights

# **EXHIBIT 3**



EDMUND G. BROWN JR.  
GOVERNOR



MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

## State Water Resources Control Board

AUG 07 2014

In Reply Refer to:  
KDM:A005638

U.S. Bureau of Reclamation  
c/o Mr. Robert Colella  
2800 Cottage Way, MP-400  
Sacramento, CA 95825-1898  
[RColella@usbr.gov](mailto:RColella@usbr.gov)

Dear Mr. Colella:

TEMPERANCE FLAT RESERVOIR PROJECT – U.S. BUREAU OF RECLAMATION (RECLAMATION) PERMITS 11885, 11886 AND 11887 (APPLICATIONS 234, 1465, AND 5638), SAN JOAQUIN RIVER IN MADERA AND FRESNO COUNTIES

On July 17, 2014, State Water Resources Control Board (State Water Board) staff from the Division of Water Rights (Division) Amanda Montgomery, Greg Brown and Kathy Mrowka met with Reclamation staff Sharon McHale and you and MWH consultants Jamil Ibrahim and Yung-Hsin Sun. At that time, the issue arose whether it would be possible to file a change petition to use the as-yet undeveloped portion of the water rights permit for the Friant Project for the Temperance Flat Reservoir Project (Temperance Flat), and Division staff agreed to research the question further and to follow-up. Upon further consideration, this option is not viable. A change petition for a permit or licensed may be approved only insofar as the change does not unreasonably harm public trust uses, injure other legal users of water, or result in initiation of a new right. Because the addition of Temperance Flat would allow additional diversion beyond that possible with the currently permitted facilities it would initiate a new right. (See State Water Board Order 2009-0061, pp. 5-7 [discussing when a proposed change initiates a new right].)

Division staff has evaluated whether Temperance Flat could be pursued under a new appropriative right. The San Joaquin River is listed in the Declaration of Fully Appropriated Streams (Declaration) as fully appropriated throughout the year based on State Water Board Decision 935. (State Water Board Order WR 89-25, Exhibit A.) Decision 935 authorized issuance of the permits for the Friant Project. If the Friant Project is licensed, and water allocated to the project in Decision 935 has not been used, if Reclamation no longer wishes to pursue continued development of the permitted amounts discussed in Decision 935, or if other information indicates that water is available, Reclamation may seek a revision of the Declaration of Fully Appropriated Streams on the basis of changed circumstances. (Cal. Code Regs., tit. 23, sec. 871.) Revision of the Declaration requires: (a) a finding by the Deputy Director for Water Rights that there is cause to revise the Declaration, and (b) an order by the State Water Board modifying the Declaration. If Reclamation pursues this option, it may submit a water right application with its request to revise the Declaration. The application could not be processed until and unless the Declaration is revised. However, the proposed application would be assigned a priority superior to that for subsequently submitted applications, should the Board

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

AUG 07 2014

Mr. Robert Colella

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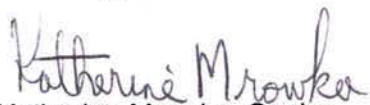
revise the Declaration of Fully Appropriated Streams such that the application could be accepted.

During the meeting, Reclamation informed the Division that the Department of Water Resources (DWR) will be the California Environmental Quality Act (CEQA) lead agency. Reclamation anticipates that a National Environmental Policy Act document will be circulated in September, 2014. The CEQA document will be circulated at a later date by DWR.

The briefing was very informative. We appreciated the opportunity for early information on the project.

If you require further assistance, I can be contacted at (916) 341-5363 or by email at [kathy.mrowka@waterboards.ca.gov](mailto:kathy.mrowka@waterboards.ca.gov). Written correspondence should be addressed to me at the following address: State Water Resources Control Board, Division of Water Rights, Attn: Katherine Mrowka, P.O. Box 2000, Sacramento, CA 95814.

Sincerely,



Katherine Mrowka, Senior  
Inland Streams Unit  
Division of Water Rights

# **EXHIBIT 4**





UNITED STATES DEPARTMENT OF  
COMMERCE National Oceanic and  
Atmospheric Administration  
NATIONAL MARINE FISHERIES  
SERVICE West Coast Region  
650 Capitol Mall, Suite 5-100  
Sacramento, California 95814-4700  
OCT 27 2014

Melissa Harris  
Project Manager  
Planning Division  
U.S. Bureau of Reclamation 2800  
Cottage Way, MP-700  
Sacramento, California 95825-1893

Dear Ms. Harris:

This letter is in response to the September 5, 2014, public draft of the U.S. Bureau of Reclamation (Reclamation) Draft Environmental Impact Statement (DEIS) for the Upper San Joaquin River Basin Storage Investigation (USJRBSI), California. NOAA's National Marine Fisheries Service (NMFS) has reviewed the portions of this draft regarding anadromous fishes under our jurisdiction, and we are providing comments on the analysis as it relates to those sections. As a Cooperating Agency under the National Environmental Policy Act (NEPA), we propose to work closely with Reclamation to evaluate key sections of the Final Environmental Impact Statement prior to release. We view the analyses presented in the DEIS as foundational for additional analysis necessary to support the Endangered Species Act (ESA) and essential fish habitat (EFH) consultations for the proposed action.

Our comments are summarized here and more fully explained in the enclosure:

- The San Joaquin River downstream of Friant Dam is designated as EFH for Pacific salmon (*Oncorhynchus tshawytscha*). The DEIS does not analyze impacts of the project on fall-run Chinook salmon, which is necessary to analyze adverse effects to EFH.
- The DEIS does not include analysis of impacts of the project on California Central Valley steelhead (*Oncorhynchus mykiss*). Through actions of the San Joaquin River Restoration Program (SJRRP), steelhead are expected to establish in the San Joaquin River below Friant Dam. Impacts to California Central Valley steelhead should be assessed using a modeling approach.
- The analysis uses EDT as the only modeling tool to assess impacts to Central Valley (CV) spring-run Chinook salmon, in a manner that likely exceeds the reliability of the model outputs to determine effects. We suggest that additional modeling approaches (e.g. SALSIM, life cycle modeling) be utilized to assist Reclamation in determining effects.





- NMFS is concerned that the DEIS temperature analyses do not use the proper threshold temperatures for different life stages of CV spring-mn Chinook salmon, and that "mean daily temperature" is not biologically relevant to assess impacts to salmonids.
- The DEIS does not analyze the effect of the proposed project on historical habitat for anadromous fish above Friant Dam. The NMFS Recovery Plan for California Central Valley salmonids (NMFS 2014) identifies the need for an additional independent population of California Central Valley steelhead (beyond the Calaveras River) in the San Joaquin River basin. Recovery actions identify the need to assess the feasibility of steelhead reintroduction in upper watersheds in the San Joaquin River Basin, including above Friant Dam. The proposed project would complicate implementation of this action and alter potential habitats for steelhead. The Temperance Flat Reservoir would inundate tributary waterways below Kerckhoff Dam that are presently used by resident *O. mykiss* and potentially used in the future by anadromous *O. mykiss*.
- The DEIS does not adequately address the impact of the project on flood flows, and on habitat conditions for salmonids related to those flood flows. An evaluation of flood flows should include the environmental functions of flood flows and how changes in flood flow releases will modify Delta water export operations.

In addition to a further explanation of these key concerns summarized above, we offer some specific comments and suggestions in the enclosure.

Thank you for the opportunity to comment on this important document. In the short-term, if you have any questions regarding our input, please contact Ms. Sierra Franks at [sierra.franks@noaaigov](mailto:sierra.franks@noaaigov), or (916) 930-3727. We would like to meet with you and discuss modeling tools and other methods to respond to our comments. We will contact you soon to schedule a working session.

Sincerely,



Maria Rea  
Assistant Regional Administrator  
California Central Valley Area Office

Enclosure

cc: Copy to file: ARN 151422WCR2014SA00262

## Enclosure 1

The following provides more details and clarifications to the overarching issues with the analysis provided in the U.S. Bureau of Reclamation's Draft Environmental Impact Statement for the Upper San Joaquin River Basin Storage Investigation.

**Essential Fish Habitat:** The effect of the operation of Temperance Flat Dam and Reservoir on fall-run Chinook salmon was not analyzed nor discussed. The San Joaquin River below Friant Dam is designated as essential fish habitat for Pacific Salmon (which includes fall-run Chinook salmon) defined in Amendment 14 of the Pacific Salmon Fishery Management Plan pursuant to the Magnuson-Stevens Fishery Conservation and Management Act. An analysis should be performed to examine the effect of Temperance Flat Dam on fall-run Chinook salmon in the San Joaquin River.

**California Central Valley Steelhead:** The effect of the operation of Temperance Flat Dam and Reservoir on California Central Valley steelhead was not analyzed. Self-sustaining populations of steelhead are expected to be reestablished in the Restoration Area of the San Joaquin River through actions of the SJRRP and would therefore be affected by the project. A modeling analysis should be performed to examine the effect of Temperance Flat Dam on steelhead in the San Joaquin River.

One of the recovery actions for Central Valley steelhead in the San Joaquin River, recommended by the Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-run Chinook Salmon and Central Valley Spring-run Chinook Salmon and the Distinct Population Segment of California Central Valley Steelhead (NMFS 2014), is to evaluate the feasibility and habitat conditions for steelhead reestablishment above Friant Dam. Construction of Temperance Flat Dam would inundate the San Joaquin River below Kerckhoff Dam and prevent steelhead from being able to reestablish above Friant Dam in this section of river. The loss of a section of river where steelhead could potentially be reestablished by construction of Temperance Flat Dam should be acknowledged. The presence of rainbow trout in the San Joaquin River between Kerckhoff Dam and Millerton Lake suggests that there is suitable habitat for steelhead in that section of river.

### **EDT Model:**

The limitations, uncertainty, and assumptions of the EDT model are not described in the DEIS. In addition, EDT is largely based on professional judgment and not empirical data. The data used to develop EDT came largely from spring-run Chinook salmon populations in the Pacific Northwest. River habitats, as well as spring-run Chinook salmon life history strategies, are quite different between the Pacific Northwest and California. The EDT version used in this analysis was based on some Central Valley Chinook salmon data inputs but none of the data were from the San Joaquin River or its tributaries. San Joaquin River basin fall-run Chinook salmon survival data, for example, could be used as a surrogate to better emulate salmon habitat conditions in the San Joaquin River.

McElhany *et al.* (2010) and Steel *et al.* (2009) strongly recommended performing sensitivity analyses in order to understand the variability of EDT model prediction results. No sensitivity analyses were performed for the EDT model results for the effect of Temperance Flat Dam on conditions in the San Joaquin River below Priant Dam for spring-run Chinook salmon. Prediction intervals for the EDT-based estimates of abundance, productivity, and capacity have been shown to be large (McElhany *et al.* 2010, Steel *et al.* 2009); McElhany *et al.* (2010) suggested that EDT is not appropriate for many management decisions due to this issue. Large prediction intervals for EDT outputs suggest that actual effects of a project could vary widely. For the San Joaquin River, the largest increase in weighted average abundance (4.9%) is for Alternative Plan 4 under the high smolt-to-adult return rate (SAR) condition. However, assuming the large prediction intervals associated with this estimate, the change in weighted average abundance for Alternative 4 with high SAR is expected to be between -5.1% and 14.9%. In this example, the alternative that was predicted to provide the largest modeled benefit for spring-run Chinook salmon (4.9%) could have either a much more positive or notable negative effect on spring-run Chinook salmon in the San Joaquin River. Knowing the prediction intervals for modeled results allows for greater confidence in the range of modeled results. The modeled benefits to San Joaquin River spring-run Chinook salmon from construction of Temperance Flat Dam are small for all alternatives in most years and overall. Large prediction intervals around these small benefits, as produced by EDT, show that there is large uncertainty in the effects of Temperance Flat Dam on spring-run Chinook salmon.

The EDT model for the San Joaquin River was run with high and low SAR values for spring-run Chinook salmon. However, without knowing the values used for high and low SAR and how they were derived, we cannot evaluate their suitability for use in the San Joaquin River. There are studies that have examined salmonid survival through the lower San Joaquin River. Buchanan *et al.* (2013) found very low survival rates (0.05) for acoustically-tagged juvenile Chinook salmon through the San Joaquin River Delta during 2010. A very low survival rate for juvenile Chinook salmon through the Delta suggests that spring-run Chinook salmon that migrate from Reach 1 of the San Joaquin River upstream of the Delta would have an exceedingly low SAR. The limited data on juvenile Chinook salmon survival in the San Joaquin River bring into question the suitability of using a high SAR. In addition, SAR is naturally highly variable from year to year depending on many conditions, particularly environmental conditions in the river and ocean, as well as Delta water operations.

The EDT model predicts abundance of salmon for a single year based on data input for that year (whether it was wet, normal, dry, critical, *etc.*). However, population dynamics of salmon are not static, as what happens in one year effects populations in following years. It would be valuable to evaluate effects of the project on spring-run Chinook salmon using a model, such as SALSIM, that has multi-year sequential modeling that allows for examination of the salmon population trajectory over time.

The EDT modeling analysis assumes "as built" conditions for both Temperance Flat Dam and the SJRRP. However, these are both long term projects and the timing of construction of SJRRP projects and Temperance Flat Dam could have an effect on the reestablishment of salmonid populations. The potential effect of the timing of construction of Temperance Flat Dam, as well

as SJRRP construction projects, to salmonids cannot be evaluated using EDT and is not discussed nor analyzed in the DEIS.

### **Temperature Impacts Analyses:**

**Selective Level Intake System (SLIS):** As a result of the benefits of having a SLIS to fisheries resources below Friant Dam, and particularly for the salmon reintroduction effort by the SJRRP due to improved water temperature conditions, a SLIS should be included in all of the alternatives, and not just Alternative 4.

**Water Temperature Below Friant Dam:** The temperature analyses in the DEIR evaluate impacts using the metric of Mean Daily Temperature for assessing impacts to salmon. This metric can have limited biological relevance, as it can mask the occurrence and duration of maximum daily temperatures that are unsuitable for salmonids. The HEC-5Q temperature model can be adapted to evaluate temperatures using the metric of "Maximum Daily Seven-Day Average," which is a biologically relevant metric (USEPA 2003), and the temperature analysis should be revised using this metric.

The use of 55 degrees Fahrenheit (°F) as the threshold water temperature for spring-run Chinook salmon benefits is not appropriate. Different life stages of spring-run Chinook salmon have different threshold water temperatures, and this should be recognized and discussed in the DEIS. Water temperature analyses should be re-done using different water temperature thresholds for different life stages. The water temperature thresholds used by the SJRRP for spring-run Chinook salmon in the San Joaquin River are the following (SJRRP 2010 Fisheries Management Plan Exhibit A, Table 3-1): 1) Adult migration from March through June; optimal is 5. 57°F and upper limit is 5\_ 64°F (upper portion) and 5 68°F (lower portion), 2) Adult holding from April through September 5 59°F, 3) Adult spawning from August through October .5 57°F, 4) Egg incubation and emergence from August through December 5 55°F, 5) In-river fry and juvenile rearing all year; optimal 5\_ 59°F and upper limit (during early rearing) 5. 61°F and upper limit (during late rearing) .5. 64°F, and 6) Juvenile outmigration from January through June; optimal .5 56°F and upper limit 5 59°F.

### **Upstream Fish Passage and Climate Change:**

Riverine habitat upstream of Millerton Reservoir and downstream of Kerckhoff Dam that is used by rainbow trout, American shad, and striped bass for spawning will be inundated if Temperance Flat Dam is constructed. The riverine habitat will be turned into reservoir habitat that does not serve as spawning habitat for these three species. The loss of spawning habitat for these species is considered not mitigatable in the DEIS. Removal of Kerckhoff Dam to allow fish access to riverine habitat could serve as mitigation, but this idea was not explored in the DEIS.

The building of Temperance Flat Dam would preclude any future opportunities to return listed salmonids to part of their historical habitat above Friant Dam. Evaluating the reestablishment of steelhead above Friant Dam is one of the proposed recovery actions for steelhead in the San Joaquin River (NMFS 2014) and could make the steelhead population in the San Joaquin River

more resilient to climate change. While reestablishing Chinook salmon and steelhead above Friant Dam is not a proposed or planned action at present, future climate conditions could increase the need for Chinook salmon and steelhead to access such habitats. See "California Central Valley Steelhead" section, above.

### **Flood Flows:**

The operation of Temperance Flat Dam and Reservoir under all of the Action Alternatives will reduce the frequency, magnitude, and duration of flood flows below Friant Dam. Flood flows have many benefits for spring-run Chinook salmon, steelhead, and other native fishes that would be reduced or eliminated by the project. Flood flows, by definition, inundate the floodplain and create significant favorable habitat for juvenile spring-run Chinook salmon. Studies in the Cosumnes and Sacramento (Yolo Bypass) rivers have shown increased growth (Jeffres *et al.* 2008) and enhanced growth and survival (Sommer *et al.* 2001) of juvenile Chinook salmon that reared on floodplains. In addition, many studies have found a correlation between smolt survival to the ocean and high river flows (Kjelson and Brandes 1989, Moyle and Yoshiyama 1997, Smith *et al.* 2003, Connor *et al.* 2003). The benefit of flood flows and floodplain rearing for juvenile spring-run Chinook salmon is mentioned in the DEIS, but the effect of reduction in magnitude, frequency, and duration of flood flows due to Temperance Flat Dam on Chinook salmon and steelhead need to be analyzed.

Reduction in frequency, magnitude, and duration of flood flows in the San Joaquin River below Friant Dam would also negatively affect fall-run Chinook salmon and steelhead smolts that are emigrating out of tributaries to the San Joaquin River. The effect of altered flood flows due to Temperance Flat Dam on salmonid smolts emigrating out of San Joaquin River tributaries should be analyzed.

Flood flows also have geomorphic effects that benefit salmonids, anadromous fish habitat, and the overall river ecosystem. Flood flow helps to clean and reorganize sediment and the channel to create high quality spawning and rearing habitats. In addition, riparian vegetation recruitment is enhanced by flood flows. These geomorphic effects should be analyzed.

The reduction in frequency, magnitude, and duration of flood flows below Friant Dam due to construction of Temperance Flat Dam would affect conditions in the Delta and may affect water supply and Delta pump operations. The effect of altered flood flows to conditions in the Delta and potential effects on water supply and Delta pump operations should be discussed.

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# **EXHIBIT 5**



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

OCT 30 2014

David G. Murillo  
Regional Director  
Bureau of Reclamation, Mid-Pacific Region  
2800 Cottage Way  
Sacramento, CA 95825-1898

Subject: Upper San Joaquin River Basin Storage Investigation Draft Environmental Impact Statement, Fresno and Madera Counties, California [CEQ# 20140260]

Dear Mr. Murillo:

The U.S. Environmental Protection Agency has reviewed the Draft Environmental Impact Statement for the Upper San Joaquin River Basin Storage Investigation. Our review and comments are pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. This DEIS tiers from the CALFED Record of Decision signed in 2000, and analyzes one of the five surface water storage studies recommended in the 2000 ROD, a dam and reservoir at Temperance Flat River Mile 274.

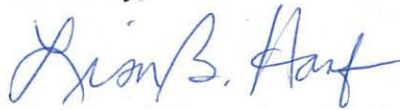
The DEIS evaluates five action alternatives that vary in terms of the carryover storage targets of Temperance Flat Reservoir and Millerton Lake, allocation and conveyance routing of water among various users, and intake feature configurations. We understand that Reclamation plans to identify a preferred alternative in the Final EIS.

Based on our review of the DEIS, we have rated all the Action Alternatives and the document as *Environmental Objections – Insufficient Information (EO-2)*. Please see the enclosed "Summary of EPA Rating Definitions." Our rating is based on the project's significant impacts to aquatic resources and water quality. The DEIS identifies that the project would impact 245 acres of waters of the United States, 9 miles of riverine habitat, and 5,757 acres of oak woodland; however, the DEIS does not identify or discuss sufficient mitigation for these impacts. EPA recommends that the FEIS include additional information about impacts to waters of the U.S., an update to the impact analysis for aquatic resources and surface water quality, and identification of additional appropriate mitigation measures. Because the upper San Joaquin River is a vital part of California's water supply, economy, and environment, it is critical that impacts be further avoided and minimized, and that mitigation be proposed for those impacts that cannot be avoided. While Reclamation has chosen not to synchronize the NEPA analysis with the requirements of the Clean Water Act Section 404 process, we note that Reclamation will be required to demonstrate compliance with the CWA Section 404(b)1 Guidelines prior to obtaining a CWA Section 404 permit for this project.

Further, since the project tiers to the 2000 CALFED ROD, EPA recommends that the FEIS provide a discussion of past, current, and future projects and achievements under the ROD, along with updated analyses of current environmental conditions, water supply, and projected demand. The additional context and updated analyses are needed to demonstrate that the current project remains a timely and viable component of an overarching program to meet the goals of CALFED, including restoring ecological health and improving water management with beneficial uses of the Bay-Delta System. Our detailed comments further describing these recommendations are enclosed.

We appreciate the opportunity to review and comment on this DEIS, and are available to discuss the recommendations provided. When the FEIS is released for public review, please send one hard copy and one CD to the address above (Mail Code: ENF 4-2). Should you have any questions, please contact me at (415) 972-3854, or contact Jean Prijatel, the lead reviewer for the project. Jean can be reached at (415) 947-4167 or [prijatel.jean@epa.gov](mailto:prijatel.jean@epa.gov).

Sincerely,



Lisa B. Hanf, Assistant Director  
Strategic Planning, Enforcement Division

Enclosures: Summary of EPA Rating Definitions  
EPA Detailed Comments

cc: Michael Nepstad, U.S. Army Corps of Engineers  
Mark Littlefield, U.S. Fish and Wildlife Service  
Rhonda Reed, National Oceanic and Atmospheric Administration, West Coast Region  
Tracy Rowland, Department of the Interior, Bureau of Land Management

## 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.

### Tiering to CALFED

The Upper San Joaquin River Basin Storage Investigation DEIS is tiered from the CALFED Bay-Delta Program Final Programmatic Environmental Impact Statement/Environmental Impact Report and Record of Decision, signed in 2000. The DEIS acknowledges that the CALFED ROD states “developed plans should address the goals, objectives, and programs of the CALFED ROD” (p. 2-13). The DEIS addresses the CALFED goals and guidance for the surface water storage aspects of the program, but does not address how surface water storage currently fits within the overall implementation of CALFED programs.

The program outlined in the CALFED ROD was a set of goals and spending priorities designed to resolve longstanding conflicts over ecological health and water management in the Delta by addressing an interlocking set of problem areas: water quality, ecosystem quality, water supply reliability, and levee integrity. The CALFED ROD also laid out a complex governance mechanism to assure that programs in all four areas would move forward together as it acknowledged “problems in any one program area cannot be solved effectively without addressing problems in all four areas at once” (p. 10). Although significant projects were funded under the CALFED umbrella, it has been documented that support for the CALFED process and governance mechanisms dissipated with federal and state administration changes and reductions in anticipated funding.<sup>1 2</sup> Nevertheless, the CALFED PEIS and related Appendices contain a wealth of analyses. These analyses are, however, over fifteen years old, raising the issue of the current validity of those analyses for projects intending to tier to the ROD.

EPA is specifically interested in a status update of the CALFED programs that would describe current water efficiency programs, ecosystem restoration, conveyance improvements, groundwater and surface water storage programs, and studies of current water supply and demand to provide context for the current proposal’s purpose and need for action. The Cumulative Effects analysis on page 27-2 states that the DEIS takes into account CALFED projects that have been implemented, but this section does not identify which projects are CALFED programs and does not relate the projects back to the purpose and need or alternatives development of the DEIS. The action alternatives developed for this DEIS “fundamentally consist of constructing new surface water storage facilities” (p. 2-4) in the Upper San Joaquin River, as increased surface water storage is the program component tiered from CALFED.

**Recommendation:** Assess if substantive new and/or more current data, since the conclusion of the 2000 CALFED process, is available to update prior analyses and characterizations of Delta and San Joaquin River watershed conditions. In the FEIS, include any new findings of current data, and update analyses where applicable. The Council on Environmental Quality has provided guidance for federal agencies on implementing NEPA, including how to use dated EIS material in subsequent decision-making (Question 32 of the CEQ’s “Forty Most Asked Questions Concerning CEQ’s NEPA Regulations”).<sup>3</sup>

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<sup>1</sup> The Little Hoover Commission’s *Still Imperiled, Still Important* (Nov. 2005) [www.lhc.ca.gov/studies/183/report183.html](http://www.lhc.ca.gov/studies/183/report183.html)

<sup>2</sup> California Department of Finance Report A Fiscal Review: *CALFED Bay-Delta Program Summary of Expenditures Implementation Status of the CALFED Bay-Delta Program, Years 1-5* (Oct. 2005), available at [www.calwater.ca.gov/content/Documents/CBDA\\_Fiscal-Review\\_Final%20.pdf](http://www.calwater.ca.gov/content/Documents/CBDA_Fiscal-Review_Final%20.pdf)

<sup>3</sup> <http://energy.gov/sites/prod/files/G-CEQ-40Questions.pdf>

The FEIS should also include the implementation status and an evaluation of proposed actions for the CALFED ROD programs addressing all four problem areas. CALFED Bay-Delta Program Plans were published annually until 2009 and provide updates on program implementation through that time.<sup>4</sup> EPA recommends that Reclamation use these Plans as the foundation for further evaluation in the FEIS.

The FEIS should provide an update and evaluation of CALFED programs, objectives, and analysis to validate the narrow purpose and need and focused range of alternatives for the project. The effectiveness (e.g., efficiency, cost-benefit) of the action alternatives in meeting the purpose and need for the project should be evaluated against other projects and programs under CALFED.

#### **Clean Water Act, Section 404**

EPA agrees with the DEIS's assessment that a Clean Water Act, Section 404 permit will be required for any of the action alternatives described. The action alternatives will result in 245 acres of direct impacts to waters of the U.S., due to the inundation of riverine, ephemeral and intermittent drainages, vernal pools, swales, seasonal wetlands, and seeps. EPA typically encourages integration of the NEPA and CWA Section 404 permitting process to reduce overall project review timelines and to provide more thorough analysis of potential aquatic resource impacts through the NEPA process.

We understand that Reclamation intends to provide a summary of this DEIS to the U.S. Army Corps of Engineers and EPA to satisfy the terms of the CALFED PEIS/R CWA Section 404 Memorandum of Understanding (p. 28-12). Consistent with the MOU, EPA believes additional information not included in the DEIS will ultimately be necessary for the Corps to make any findings of compliance with the 404(b)(1) Guidelines<sup>5</sup> and issue an individual permit. The DEIS is unclear about what additional information Reclamation will provide to demonstrate compliance with the Guidelines, and when that information is anticipated to be provided. We have identified several issues that will require further review for a Section 404 permit evaluation.

***Recommendations:*** A Section 404 permit analysis will need to evaluate the extent to which the previous CALFED PEIS analysis is still valid. Such an evaluation will also need to include a discussion of how the analysis and current conditions relate to the CALFED CWA Section 404 MOU. The FEIS should describe Reclamation's expectations for how the FEIS and/or future documents will be used for the CWA compliance processes.

While NEPA requires a discussion of mitigation options, Section 404 will require demonstration of avoidance and minimization of impacts, as well as mitigation commitments secured, prior to permit issuance. EPA recommends that Reclamation make every effort to list and evaluate all practicable Section 404 mitigation actions in the FEIS. Section 404 permitting will also require a formal delineation of waters of the U.S. EPA further recommends that Reclamation include a map of delineated waters of the U.S. and impacts in the FEIS to streamline future Section 404 compliance efforts.

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<sup>4</sup> <http://calwater.ca.gov/calfed/plans/index.html>

<sup>5</sup> The purpose of the Section 404(b)(1) Guidelines (Guidelines) is to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material. These goals are achieved, in part, by prohibiting discharges of dredged or fill material that would result in avoidable or significant adverse impacts to the aquatic environment. The responsibility to demonstrate compliance with the Guidelines rests with the permit applicant.



The Plan Formulation Appendix of the DEIS will be useful in determining the least environmentally damaging practicable alternative for the Section 404 permit. Water conservation and efficiency measures that were dismissed in the Plan Formulation phase of the DEIS should be explained in detail in the FEIS. EPA recommends the use of the American Water Works Association Free Water Audit Software to conduct a top-down water audit to identify opportunities for conservation. More information regarding water efficiency measures and their implementation can be found on EPA Region 9's website,<sup>6</sup> and are also described in the "EPA Region 4 Guidelines on Water Efficiency Measures for Supply Projects in the Southeast, 2010."<sup>7</sup>

EPA recommends that Reclamation minimize impacts to native aquatic life upstream of Millerton Lake, and provide information to support the beneficial impacts to salmon and native fish downstream of Friant Dam expected by the purpose statement.

The project is estimated to impact a total of 245 acres of waters of the United States. Because of the large quantity of acres lost, it is critical that mitigation for these resources be described in the FEIS. Pursuant to the Section 404(b)(1) Guidelines, mitigation of project impacts begins with the avoidance and minimization of direct, indirect, and cumulative impacts to the aquatic ecosystem, followed by compensatory measures if a loss of aquatic functions and/or acreage is unavoidable. The DEIS commits to developing a draft wetland mitigation and monitoring plan for the project to be approved by the U.S. Army Corps of Engineers and the Central Valley Water Board prior to the issuance of a Section 404 permit (p. 6-93). Under the current proposal, significant impacts to aquatic resources such as native fish are unmitigated, because the DEIS states opportunities to mitigate are unavailable. EPA is available to assist Reclamation in scoping appropriate and practicable mitigation.

***Recommendations:*** In the FEIS, provide a draft of the detailed mitigation and monitoring plan that complies with the 2008 Mitigation Rule.<sup>8</sup>

For mitigation planning purposes, describe in the FEIS potential measures that are likely practicable and which should be explored, including the permanent protection and/or restoration of other ecologically comparable riverscapes that support similar assemblages of fishes and other native aquatic organisms. There are likely many available mitigation opportunities in the foothills of the southern Sierra Nevada. Opportunities could be explored to partner with local agencies and organizations to identify and acquire conservation easements from willing sellers on natural lands in the vicinity of the proposed project, where large tracts are at risk of being subdivided, and where induced growth from the proposed project is likely. Opportunities for restoration of riparian corridors, springs, and meadows in the watershed should also be explored.

The degradation of salmon habitat downstream of Friant Dam by increasing temperatures in the spring and reducing flows should also be minimized and mitigated in these segments. Appropriate mitigation could include riparian restoration and/or other habitat enhancement measures above and beyond what the San Joaquin River Restoration Program has funding to achieve.

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<sup>6</sup> [www.epa.gov/region9/waterinfrastructure/waterconservation](http://www.epa.gov/region9/waterinfrastructure/waterconservation)

<sup>7</sup> [www.epa.gov/region4/water/wetlands/documents/guidelineso\\_wate\\_efficienc\\_measures.pdf](http://www.epa.gov/region4/water/wetlands/documents/guidelineso_wate_efficienc_measures.pdf)

<sup>8</sup> [water.epa.gov/lawsregs/guidance/wetlands/upload/2008\\_04\\_10\\_wetlands\\_wetlands\\_mitigation\\_final\\_rule\\_4\\_10\\_08.pdf](http://water.epa.gov/lawsregs/guidance/wetlands/upload/2008_04_10_wetlands_wetlands_mitigation_final_rule_4_10_08.pdf)

## Water Quality Impacts

EPA is concerned that the DEIS does not clearly define criteria for determining significant effects to water quality. The terms “substantially degrading water quality,” “substantial water quality changes,” and “substantive undesirable impacts” should be defined. For some parameters where the waterbodies in question are already violating water quality standards (such as temperature and electrical conductivity in some stretches of the river), the waterbody does not have any additional assimilative capacity for further degradation.

**Recommendation:** The FEIS should clearly define criteria of significance for water quality impacts. For areas where waterbodies are already violating water quality standards, identify measures to minimize and avoid further degradation as much as possible. EPA recommends that further degradation in these instances should be characterized as “significant.”

Water quality in the primary study area for all action alternatives will likely be impacted by inundation of three abandoned gold mines and increased sedimentation from regular filling and drawdown of the proposed reservoir. Impact SWQ-4 suggests that it is not possible to estimate the increase in sedimentation because there are too many variables to consider (p. 15-37), but does conclude that impacts are potentially significant. The DEIS analysis of Impact SWQ-4 also cites a survey indicating that there is a very low probability of “substantial toxic contamination” from the inundated mine sites, but states that further site investigation is necessary to confirm the survey results (p. 15-37).

**Recommendation:** The FEIS should include estimates of sedimentation from regular drawdown and refilling for the Temperance Flat Reservoir using data from existing Friant Dam and Millerton Lake operations. The FEIS should also include the results of a further investigation into the three abandoned mines that will be inundated, and should provide mitigation for any related negative impacts to water quality from acid mine drainage and/or introduction of heavy metals such as mercury.

Kerckhoff dam is currently being periodically sluiced (p. 5-1), which allows sediment to flow downstream. The proposed action alternatives would discontinue this practice, which would potentially lead to increased sedimentation in the San Joaquin River above Kerckhoff dam. These impacts on the aquatic ecosystem have not been evaluated.

**Recommendation:** Analyze the effects of discontinued sluicing of Kerckhoff dam on aquatic ecosystems in the lake and river above the dam, including a description of any increased sedimentation in the San Joaquin River.

While one of the stated project purposes is to enhance water temperature conditions in the San Joaquin River downstream from Friant Dam, the extended study area is likely to have at least a potentially significant effect from temperature degradation during the spring (Impact SWQ-5). It is unclear how the criteria cited in the text that temperatures should not be “increased more than 5°F above the natural receiving-water temperature” (p. 15-43) was analyzed. EPA believes it is unlikely that “natural receiving water temperatures,” i.e., temperatures that would exist without any water diversions, are currently being altered by no more than 5°F under existing conditions, in which case there is no assimilative capacity to allow any additional degradation. Determining the “natural receiving water temperature” is a complex modeling exercise. Rather than using this modeling technique, EPA used the protection of beneficial use to justify listing of several downstream segments of the San Joaquin River on the 2010 CWA 303(d) impaired bodies list. Impacts further degrading the temperatures in these impaired segments of the Extended Study Area would be significant.

**Recommendation:** The FEIS should clarify the assumptions and analysis provided for Impact SWQ-5. Significant impacts to water temperature that violate water quality standards would prevent the project from achieving its objectives and purpose and need.

The Plan Formulation Appendix (p. 40) and alternatives development summary in the DEIS (p. 2-29) state that a temperature control device on Friant Dam was considered as a method to manage cold-water pools and releases into the San Joaquin River. The temperature control device was eliminated from consideration when the Draft Feasibility and Plan Refinement Phase showed that a selective-level intake structure on the proposed Temperance Flat Dam would be more effective. Only Action Alternative 4 includes a SLIS, while it was determined that a SLIS was not cost effective for the action alternatives with lower minimum carryover levels. Alternatives 1-3 and 5 propose a low-level intake structure instead. It is unclear how the LLIS would compare to a temperature control device in terms of effective cold-water pool management.

**Recommendation:** Discuss effectiveness of a LLIS on Temperance Flat Dam as compared to a temperature control device on Friant Dam to manage cold-water pools and temperature of releases to the San Joaquin River below Friant Dam.

The DEIS indicates that salinity levels will not go up more than 2% on a long term average basis in the Delta (p. 15-44). The analysis does not examine whether or not the D-1641 objective and other salinity water quality standards including X2 (enumerated in Table 15-5), will be achieved on a shorter term basis. The text also indicates that the actual operations of the system will achieve D-1641, but does not describe what actions will be taken to do so.

**Recommendation:** Include an analysis of the action alternatives' ability to meet the D-1641, X2, and other salinity water quality standards on a shorter term basis. The selected alternative should demonstrate that these water quality standards are met.

## **Aquatic Resources**

### ***Habitat and Communities in Primary Study Area***

EPA is concerned about the characterizations of existing habitat and fish communities in Millerton Lake and in the proposed dam and reservoir site on the San Joaquin River between Millerton Lake and Kerckhoff Dam.

While the DEIS concludes that gravel in this reach of the San Joaquin River is "probably fairly highly embedded" and therefore of reduced quality and unavailable to fish for spawning (p. 5-2), it appears that no specific stream reach data in the project area has been collected to support this conclusion.

The DEIS classifies and quantifies native fish habitat use in the San Joaquin River between the reservoirs based on stream gradient (greater than or less than 3%) (p. 5-47, 48). The native fishes discussed are known to migrate past and/or use stream reaches with gradients of greater than 3 percent depending on local geomorphic conditions and life history variables. It is not unreasonable to assume that all stream reaches, except perhaps waterfalls or cascades, have the potential to support these native fish species. More information to support this conclusion is needed.

The DEIS discusses how lotic habitat was calculated and evaluated (p. 5-47). Stream fish will utilize lotic habitat when a reservoir pool is at its minimum; fish will then move back upstream as the reservoir pool rises. For this reason, stream length at minimum inundation should also be calculated. EPA recommends using the lengths and areas of different stream habitats (i.e., pools riffles, glides, runs)

along this reach of the San Joaquin River as a metric. This will give a quantitative measure of habitat type lost for native fishes and allow calculations for mitigation that may be required to offset these losses.

The DEIS states that freshwater pearlshell clam was not selected for evaluation because it is known to occur below Friant Dam while at the same time stating its overall distribution and abundance is poorly known (p. 5-4). EPA believes the occurrence of freshwater pearlshell clams is important because native freshwater mussels in California are very restricted in distribution and their occurrence reflects high quality habitat conditions, especially high water quality. This species is listed as a Special Animal by California Department of Fish and Wildlife.

**Recommendations:** Provide data or describe uncertainty about quality of spawning gravel between Millerton Lake and Kerckhoff Dam. Revise Table 5-4 and the associated discussions to more accurately characterize locations of fish species in the primary study area. Provide additional calculations for lotic habitat estimates, including length, area, and gradient. Include freshwater pearlshell clams in the evaluation of species in the study area.

### ***Effects in Extended Study Area***

The DEIS relies on the EDT model to evaluate the effect of the alternatives on spring-run Chinook salmon habitat potential (p. 5-52). This tool is informative and provides continuity with the analysis conducted for the San Joaquin River Restoration Program; however, prior sensitivity analyses have shown that the “EDT productivity and capacity predictions lack the precision needed for many management applications.”<sup>9</sup> It appears to be more appropriate for use in prioritizing reaches for restoration which is more in line with the San Joaquin River Restoration Programs’ use of the model than the current DEIS. It is a very simplified model that does not look at population trajectories over time; in a more complex model the importance of flood flows in wet years for population recovery would be noticeable. Additionally, the impacts of the project to fall-run Chinook populations should also be analyzed as they are also included in the San Joaquin River Restoration Program. Spring-run are intended to be reintroduced, but fall-run are abundant in the lower San Joaquin and major tributaries and regularly make it around barriers set up to redirect them from heading up towards the upper San Joaquin. Once connectivity is re-established with the delta they will be present in significant numbers.

The Salsim model (<http://www.salsim.com/>) can predict population responses for fall-run Chinook. Additionally, a life cycle model developed for winter-run Chinook salmon in the Sacramento River by Hendrix et al.<sup>10</sup> may also be applicable to this system.

**Recommendation:** In addition to the EDT model, EPA recommends the impact analysis in the FEIS incorporates a model that better forecasts impacts. Impacts to fall and spring-run Chinook salmon should be analyzed and include a sensitivity analysis of each model and its results and appropriate caveats regarding its use.

Temperature conditions downstream of Friant Dam were modeled using the SJRQ5 model to generate estimates of minimum, maximum, and average daily temperatures; however the analysis uses a simulated 7-day running average temperature (p. 5-54). A 7-day average can disguise lethal spikes in temperature for salmonids in various life stages.

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<sup>9</sup> McElhany, P, E.A. Steel, K. Avery, N. Yoder, C. Busack and B. Thompson, 2010. Dealing with uncertainty in ecosystem models: lessons from a complex salmon model.

<sup>10</sup> <https://swfsc.noaa.gov/publications/TM/SWFSC/NOAA-TM-NMFS-SWFSC-530.pdf>

**Recommendation:** In addition to the analysis of average daily temperatures, the maximum daily temperatures from SJRQ5 should be used to compare to the EPA Region 10 Temperature Guidance<sup>11</sup> values for the various life stages of salmonids present in the Extended Study Area. EPA Region 10 Temperature Guidance is expressed as running 7-day average daily maximum values and accounts for the peak temperatures experienced by fish.

The DEIS uses a reduction in river flow of 10% or greater as its threshold of significance for the stretch of river between the Merced River and the Delta (p. 5-60). EPA believes that the basis for choosing a reduction in flow of 10% or above is not supported and that any reduction in flow should be analyzed. The value of flood pulses and flood plain connectivity is important for species survival over multi-year timeframes that include combinations of wet and dry years.

**Recommendation:** Provide an explanation for the use of a 10% reduction in flow as the basis of significance or include analysis of a reduction of flow less than 10% across all segments of the San Joaquin River below Friant Dam.

In evaluating the impacts of the alternatives on the Delta, the DEIS uses a percentage of months method to analyze dissolved oxygen, inflow:export ratios, and combined pumping rates to look for an impact to fish migration in a 3-month window (p. 5-63, 64, 65). It states that dissolved oxygen depletion in the Stockton Deep Water Ship Channel is correlated with flows of less than 2,000 cubic feet per second. EPA agrees that this flow metric is useful, but believes the migration blockage and mortality threat that this situation constitutes is underestimated by using the percentage of months method.

**Recommendation:** Analyze dissolved oxygen, inflow:export ratios, and combined pumping rates on a daily time step basis, rather than on a percentage of months method.

### **Impacts and Mitigation Measures**

All action alternatives will significantly impact 9 miles of riverine habitat in the San Joaquin River above Millerton Lake used by native fishes (p. 5-68). Although rainbow trout, hardhead, pikeminnow, sucker, and hitch use the reservoir, they cannot reproduce and persist in the absence of stream habitat. The DEIS states that no feasible mitigation is available to reduce this impact to riverine habitat for lotic fish species to a less than significant level. Under EPA's 404(b) (1) Guidelines, unavoidable impacts must be fully mitigated. Impacts that cannot be mitigated below the level of significant degradation of the aquatic ecosystem cannot receive a CWA Section 404 permit.

**Recommendation:** Include appropriate mitigation measures in the discussion of Impact FSH-1. EPA is available for consultation. Potential mitigation measures that are likely practicable include the permanent protection and/or restoration of other ecologically comparable riverscapes that support similar assemblages of fishes and other native aquatic organisms. There are likely many available mitigation opportunities in the foothills of the southern Sierra Nevada that may offset proposed project impacts to this reach of the San Joaquin River.

The impacts to habitat potential for spring-run Chinook salmon (Impact FSH-10, p. 5-89 to 94) are based on the EDT model discussed above. EPA's concerns about the EDT model also apply to the conclusion that the model results suggest the action alternatives 1-4 will benefit spring-run Chinook because they significantly *increase* minimum habitat potential during the most extreme conditions. As

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<sup>11</sup> [http://www.epa.gov/region10/pdf/water/final\\_temperature\\_guidance\\_2003.pdf](http://www.epa.gov/region10/pdf/water/final_temperature_guidance_2003.pdf)

seen in Tables 5-7 and 5-8, the model also demonstrates significant *decreases* in habitat productivity, habitat capacity, and equilibrium abundance under several low and high smolt-to-adult return rate (SAR) scenarios for the action alternatives. A different model, such as Salsim, would provide more accurate estimates and conclusions by taking into account the total life history of the population, allowing for exposure to different flow years and physical conditions sequentially.

As written using the EDT model, the DEIS does not contain an analysis of the potential cumulative effects of the alternatives of multiple-year scenarios (e.g., the cumulative population response and impact from three decades of dam operations) or a confidence interval for the model's high and low SAR results. California's climate often contains many dry years clustered together which has important impacts on salmon populations as they typically return to their natal stream three years later. An alternative model or method should use a typical sequence of water years rather than a simple averaging as conducted with the EDT. The DEIS states that EDT abundance results should not be viewed as actual predictions of future population size (p. 5-93), but it then suggests that Alternative Plans 1 through 4 could improve habitat conditions in the San Joaquin River and enhance potential population. Based on the DEIS, an opposite conclusion is also suggested.

***Recommendation:*** Revise the analysis of habitat potential for spring and fall-run Chinook salmon using a more complex model, such as Salsim. Impact analysis and mitigation should be revised to correspond to the new model's output. Discuss cumulative effects of multiple-year scenarios.

The action alternatives will reduce duration of peak and annual average annual flows between 4,000 and 8,000 cfs and above 8,000 cfs relative to the No Action Alternative. These are the types of flows that inundate floodplains. The DEIS states that "the ecological significance of changes in flood pulse frequency exceeding this threshold is unclear" (Impact FSH-14, p. 5-107); however, the DEIS concludes that the reduction in peak flows and flood pulses will have a less than significant impact on spawning and rearing habitat. While it is true that minimum restoration flows in the San Joaquin River Restoration Program would have benefits to salmonids, EPA believes flood pulses at levels higher than the minimum flows set in the San Joaquin River Restoration Program would have added benefits to the salmonids. The benefits to aquatic life from high flows include the flushing of gravels used for spawning and the creation of nursery habitat for juveniles in floodplains.

Juvenile salmon will rear on seasonally inundated floodplains when available. This has been found to increase growth and survival in the Central Valley, specifically in the Yolo Bypass and the Cosumnes River floodplain.<sup>12 13</sup> Those additional benefits would be removed with suppression of peak flows and flood pulses. The modeled peak flows exceeding 8,000 cfs occur in 7 of 82 years under the No Action Alternative and would be reduced by 43% under Alternative Plan 1 (p. 5-106) to only occur in 4 of 82 years with a smaller magnitude and duration. Reducing these peak flows could result in a significant impact on the population that is already flow-limited. According to the State Board,<sup>14</sup> U.S. Fish and

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<sup>12</sup> T. R. Sommer, M.L Nobriga, W.C. Harrell, W. Batham, and W.J. Kimmerer. 2001. Floodplain rearing of juvenile Chinook salmon: evidence of enhanced growth and survival. *Can. J. Fish. Aquat. Sci.* 58: 325-333.

<sup>13</sup> C. A. Jeffres, J. J. Opperman, and P. Moyle. 2008. Ephemeral floodplain habitats provide best growth conditions for juvenile Chinook salmon in California river. *Environmental Biology of Fishes*. Published online June 6, 2008: [www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/deltaflow/docs/exhibits/usdoi/spprt\\_docs/doi\\_jeffres\\_2008.pdf](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/exhibits/usdoi/spprt_docs/doi_jeffres_2008.pdf)

<sup>14</sup> State Water Resources Control Board, 3 Aug. 2010, Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem Prepared Pursuant to the Sacramento-San Joaquin Delta Reform Act of 2009, (2010 Flows Report), available at [http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/deltaflow/docs/final\\_rpt080310.pdf](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf)



Wildlife Service,<sup>15</sup> NMFS,<sup>16</sup> and the California Department of Fish and Wildlife,<sup>17</sup> existing conditions in the San Joaquin River basin are already not adequately protecting aquatic life. All three fisheries agencies identified salmon and steelhead populations as declining under current flow conditions.

**Recommendation:** The FEIS should include a discussion of the remaining uncertainty surrounding the impacts of reduced frequency of flood pulses. EPA recommends that the FEIS describe the benefits of increased flows to aquatic life, including the flushing of gravels used for spawning and the creation of nursery habitat for juveniles in floodplains. Further, we recommend that the FEIS correct the conclusion that the reduction in peak flows and flood pulses will have a “less than significant impact on spawning and rearing habitat”, based on possible benefits to salmonids from additional high flows and flood pulses.

The DEIS concludes that there would be significant impacts under the action alternatives that would increase the duration of exposure to water temperatures that inhibit smolting transformation (Impact FSH-11, p. 5-97). However, the DEIS proposed no mitigation to offset these impacts to a less than significant level. Again, under EPA’s 404(b) (1) Guidelines, unavoidable impacts must be fully mitigated. Impacts that cannot be mitigated below the level of significant degradation of the aquatic ecosystem cannot receive a CWA 404 permit. In addition, the DEIS fails to analyze how significant impacts under FSH-11 might interact cumulatively with impacts discussed under FSH-10 to further negatively affect spring-run Chinook salmon populations.

**Recommendation:** Propose mitigation to reduce impacts to water temperature conditions for juvenile salmon and steelhead migration to less than significant. Analyze how significant impacts under FSH-11 might interact cumulatively with impacts discussed under FSH-10 to further negatively affect spring-run Chinook salmon populations.

The DEIS uses average temperature conditions across all years for all alternative plans when evaluating habitat for moderately and highly tolerant fish species (Impact FSH-12 and 13), which may result in underestimating temperature impacts on these species. Tule perch and riffle sculpin are rarely found, or do well in, temperatures that exceed 77 degrees Fahrenheit for prolonged periods. EPA believes the average 77 degrees Fahrenheit (range 75-84 degrees Fahrenheit) threshold cited in the DEIS as optimal for these species to be too high on average. Similarly, optimal temperatures for hardhead, pikeminnow and, to some extent, splittail ranges from 71-82 degrees Fahrenheit, while the DEIS cites a range of 83-86 degrees Fahrenheit (average 84 degrees Fahrenheit) for these species.

**Recommendation:** Reevaluate the average temperature thresholds for moderately and highly tolerant fish species and update the discussion of expected impacts based on these thresholds.

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<sup>15</sup> “Interior remains concerned that the San Joaquin Basin salmonid populations continue to decline and believes that flow increases are needed to improve salmonid survival and habitat.” USFWS May 23, 2011 Phase I Scoping Comments:[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/bay\\_delta\\_plan/water\\_quality\\_control\\_planning/cmmnts052311/amy\\_aufdenberge.pdf](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/cmmnts052311/amy_aufdenberge.pdf)

<sup>16</sup> “Inadequate flow to support fish and their habitats is directly and indirectly linked to many stressors in the San Joaquin river basin and is a primary threat to steelhead and salmon.” NMFS Feb. 4, 2011 Phase I Scoping Comments: [http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/bay\\_delta\\_plan/water\\_quality\\_control\\_planning/cmmnts020811/010411dpowell.pdf](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/cmmnts020811/010411dpowell.pdf)

<sup>17</sup> “...current Delta water flows for environmental resources are not adequate to maintain, recover, or restore the functions and processes that support native Delta fish.” Executive Summary of California Department of Fish and Game, November 23, 2010, Quantifiable Biological Objectives and Flow Criteria for Aquatic and Terrestrial Species of Concern Dependent on the Delta.

### **Air Quality Impacts**

The Air Quality analysis and General Conformity determination in the DEIS use a worst-case scenario approach and select the action alternative – Alternative 4 – with the most impacts to analyze (p. 4-26). Other action alternatives are assumed to have fewer impacts due to the different intake structure to be constructed, but the scale of those impacts is not discussed. This does not provide a useful comparison for disclosure and informed decision-making. Additionally, the discussion of alternatives references estimates of fuel use, equipment use, and truck trips from the Draft Feasibility Report (p. 2-85, 87), but does not provide a summary of the Report’s analysis and discussion.

Construction, operation, and recreational use of the proposed dam and reservoir are expected to result in significant and unavoidable impacts to greenhouse gas emissions (p. 4-38), even after proposed mitigation measures are implemented. The largest impacts to GHG emissions would be from increased pumping and removal of vegetation that currently provides sequestration benefits. The significance threshold used is the minimum for reporting requirements for some sources under California’s AB32. The DEIS concludes that additional appropriate mitigation would be to use solar power for the project, but states that there is not enough available space to install the required solar panels to offset impacts.

***Recommendation:*** Analyze air impacts for Action Alternatives 1-3 and 5 separately from Alternative 4 and present the results in a comparable table format. Provide a summary table of fuel use, equipment use, and truck trips from the Feasibility Report. Evaluate possible additional mitigation for GHG emissions through power purchase agreements or emissions offsets.

### **Oak Woodland Habitat**

The DEIS acknowledges that oak woodland is an important and sensitive habitat type that provides habitat to numerous common and special-status wildlife species (p. 6-70). The DEIS further acknowledges that loss of approximately 5,757 acres of oak woodland habitat from the project’s construction and inundation areas is considered a substantial loss of this habitat. As mitigation for this loss, the DEIS proposes to preserve and protect existing oak woodland habitat in Madera and Fresno Counties in the vicinity of the project area through conservation easements with an emphasis on opportunities to restore, establish, enhance and preserve habitats with high conservation values (p. 6-92). EPA agrees that this habitat is important and sensitive and agrees with the approach to seek mitigation with high conservation values. The document states that it is unknown if the required mitigation acreage is available for purchase.

***Recommendation:*** Availability of mitigation acreage and locations for oak woodland should be identified in the FEIS. EPA recommends coordinating with local agencies and organizations with knowledge of the availability of oak woodland habitat and their land ownership status in order to develop the discussion in the FEIS.

### **Consultation and Coordination with Tribal Governments**

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (November 6, 2000), directs federal agencies to establish tribal consultation and collaboration processes for the development of federal policies that have tribal implications, and is intended to strengthen the United States government-to-government relationships with Indian tribes. The DEIS mentions that Reclamation has been providing updates about the project and soliciting input from tribal representatives for the tribes located in the area, but states that tribal consultation for the project is pending (p. 9-20). The DEIS does not document any input that has been received during the update meetings.

The DEIS acknowledges that there are potentially significant adverse impacts to traditional cultural properties and sacred sites within the primary study area that would be inundated by the proposed project reservoir. The only mitigation proposed for these potential impacts is to take “precautions for limiting post-construction vandalism to cultural resources.” It is expected that tribal consultation will identify further avoidance and mitigation requested by the tribes.

**Recommendation:** The FEIS should discuss the status of consultation with tribes affected by the project and the impacts and mitigation measures identified through that consultation. The tribes should be included in the distribution list of the FEIS and Record of Decision.

### **Beneficiary Pays**

The CALFED ROD states that a “fundamental philosophy of the CALFED Program is that costs should, to the extent possible, be paid by the beneficiaries of the program actions.” EPA has long supported the concept of “beneficiary pays” because the proper identification and assignment of costs and benefits are critical to making efficient decisions about water resource management. The Feasibility Report associated with this DEIS was developed to provide detailed information on the potential project benefits and costs and the allocation of those costs. Following only a cursory review of the Draft Feasibility Report by EPA staff, it appears that the cost-benefit analysis relies on large ecosystem benefits in order for the project’s benefits to exceed its costs. Ecosystem benefits appear to be calculated based on the projected changes to the salmon populations in the San Joaquin River. This calculation seems problematic for two primary reasons: 1) it does not account for the cost of ecosystem impacts in the inundation areas and 2) overestimates benefits to salmon. Additionally, since not all mitigation measures have been identified, the costs of mitigation cannot be fully accounted for in the analysis.

**Recommendation:** The FEIS and Final Feasibility Report should include a more accurate accounting of costs and benefits to ecosystems to apply appropriate “beneficiary pays” principles from the CALFED ROD. Costs should also be updated to reflect known and potential mitigation expenses. To ensure full public disclosure to support decision-making, we recommend that the conclusions of the Feasibility Report be summarized in the body of the FEIS, and the Report be included as an appendix in the FEIS.

### **Induced Growth**

The Land Use Planning and Agricultural Resources and Cumulative Effects chapters of the DEIS do not analyze or propose mitigation for the induced growth impacts from creating an additional lake recreation area. Chapter 28, Other NEPA and CEQA Considerations, states that none of the action alternatives reduces or eliminates obstacles to development, and uses this metric to conclude that the action alternatives would not induce growth (p. 28-99). A number of residential developments are already in the planning stages and are accounted for in the discussion of cumulative effects, but none include development along the Temperance Flat reservoir. The development of Friant Dam induced development of primary and secondary homes near the lake into areas that had previously been predominantly open space. The DEIS estimates an increase in visitor days of between 113,600 and 130,400 based on boating activity alone and EPA believes these additional visits could translate into increased development pressure.

The area immediately adjacent to most of the proposed new reservoir is managed by the Bureau of Land Management, but there are also privately-owned parcels nearby.

**Recommendation:** Analyze potential for near-lake and lakeside development at the proposed Temperance Flat reservoir. Describe how the proposed project may influence the timing and

location of future growth in the area adjacent to the project site. Discuss habitat quality of adjacent private property parcels and consider their suitability as potential areas for conservation easements to mitigate for habitat loss, particularly oak woodland (p. 6-92), and avoidance of induced growth impacts. Given the challenge of finding suitable oak woodland habitat it is critical that consideration of increased development pressures be acknowledged and incorporated into mitigation planning.

