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## State Water Resources Control Board

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David Brick  
U.S. Bureau of Reclamation  
[dbrick@usbr.gov](mailto:dbrick@usbr.gov)

### **COMMENTS ON DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR SHASTA LAKE WATER RESOURCES INVESTIGATION**

Dear Mr. Brick:

The State Water Resources Control Board (State Water Board or Board) submits the following comments on the Shasta Lake Water Resources Investigation (SLWRI) Draft Supplemental Environmental Impact Statement (Draft SEIS). As discussed in detail below, it is questionable whether this project may move forward under current legal requirements and, if so, whether the Draft SEIS and prior Final Environmental Impact Statement (FEIS) are adequate for that purpose. The Draft SEIS overestimates the potential benefits the proposed Dam raise would have to anadromous fish, and underestimates the threat of significant harm the proposed Project would have to water quality, fish and wildlife, and tribal sacred sites, among other impacts. These issues should all be addressed before the environmental documentation for this project is finalized.

#### **Background**

The mission of the State Water Board and Regional Water Quality Control Boards (Regional Water Boards) is to preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations. The State Water Board and Regional Water Quality Boards have primary authority over the protection of the State's water quality. To protect water quality, the State and Regional Water Boards develop water quality control plans that identify beneficial uses of water, water quality objectives to protect those beneficial uses, and a program of implementation to achieve the objectives, as well as monitoring and other requirements. These water quality control plans include the State Water Board's Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) and the Central Valley and San Francisco Bay Regional Water Boards' water quality control plans for the Sacramento and San Joaquin River Basin and San Francisco Bay Basin, all of which are relevant to this project.

E. JOAQUIN ESQUIVEL, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

The State Water Board also administers water rights in California, including the U.S. Bureau of Reclamation's (Reclamation) water rights for water diversions at Shasta Dam and other diversions by the Central Valley Project (CVP) and the various conditions placed upon those rights. The State Water Board has imposed conditions on Reclamation's water rights pursuant to Decision 1641 (D-1641), which implemented components of the Bay-Delta Plan, among other provisions; Order 90-5, which imposed conditions on operations of Shasta and Trinity reservoirs and related facilities for temperature management; and other orders and decisions.

## **Project Background**

The Draft SEIS states that the purpose of the SLWRI is to (1) increase anadromous fish survival in the upper Sacramento River, (2) increase water supplies and water supply reliability for agricultural, municipal, industrial, and environmental purposes, and (3) address related water resources problems, needs, and opportunities. For this purpose, the Draft SEIS, together with the July 2015 SLWRI FEIS, evaluate alternatives to enlarge Shasta Dam and Reservoir pursuant to the National Environmental Policy Act (NEPA). The alternatives evaluated include dam raises of 6.5, 12.5, or 18.5 feet, resulting in an increased storage capacity of approximately 256 thousand acre-feet (TAF) for the 6.5 foot raise to 634 TAF for the 18.5 foot raise, which is the preferred project. Construction of any of the alternatives would require modifications to existing dam infrastructure, including spillway gates, outlet works, penstocks, and the water temperature control device. Additionally, the alternatives would require extensive construction activities not directly associated with dam operation, including relocation or modification of recreation facilities, wastewater treatment facilities, bridges, roads, and railroads.

The stated purpose and need for the Draft SEIS is to supplement the FEIS is to "provide information relevant to the application of Section 404(r) of the Clean Water Act (CWA) for the SLWRI, to respond to issues identified by [the U.S. Army Corps of Engineers (USACE)] and [U.S. Environmental Protection Agency (USEPA)] on the previous EIS, to update operations and modelling to the latest regulatory requirements, and to update information included in the 2015 SLWRI FEIS that is relevant to environmental concerns." Updates to regulatory requirements include recent changes to the applicable Biological Opinions (BiOp) for CVP operations from the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) from 2009 and 2008 versions, respectively, to updated versions finalized in 2019. Other updates to operating rules include recent updates to the Coordinated Operations Agreement (COA). As discussed further below, the combined effects of these changes and the proposed project have the potential to have additional significant impacts on the environment. However, the Draft SEIS makes no attempt to evaluate these effects and instead includes an extremely brief and cursory analysis of a limited set of issues. As described in more detail below, the Draft SEIS should be revised to address these issues and recirculated for public comment.

In addition, the Draft SEIS should describe how the current operational rules would interact with the proposed project, including for temperature management, spring pulse flows, and other requirements and whether there are additional changes to operations

rules that should be evaluated. If there are any other updates to the modeling or operating rules, they should also be clearly described.

### **California Wild and Scenic Rivers Act**

The California Wild and Scenic Rivers Act (Pub. Res. Code, § 5093.50 et seq.) precludes the State and Regional Water Boards from issuing regulatory approvals for the enlargement of Shasta Dam and Reservoir. The California Wild and Scenic Rivers Act includes a section specifically applicable to the McCloud River, which flows into Shasta Reservoir. Subdivision (c) of section 5093.542 of the Public Resources Code provides:

Except for participation by the Department of Water Resources in studies involving the technical and economic feasibility of enlargement of Shasta Dam, no department or agency of the state shall assist or cooperate with, whether by loan, grant, license, or otherwise, any agency of the federal, state, or local government in the planning or construction of any dam, reservoir, diversion, or other water impoundment facility that could have an adverse effect on the free-flowing condition of the McCloud River, or on its wild trout fishery.

Section 5093.542 prohibits any agency of the state from assisting or cooperating by “license, or otherwise” with the planning or construction of any dam, reservoir, diversion, or other impoundment facility that could adversely affect the free-flowing character of the McCloud River or its wild trout fishery. This language bars the State Water Board and other agencies of the state from issuing any permit or other approval for any of the action alternatives evaluated as part of the SLWRI because all of the action alternatives evaluated in the FEIS, including the preferred project that is also evaluated in the Draft SEIS, “could have an adverse effect on the free-flowing condition of the McCloud River” within the meaning of section 5093.542. All of the action alternatives would increase the storage capacity of Shasta Reservoir. If additional water is impounded using that increased storage capacity, the areas affected would include the reach of the McCloud River protected under section 5093.542, converting the affected area from a free-flowing stretch of river to impounded waters. Chapter 5.5 of the Draft SEIS confirms that the enlargement of Shasta Dam and Reservoir would reduce the currently free-flowing section of the McCloud River by 1,470 to 3,550 feet, depending on the alternative.

In Section 5.1 of the Draft SEIS, Reclamation acknowledges that California has expressed the opinion that section 5093.542 prohibits the State from being involved in the planning or construction of the enlargement of Shasta Dam and Reservoir. Although Reclamation states that California’s interpretation of section 5093.542 is not relevant to the NEPA analysis, section 5.1 of the Draft SEIS addresses section 5093.542 “as background information.” Reclamation interprets the narrow exception to section 5093.542, subdivision (c), which allows the Department of Water Resources (DWR) to participate in studies concerning the technical and economic feasibility of the enlargement of Shasta Dam, to apply more broadly to any state agency’s assistance or cooperation with the enlargement of Shasta Dam. Reclamation interprets the prohibition against State cooperation or assistance with any project that could adversely affect the McCloud River to apply only to projects other than the enlargement of Shasta Dam. This

interpretation is inconsistent with the plain language of the statute, however, which provides only a narrow exception that allows DWR to participate in feasibility studies concerning enlargement of the dam. Otherwise, section 5093.542 prohibits any state agency, including the State Water Board, from assisting or cooperating in any project, including enlargement of Shasta Dam, that could adversely affect the free-flowing condition of the McCloud River or its wild trout fishery. Accordingly, the State and Regional Water Boards are precluded from issuing the regulatory approvals that would be required in order to implement the project, and the project is therefore legally infeasible.

### **Clean Water Act Section 404(r)**

Enlargement of Shasta Dam and Reservoir cannot proceed without various water quality and water right approvals, as discussed in more detail below. One of the stated purposes of the Draft SEIS is to provide information relevant to the application of Clean Water Act section 404(r) (33 U.S.C. § 1344(r)) to the SLWRI. If applicable, section 404(r) would exempt the enlargement of Shasta Dam and Reservoir from certain Clean Water Act permitting requirements. Certain prerequisites must be satisfied in order for section 404(r) to apply, however, and section 404(r) would not exempt the enlargement of Shasta Dam and Reservoir from all permitting requirements, as discussed below.

Section 404(r) provides in relevant part:

The discharge of dredged or fill material as part of the construction of a Federal project specifically authorized by Congress . . . is not prohibited by or otherwise subject to regulation under this section, or a State program approved under this section, or section 1311(a) or 1342 of this title (except for effluent standards or prohibitions under section 1317 of this title), if information on the effects of such discharge, including consideration of the guidelines developed under subsection (b)(1) of this section, is included in an environmental impact statement for such project pursuant to the National Environmental Policy Act of 1969 and such environmental impact statement has been submitted to Congress before the actual discharge of dredged or fill material in connection with the construction of such project and prior to either authorization of such project or an appropriation of funds for such construction.

In order for section 404(r) to apply to the enlargement of Shasta Dam and Reservoir, the effects of the discharge of dredged or fill material attributable to construction would need to be evaluated in the NEPA document with consideration given to the section 404(b)(1) Guidelines,<sup>1</sup> the NEPA document would need to be submitted to Congress, and Congress would need to specifically authorize the project. However, the Draft SEIS (page 1-2) states that “Congress has not authorized construction or appropriated funds

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<sup>1</sup> The Clean Water Act 404(b)(1) Guidelines are the substantive environmental standards by which all section 404 permit applications are evaluated. The 404(b)(1) Guidelines were published by the USEPA at 40 C.F.R. Part 230 on December 24, 1980, and are binding regulations.

for construction” of the proposed project. If Congress declines to authorize the project, section 404(r) would not apply.

While section 404(r), when applicable, waives certain Clean Water Act requirements, this waiver is narrow and does not extend to all relevant state and federal permitting requirements. If section 404(r) were to apply to the enlargement of Shasta Dam and Reservoir, then the discharge of dredged or fill material would not require a permit from the USACE under section 404 of the Clean Water Act or a National Pollutant Discharge Elimination System (NPDES) permit under Clean Water Act section 402 (unless the exception for effluent standards or prohibitions under section 1317 applies). A section 404(r) waiver is limited, however, to the regulation of the discharge of dredged or fill material under sections 404, 402, and 301(a) (33 U.S.C. § 1311(a)) of the Clean Water Act. By its terms, section 404(r) does not extend to the discharge of pollutants other than dredged or fill material, or to the regulation of dredged or fill material under state law. Similarly, section 404(r) does not waive other state regulatory requirements, such as water right requirements. (33 U.S.C. § 1344(t); 40 C.F.R. § 232.3(e) [“Federal projects which qualify under the criteria contained in section 404(r) of the Act are exempt from section 404 permit requirements, but may be subject to other State or Federal requirements.”].) In addition to water quality and water right requirements, the proposed project must also comply with other state laws such as the California Endangered Species Act (CESA). The proposed project could affect multiple state-listed species and may require CESA related approvals from the California Department of Fish and Wildlife (CDFW).

### **Water Quality Approvals**

Whether or not section 404(r) applies, the enlargement of Shasta Dam and Reservoir would require several water quality approvals. Unless section 404(r) applies, as discussed above, the enlargement of Shasta Dam and Reservoir would require a permit under section 404 of the Clean Water Act for the discharge of dredge and fill material to waters of the United States, and a corresponding water quality certification under section 401 of the Clean Water Act. Even if section 404(r) applies, Reclamation would need to obtain waste discharge requirements under the Porter-Cologne Water Quality Control Act for the discharge of dredged or fill material to waters of the State. Regardless of whether section 404(r) applies, the project would also require one or more NPDES permits under Clean Water Act section 402 (33 U.S.C. § 1342) for storm water discharges and discharges from dewatering activities associated with construction activities.

If section 404(r) does not apply to the enlargement of Shasta Dam and Reservoir, then a Clean Water Act section 404 Dredge and Fill Permit from the USACE would be required because project construction would result in the discharge of dredged or fill material to Waters of the United States. If a section 404 permit is required, then section 401 of the Clean Water Act (33 U.S.C. § 1341) would also apply. Section 401 requires every applicant for a federal license or permit which may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the project will be in compliance with specified provisions of the Clean Water Act, including

water quality standards and implementation plans promulgated pursuant to section 303 of the Clean Water Act (33 U.S.C. § 1313).

Clean Water Act section 401 directs the agency responsible for water quality certification (certification) to prescribe effluent limitations and other limitations necessary to ensure compliance with the Clean Water Act and with any other appropriate requirements of state law. In this instance, the State Water Board is the state agency responsible for certification. (Wat. Code, § 13160; see Cal. Code Regs. tit. 23, § 3855, subd. (b)(1)(B).) In taking a certification action, the State Water Board must either: 1) issue an appropriately conditioned certification; or 2) deny the certification request. (Cal. Code Regs., tit. 23, § 3859.)

Even if a section 404 permit is not required, the discharge of dredged or fill material to waters of the State (which are defined to include isolated wetlands and other waters that may not meet the Clean Water Act definition of Waters of the United States) is regulated under the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.). Before discharging dredged or fill materials to waters of the State, Reclamation would be required to file a report of waste discharge with the Central Valley Regional Water Board pursuant to section 13260 of the Water Code, and obtain waste discharge requirements or a waiver. Reclamation would also need to comply with the State Wetland Definition and Procedures for Discharges of Dredged or Fill Materials to Waters of the State ([https://www.waterboards.ca.gov/water\\_issues/programs/cwa401/docs/procedures\\_confirmed.pdf](https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_confirmed.pdf)) (State Wetlands Policy), which became effective on May 28, 2020.

The enlargement of Shasta Dam and Reservoir would also require NPDES permitting under Clean Water Act section 402 (33 U.S.C. § 1342). In California, the NPDES program is administered by the State Water Board and Regional Water Boards. (Wat. Code, § 13370 et seq.) To authorize storm water discharges from construction activity, a project proponent must either apply for an individual NPDES permit or obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, General Permit Order 2009-0009-DWQ, NPDES Permit No. CAS000002 ([https://www.waterboards.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](https://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml)). Additionally, discharges from dewatering activities may require coverage under the General Order for Limited Threat Discharges to Surface Water, Order R5-2016-0076-01, NPDES Permit No. CAG995002 ([https://www.waterboards.ca.gov/centralvalley/board\\_decisions/adopted\\_orders/general\\_orders/r5-2016-0076-01.pdf](https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf)). For either discharge activity, the Regional Water Board may determine an individual NPDES permit is more appropriate than general permit coverage.

The Draft SEIS incorrectly assumes that the need to obtain an NPDES permit for all discharges from construction activities would be waived under section 404(r), and

proposes to voluntarily comply with an outdated NPDES permit.<sup>2</sup> The Draft SEIS states (page 3-3) that: “The identified discharges would typically be covered under the Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters NPDES General Permit No. CAG995001, administered by the [Central Valley Regional Water Board]. Reclamation will follow the permit conditions outlined within the NPDES General Permit No. CAG995001 in lieu of applying for permit coverage to address state water quality standards.” As explained above, section 404(r) would only apply to the discharge of dredge and fill material and would not obviate the need for an NPDES permit that covers the discharge of stormwater and other pollutants attributable to construction activities.

In summary, even if section 404(r) applies to the proposed project, Reclamation would be required to obtain water quality approvals from the State and Regional Water Boards prior to project implementation. In addition, the project would require a water right approval, as discussed below. Unless section 5093.542 of the Public Resources Code is amended, however, the State and Regional Water Boards would be precluded from issuing any approvals for the project. In addition to State and Regional Water Board approvals, the proposed project must comply with state law and may require additional approvals from other state agencies, such as CESA related approvals from CDFW.

### **Water Right Time Extensions**

In addition to the water quality approvals described above, the enlargement of Shasta Dam and Reservoir is not authorized without time extensions for several water right permits. Water diversion and storage at Shasta Dam is regulated by the State Water Board pursuant to Reclamation water right Permits 12720, 12721, 12722, 12723, and 12724 (Applications 5625, 5626, 9363, 9364, and 9365, respectively). Reclamation’s water right permits include a deadline to complete construction work by December 1, 1985, and a deadline to complete application of the water to beneficial use by December 1, 1990. Construction activities involving expanding the capacity of Shasta Reservoir, which would allow for an increase in beneficial use of water under the permits, cannot commence unless and until the State Water Board approves extensions of time for Reclamation’s water rights. (Wat. Code, §§ 1397, 1398.) Reclamation previously filed petitions with the State Water Board requesting extensions of time until December 2030 to complete construction and use of water pursuant to the water right permits. The petitions have been publicly noticed and numerous protests of the proposed time extensions remain active. California Environmental Quality Act (CEQA) compliance is also necessary before the State Water Board can approve the time extensions. These issues would need to be resolved before a time extension could possibly be granted. And any extension approved by the State Water Board would have to be consistent with section 5093.542 of the Public Resources Code.

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<sup>2</sup> In addition, the Central Valley Regional Water Board’s Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters (Order R5-2013-0074, NPDES Permit No. CAG995001) was rescinded on December 5, 2019, and the Central Valley Regional Water Board is no longer accepting applications for coverage under the low threat general order.

## **Adequacy of the Environmental Impacts Analysis**

The Draft SEIS includes a cursory, incomplete, and inadequate assessment of the potential environmental impacts of the project when considered in combination with changes to applicable BiOps and the COA that prevents meaningful review and comment. The analysis is supported by very minimal, broad, and selective summary statistics that provide limited meaningful information regarding the potential impacts of the project. Those impacts could be substantial when combined with the effects of the updated COA and BiOps, which allow for significantly greater exports from the Bay-Delta watershed by the CVP. Late in the comment period, the State Water Board was forwarded additional modeling information for the project, but Reclamation has not made available the assumptions and other information necessary to consider that modeling. The modeling results indicate little effect (including little benefit) from the project compared to the no action alternative (NAA) evaluated in the Draft SEIS. However, without the associated assumptions and other relevant information on how that modeling was conducted, it is impossible to fully assess the results.

Given the magnitude of the project and additional flexibility that was added as part of the recent changes to the COA and BiOps, it appears likely that significant impacts from those combined effects could occur. For example, based on a limited review of the aforementioned modeling information, the changes to the COA and BiOps would be expected to result in a long-term average annual reduction in Delta outflow of approximately 750 TAF. The cumulative impacts of the COA and BiOps and further reductions to Delta outflow and associated impacts likely to result from the enlargement of Shasta Dam and Reservoir should be evaluated.

### Adequacy of the Quantitative Analyses

The 2015 FEIS evaluated various project alternatives with dam-raise heights of 6.5, 12.5, or 18.5 ft and different operating assumptions, all of which included the 1986 COA and 2008 and 2009 BiOps, relative to a NAA that also included the 1986 COA and 2008 and 2009 BiOps. The Draft SEIS includes the evaluation of an 18.5 ft dam raise with the 2018 COA and 2019 BiOps against a NAA that includes the 2018 COA and 2019 BiOps. This change in the NAA assumptions for the COA and BiOps masks the combined effects of the project and the 2018 COA and 2019 BiOps, which are likely to be substantial as indicated by the comparison of Delta outflow under the two NAA scenarios in Table 1, produced from the aforementioned modeling information forwarded to the Board. Similarly, substantial changes in export operations are likely to result in impacts to fish populations that were not evaluated in the FEIS. The Draft SEIS should be updated to include a full evaluation of the effects of the project compared to the NAA that was evaluated in the 2015 FEIS for the different alternatives. This analysis should include an evaluation of changes in Delta outflows, exports, Old and Middle River reverse flows, Sacramento River flows, reservoir storage, water temperatures, and salinity and associated effects on fish and wildlife, water quality, and other applicable resource areas.

Table 1. Annual Delta Outflow in Thousand Acre-Feet by Sacramento 40-30-30 Water Year Type, FEIS vs. Draft SEIS No Action Alternatives



<b>Water Year Type</b>	<b>FEIS</b>	<b>Draft SEIS</b>	<b>Difference</b>
Wet	28,812	27,150	-1,662
Above Normal	18,150	17,344	-807
Below Normal	11,225	11,056	-168
Dry	8,299	7,994	-305
Critical	5,107	5,063	-45
Dry and Critical	7,022	6,821	-201
Long Term Average	16,277	15,530	-747

The SEIS presents limited modeling information and should be updated to include a complete summary of numeric modeling results. The description of modeling results consists of limited and unclear narrative information for the preferred alternative under the 2015 and 2019 modeled scenarios, and includes a discussion of results for limited parameters and locations (Shasta Lake storage, Keswick Dam releases, Sacramento River flows, Delta outflow, and water temperatures). Tables or other standard summaries of results are not provided for these parameters and no results are provided for other locations that could be affected by the project or for other parameters (including Delta exports, salinity, reverse flows and indicators of effects on fisheries). In addition, no appendices or other reference materials related to the modeling and quantitative analyses and associated assumptions were provided.

The Draft SEIS presents flow comparisons between modeled scenarios in terms of percentage differences without clearly identifying the baseline of comparison or the magnitude (volume) of the differences. For example, in presenting the differences in Delta outflows (page 4-5), the Draft SEIS states, "Delta outflow results for the 2019 scenario and 2015 scenario were within 2% of one another." It is not clear which scenarios were compared (NAA or the preferred alternative) or how the difference was derived, and no information is provided for the total volume of water associated with the difference. A similar analysis was presented for Shasta Lake storage (page 4-2), which states that "compared to the 2015 scenario...the 2019 scenario with an 18.5-ft raise would increase Shasta Lake storage by 2% or less..." In addition, some of the changes in flows between the 2015 scenario and the 2019 scenario were substantial, but the reason for those changes is not explained. For example, for the minimum Sacramento River flows below Keswick Dam in June, the Draft SEIS states (page 4-3) "The 2015 scenario would decrease flows by 38.9%, compared to a decrease of flows of 0.4% under the 2019 scenario." The Draft SEIS does not explain what is driving this significant change in results and again no reference materials are provided to allow for that evaluation by members of the public. These issues should be addressed.

### Adequacy of Water Quality Impact Analysis

As stated in the Draft SEIS, Reclamation intends to use the Draft SEIS in combination with the SLWRI FEIS and the July 2015 SLWRI Feasibility Report to demonstrate compliance with Clean Water Act section 404(r) and consistency with the section

404(b)(1) Guidelines. Those documents do not contain sufficient information, however, concerning the effects of the discharge of dredged or fill material as part of the construction of the enlargement of Shasta Dam and Reservoir, nor do those documents contain the analysis required by the 404(b)(1) Guidelines.

Subpart B of the Guidelines establishes four restrictions on discharges that must be satisfied in order to make a finding that a proposed discharge of dredge or fill material complies with the Guidelines. In summary, those four restrictions prohibit discharges (1) if a practicable alternative would reduce adverse impacts on the aquatic environment, (2) if the discharge would cause or contribute to a violation of certain legal standards, including applicable State water quality standards, (3) if the discharge would cause or contribute to significant degradation to Waters of the United States, or (4) if practicable and appropriate steps have not been taken to minimize impacts. (40 C.F.R. §§ 230.4, 230.10(a)-(d).)

Section 230.11 of the Guidelines requires certain factual determinations to be made concerning the effects of the discharge(s), and those factual determinations are required to be used in determining compliance with the four restrictions on discharges. (40 C.F.R. § 230.11.) Specifically, the Guidelines require factual determinations concerning the effects of the discharge(s) on the physical, chemical, and biological characteristics of the aquatic ecosystem, including the effects of the discharge(s) on: (1) physical substrate, (2) water circulation, fluctuation, and salinity, (3) suspended particulates/turbidity, (4) contaminants, and (5) the aquatic ecosystem and organisms. The Guidelines also require certain factual determinations concerning the proposed disposal sites and an analysis of the cumulative and secondary effects on the aquatic ecosystem. (*Id.*, §§ 230.11, 230.20-230.54.)

Reclamation has conducted a preliminary jurisdictional determination of wetlands and other Waters of the United States that could be impacted by the enlargement of Shasta Dam and Reservoir and quantified the number of acres that would be impacted by the various relocation projects. In addition, Chapter 2.3 of the Draft SEIS sets forth a framework for avoiding and minimizing the impacts of relocating facilities on wetlands and other waters of the United States. However, the FEIS and Draft SEIS do not include detailed information concerning the effects of the discharge. Also lacking was sufficient information to make the factual determinations described in section 230.11 of the 404(b)(1) Guidelines, and to determine whether the proposed discharges would be consistent with the four restrictions on discharges contained in the Guidelines.

The Draft SEIS states (page 2-4) that “All impacts to wetlands and other [Waters of the United States] will be mitigated (see Chapter 2.5 for a description of the mitigation plan).” However, the Wetland Mitigation Plan described in Chapter 2.5 is limited to compensatory mitigation for wetlands impacted as a result of project relocations, including roads, dikes, bridges, and recreation facilities. Additional wetland impacts are identified in the FEIS, including a loss of jurisdictional wetlands caused by flooding the impoundment areas. The Wetland Mitigation Plan described in the SEIS should be expanded accordingly to mitigate for all impacts to wetlands. In addition, the wetland mitigation measures described in the FEIS and the Wetland Mitigation Plan described in

the Draft SEIS should be updated to recognize the need to comply with the State Water Board's new State Wetlands Policy, referenced above.

In addition to impacts to wetlands, the FEIS recognizes that the proposed project would result in short-term and long-term water quality impacts attributable to run-off and shoreline erosion, and identifies the following water quality mitigation measures:

- Mitigation Measure WQ-1: Develop and Implement a Comprehensive Multi-scale Sediment Reduction and Water Quality Improvement Program Within Watersheds Tributary to the Primary Study Area
- Mitigation Measure WQ-6: Prepare and Implement a Site-Specific Remediation Plan for Historic Mine Features Subject to Inundation in the Vicinity of the Bully Hill and Rising Star Mines

The water quality mitigation measures are lacking in detail, and it is unclear how the mitigation measures would adequately minimize potential adverse impacts on water quality. Development of any water quality protection or mitigation plans must include consultation with the State Water Board or Central Valley Regional Water Board. To comply with the Clean Water Act and Porter-Cologne Water Quality Control Act, Reclamation must clearly define the mitigation actions it will implement in the proposed water quality plans, and how those actions will measurably mitigate the impacts of the proposed project. Based on the limited information included in the Draft SEIS for these mitigation measures, it is not at all clear that they will be effective or adequate to reduce these water quality impacts to a less than significant level.

The proposed project could specifically result in long-term water quality effects from increased sedimentation and heavy metals (i.e., mercury, copper, zinc, etc.) that are not fully addressed in the FEIS or Draft SEIS. The FEIS does acknowledge (page 7-86) that "[...] two depositional features associated with historic copper mining and smelting operations are immediately adjacent to the shoreline of Shasta Lake in the general vicinity of the Bully Hill Mine. As mapped, these two sites appear to have about 7,300 cubic yards of material that could be subjected to shoreline and surficial erosional processes, with a high potential for delivery to Shasta Lake" and identifies that Mitigation Measure WQ-6 could reduce the impact to a less-than-significant level. However, as stated above, Mitigation Measure WQ-6 is lacking in detail and it is unclear how this mitigation measure will adequately minimize potential adverse water quality impacts. In addition, other long-term water quality effects related to mercury and pollutant metals could occur as a result of the proposed project and are not addressed in the FEIS or Draft SEIS. The Central Valley Regional Water Board's 2013 comments on the SLWRI Draft EIS (Attachment 2) included comments related to these impacts that have not been addressed in the Draft SEIS and should be. Specifically, the Central Valley Regional Water Board indicated that the transport of additional suspended sediment from Shasta Lake into the Sacramento River may elevate concentrations of pollutant metals in the Upper Sacramento River and could cause violations of water quality standards. The Central Valley Regional Water Board's 2013 comments are reiterated and incorporated by reference. Before finalizing the environmental documentation for this project, the

potential for an increase in pollutant metals concentrations in Shasta Lake and downstream in the Sacramento River should be thoroughly evaluated and documented.

#### Project Impacts Downstream of Shasta Dam

The discussion of potential impacts to fisheries and other resources downstream of Shasta Dam included in the Draft SEIS is cursory and inadequate. The analysis only includes a limited discussion of winter-run Chinook salmon and steelhead and does not discuss potential effects to any other aquatic species, including other salmonid and anadromous fish species (spring, late-fall, and fall run Chinook salmon, and sturgeon), estuarine species (Delta smelt, longfin smelt, Sacramento splittail), or other ecologically important fish and prey species. In addition, as discussed above, the analysis does not address the full effects of the project combined with the changes to the BiOps and COA. When combined, the potential impacts to fish and wildlife would be significant as discussed above and should be fully evaluated and disclosed.

As described in the peer-reviewed *Scientific Basis Report in Support of New and Modified Requirements for Inflows from the Sacramento River and its Tributaries and Eastside Tributaries to the Delta, Delta Outflows, Cold Water Habitat, and Interior Delta Flows* produced by State Water Board staff in 2017 ([https://www.waterboards.ca.gov/water\\_issues/programs/peer\\_review/docs/scientific\\_basis\\_phase\\_ii/201710\\_bdphasell\\_sciencereport.pdf](https://www.waterboards.ca.gov/water_issues/programs/peer_review/docs/scientific_basis_phase_ii/201710_bdphasell_sciencereport.pdf)) in support of potential updates to the Bay-Delta Plan and scientific literature referenced in that report, available scientific knowledge indicates that decreasing freshwater outflows, particularly during the winter and spring, and increasing exports and associated reverse flows in the interior Delta are expected to have a negative impact on the survival and abundance of native fish species, including threatened and endangered species. As discussed above, the proposed project when combined with the updated COA and BiOps would be expected to reduce Delta outflows substantially. The Draft SEIS does not address these impacts in any way and should be updated to do so and recirculated for public review and comment.

In addition, the Draft SEIS should discuss the combined effects of the project with the changed BiOps and COA on winter-run and fall-run Chinook salmon redd dewatering. The Draft SEIS states (page 4-6) that “The 2019 scenario results in an increase in minimum flows below Keswick Dam throughout the year, with the largest differences seen in June through August. During the winter season at Red Bluff Diversion Dam, total minimum water flows are up to 500 cfs greater under the 2019 scenario than under the 2015 scenario. An increase in minimum flows and in the cold-water storage capacity increases water quality within the Sacramento River, providing a benefit for migrating adult Winter-run Chinook Salmon.” The Draft SEIS does not indicate the what the flow levels would be in June through August or other months or discuss how these higher flows would affect redd dewatering for winter-run and fall-run Chinook salmon as flows are ramped down in the summer and fall. Instead, the Draft SEIS assumes without basis that these higher flows would only benefit winter-run Chinook salmon. Impacts from redd dewatering already occur under existing conditions. With higher flows during the summer, redd dewater impacts could be exacerbated. These potential impacts should be fully evaluated and disclosed in the Draft SEIS.

The Draft SEIS also does not discuss the combined effects of the project with the changes to the BiOps and COA on the natural hydrograph and associated functional flows. Specific issues that should be addressed include the effects of the project combined with the updates to the BiOps and COA on floodplain inundation, channel maintenance flows, flushing of gravels, pulse flows, discouragement of nonnative species (include aquatic vegetation and nonnative fish species), and other functions. The proposed project combined with the changes to the BiOps and COA would further impair the hydrograph by reducing natural winter and spring flows in the river and out of the Delta and increasing summer flows on the river, but not out of the Delta. The impacts of these changes on the magnitude, duration, and frequency of the functions identified above should be fully evaluated and disclosed in the Draft SEIS.

#### Project Impacts Upstream of Shasta Dam

The proposed project would have numerous significant impacts on the McCloud River and its native and residence fish and other aquatic and riparian species and the wild and scenic river attributes of the McCloud River. However, the Draft SEIS only proposes limited mitigation to fund the planning for a trout fishery protection plan. Details related to the plan are not provided and it is not clear that the mitigation measure includes commitments for full implementation of the plan. Further, it is not clear that the impacts from the project on resident trout can be fully mitigated and whether the plan would provide mitigation for other impacts to other species, water quality, and other resource areas. The Draft SEIS also minimizes the effects the proposed project and alternatives would have on resident trout species on the McCloud River. While the Draft SEIS indicates that the reach of the McCloud River that would be affected by inundation under the preferred project would almost double (from 36 acres to 60 acres), the Draft SEIS indicates that impacts to migration of resident trout species would not be affected and that predator species would not be affected by this increased inundation.

Further, the enlargement of Shasta Reservoir would reduce the extent of potential spawning and rearing habitats in the upper Sacramento River, McCloud River, and other tributaries upstream of Shasta Reservoir that are considered prime habitats for the reintroduction of winter-run and spring-run Chinook salmon and steelhead (Sacramento Valley Salmon Resiliency Strategy, 2017 available at <https://resources.ca.gov/CNRALegacyFiles/docs/Salmon-Resiliency-Strategy.pdf>). However, the Draft SEIS does not address any potential impacts of the proposed Shasta Dam raise project on spawning and rearing habitat availability for salmonids in the impacted streams and rivers above the Shasta Reservoir. The Draft SEIS estimates that the enlargement of Shasta Dam and Reservoir would extend the current “transition reach” by an additional 3,550 feet in the lower McCloud River under the preferred alternative, which would reduce the extent of available spawning and rearing habitat. In addition, the operation of the salmonid reintroduction program, including the locations for adult release and juvenile capture, could be affected by the reservoir elevation change. The Draft SEIS should address these potential impacts for the planned reintroduction of Chinook salmon and steelhead to the streams and rivers above Shasta Reservoir.

### Climate Change Analysis

The Draft SEIS does not include updated analyses of the potential effects of the project with climate change and sea-level rise. Given the permanent nature of the proposed infrastructure and long-term and significant scope and effect of the project, a thorough updated climate change analysis should be provided in the Draft SEIS. The SEIS should include analyses of the proposed project for expected climate change effects upon the initial operations and any future time periods (e.g., 50- and 100-years post-construction) in the life of the project. Scientific studies<sup>3</sup> have suggested that climate change will bring changes in precipitation patterns (from more snow to more rain), higher temperatures, vegetation expansion, and longer growing seasons, which would result in warmer water temperatures and lower annual streamflows than the current conditions. The SEIS should also incorporate climate change scenarios with warmer and drier conditions than the current climate change models forecast for the Central Valley, including the drought sequences similar to those that were experienced from 2012-2016.

### Cumulative Impacts Analysis

The Draft SEIS does not include updated cumulative impact analyses. An updated assessment of the potential cumulative impacts of the project and other water development and related projects is necessary to evaluate the degree and extent of the possible environmental impacts from the project, including an assessment of the cumulative impacts of the reduced regulatory requirements included in the 2019 BiOps and the improvements to CVP water diversion capacities resulting from the 2018 COA. The cumulative impacts of numerous proposed and planned water development projects north and south of the Delta (including Site Reservoir, Delta Conveyance, San Luis Reservoir expansion, Temperance Flat, Los Vaqueros Reservoir expansion, Pacheco Reservoir expansion, and other projects) combined with reduced regulatory requirements and added CVP operational capacity could significantly reduce Delta outflows and increase exports and result in significant impacts to numerous threatened and endangered and commercially and recreationally important aquatic species. These impacts should be fully evaluated and disclosed in the SEIS.

### Benefits of the Project

The proposed project identifies improved temperature protection as one of the primary purposes for the proposed project. However, the HEC-5Q temperature modeling data for the project only shows limited benefits. The modeling data suggests that the largest decreases in long-term average monthly water temperature under the preferred alternative would occur in April (0.6 °F) and May (0.8 °F) at the Clear Creek compliance location included in the 2019 NMFS BiOp. The benefits during the fall and warmer summer months when temperature protection is the most problematic are more limited.

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<sup>3</sup> Berghuijs, W. R., R. A. Woods, and M. Hrachowitz. 2014. A precipitation shift from snow towards rain leads to a decrease in streamflow. *Nature Climate Change* 4: 583-586. doi:10.1038/nclimate2246.  
Goulden, M. L., and R. C. Bales. 2014. Mountain runoff vulnerability to increased evapotranspiration with vegetation expansion. *PNAS* 111: 14071-14075.  
Milly, P. C. D., and K. A. Dunne. 2020. Colorado River flow dwindles as warming-driven loss of reflective snow energizes evaporation. *Science*. DOI: 10.1126/science.aay9187.

In their comments on the Draft EIS, CDFW (2013) suggested that improving flow management, screening pumps and diversions, enhancement of spawning and rearing habitats, removing fish passage barriers, and floodplain habitat restoration would be more efficient and cost effective recovery strategies for anadromous fish in the Central Valley streams and rivers than raising Shasta Dam. CDFW also recommended modification of the temperature control device on Shasta Dam to improve anadromous fish survival. Reclamation did not consider any alternatives implementing these management and restoration actions without the Shasta Dam raise, but should.

### **Previous Comments on Shasta Dam Raise**

The State Water Board, Central Valley Regional Water Board, and CDFW have previously provided comments relative to this project that are incorporated by reference and should be fully addressed before NEPA documentation is completed for this project. Most recently, on January 14, 2019, the State Water Board provided the attached (Attachment 1) comments responsive to Westlands Water District's 2018 Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for a substantially similar project.

The State Water Board appreciates the opportunity to provide comments on the SLWRI Draft SEIS. If you have any questions regarding these comments, please contact Diane Riddle at [diane.riddle@waterboards.ca.gov](mailto:diane.riddle@waterboards.ca.gov). Please be aware that due to the public health concerns regarding the COVID-19 virus and the resulting pandemic, many State Water Board staff are telecommuting; therefore, the best avenue of communication at this time is via email.

Sincerely,

*ORIGINAL SIGNED BY*

Eileen Sobeck  
Executive Director  
State Water Resources Control Board

Attachment 1: January 14, 2019, State Water Board comments on Westlands Water District's 2018 NOP for Shasta Dam Raise Project

Attachment 2: September 11, 2013, Central Valley Regional Water Board comments on the SLWRI Draft EIS