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Via email: sha-mpr-bdo@usbr.gov

RE: Comments on the Draft Environmental Impact Statement for the Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project

Dear Ms. Harrison:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project (Draft EIS), dated July 2019. The Delta Stewardship Council (Council) recognizes the U.S. Bureau of Reclamation's (Reclamation) objective to consider potential modifications to the continued long-term operation of the Central Valley Project, in a coordinated manner with the State Water Project, for the authorized purpose of both projects.

As you may be aware, the Council is an independent State of California agency established by the Sacramento-San Joaquin Delta Reform Act of 2009 (SBX7 1; Delta Reform Act (Wat. Code, §§ 85000 et seq.)). As stated in the Delta Reform Act, the State has coequal goals for the Delta: providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place (Wat. Code, § 85054). The Council is charged with furthering California's coequal goals for the Delta through the adoption and implementation of the Delta Plan, regulatory portions of which became effective on September 1, 2013.

Comments on the Draft EIS

The following sections of this letter identify Council staff comments on the content of the Draft EIS, including comments from the Council's Delta Science Program.

"Coequal goals" means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place."

- CA Water Code §85054

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Regulatory Setting: Through the Delta Reform Act, the Council is granted specific regulatory and appellate authority over certain actions that take place in whole or in part in the Delta and Suisun Marsh, which are referred to as “covered actions”. The Council exercises that authority through the Delta Plan. Projects that are solely carried out, approved, or funded by the federal government are not considered covered actions. However, discretionary projects, plans, and programs carried out by state or local agencies may be covered actions required to demonstrate consistency with 14 regulatory policies identified in the Delta Plan. In the Final Environmental Impact Statement (Final EIS), please include a description of the Council’s regulatory authority, the Delta Plan, and the applicable regulatory policies for non-federal projects in the Delta. In addition, the Final EIS should acknowledge the potential that a certification of consistency with the Delta Plan may be required for any components of the project description that would be carried out by a state or local entity.

Identification and Consideration of Alternative Components: In Appendix D, Chapter 3, Alternative Development Process (Draft EIS, page 3-2), Table 3.1-1, Component Screening Results, lists potential components of the No Action Alternative and the four project alternatives (proposed alternatives), including a description, notes, screening criteria, and reasons to screen out each component. The following should be reconsidered and included as components of the proposed alternatives within the Final EIS:

- *Recalculate flood curves* (Draft EIS, Appendix D, page 3-2) – this component includes the potential reoperation of CVP and SWP reservoirs and recalculated flood curves to increase storage and water supplies. This is an activity which Reclamation determined in the screening table was not within the project scope. In the Water Control Manuals for reservoir operations, many of the flood curves (reservoir rule curves) used in determining when and how much capacity CVP and SWP reservoirs have for flood control are based on older hydrologic records that do not account for recent observational data or projected impacts of climate change. These impacts may result in hydrologic changes including changing water demand patterns and streamflow quantities and timing. Additionally, new atmospheric forecasting and sensing technology may also play a key role in amending reservoir Water Control Manuals and recalculating reservoir rule curves to maximize storage capacity. Pilot studies such as the Forecast Informed Reservoir Operations¹ (FIRO), which assesses the viability of optimizing water management and improving resilience of an U.S. Army Corps of Engineers reservoir, have potential to inform operations of CVP and SWP reservoirs in a manner that increases storage and available water supplies. The recalculate flood curves component should be included in the project alternatives, as including more recent data and the role of new forecasting and sensing technology may increase water storage and be within the project’s scope to maximize water deliveries.

¹ <https://cw3e.ucsd.edu/firo-preliminary-viability-assessment-for-lake-mendocino/>

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- *Storage integration* (Draft EIS, Appendix D, page 3-3) – this component allows for management and operation of CVP and SWP reservoirs in a manner that could potentially increase storage and available water supplies. This is an activity which Reclamation determined was not within the project scope because Reclamation regularly considers options to improve integration of storage operations for each facility. Integrated storage operations should be considered both for each facility and for the system as a whole. Water storage on the Delta's main stem rivers and tributaries should be more broadly integrated across the proposed alternatives. One study, the Association of California Water Agencies' Storage Integration Study², identifies opportunities to integrate existing reservoirs throughout the system with proposed water storage projects to potentially provide increased storage and water supplies. Many of the proposed water storage projects would receive partial funding from the State's Water Storage Investment Program for public benefits to construct such proposed water storage projects. Integrated storage projects should be considered feasible and included in this component across the proposed alternatives.
- *Alternative water supplies* (Draft EIS, Appendix D, page 3-6) – this component incorporates alternative water supplies as a part of the proposed alternatives. Although Reclamation determined that this component does not directly accomplish the purpose and need to increase CVP and SWP water deliveries, developing alternative water supplies leads to additional available water supplies in the system and reduced reliance on Delta water. This would enable increased system wide flexibility to vary deliveries and water supply volumes at different times of a water year to meet other objectives and benefits, thus increasing water supplies and deliveries. For example, a regional alternative water supply developed to meet or lower local water demands could potentially increase cold water storage in upstream Delta basin reservoirs. Delta Plan policy **WR P1 Reduce Reliance on the Delta through Improved Regional Water Self-Reliance** supports this type of regional water supply development. Although alternative water supplies may not directly accomplish the purpose, they should be included as a component across all proposed alternatives given their potential to add system flexibility and indirectly provide increased water supply and water deliveries.

The Council supports Reclamation's determination that the following components should be retained as part of the alternatives included in the Draft EIS analysis.

- *Improved Delta Cross Channel operations* (Draft EIS, Appendix D, page 3-4) – according to the description, this component modifies Delta Cross Channel operations to be more proactive in anticipation of a water quality exceedance. Delta Plan recommendation **WR R12a(4)(e) Promote Options for New and Improved Infrastructure Related to Water Conveyance** supports this modification.

² <https://www.acwa.com/wp-content/uploads/2017/06/2017-06-05-ACWA-Integrated-Storage-Final-Report.pdf>

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- *Increased exports during high flows* (Draft EIS, Appendix D, page 3-5) – according to the description, this component captures and exports more water during periods of high Delta outflow. Under the “Big Gulp/Little Sip” concept, “big gulp” describes a condition that when there is abundant water flow in the Delta, environmental and regulatory standards should be met first, followed by increased water deliveries. “Little sip” describes reduced flow conditions where water deliveries are decreased when environmental and regulatory standards cannot be met. The “Big Gulp/Little Sip” concept is supported by Delta Plan recommendation **WR R12h Operate Delta Water Management Facilities Using Adaptive Management Principles**. This component of the proposed alternatives represents the “Big Gulp” part of this concept. The “Little Sip” part must also be implemented during periods of low flows in the system to decrease Delta water diversions and protect the Delta ecosystem. Therefore, the increased exports during high flows component of the proposed alternatives should also include a separate component describing the need for decreased exports during low flows.
- Additionally, a number of components included in the proposed alternatives (e.g., *Enhance Delta inflow and outflow, Flexible OMR management, Focus on water reduction, No Fall X2 action, Protection of winter and spring flows, Remove San Joaquin River inflow and export requirement, Restore Delta natural flow regimes, RPA water temperature objectives, Suisun Marsh Salinity Control Gates operations, and Water transfers*) should be included in an adaptive management plan for the coordinated operation of SWP and CVP to promote the coequal goals in the face of an uncertain long term future for the Delta and its watershed, as described in Delta Plan recommendation **WR R12g**. The adaptive management plan for the coordinated operation of SWP and CVP would be a plan for the SWP and CVP operators and managers would follow if the objectives of the project and the components in the preferred alternative are not achieved. The Council recommends that Reclamation and the Department of Water Resources (DWR) develop an adaptive management plan incorporating the Delta Plan’s nine-step adaptive management framework (<http://deltacouncil.ca.gov/pdf/delta-plan/2015-appendix-1b.pdf>) that includes these components of the proposed alternatives.

Areas of Controversy: The Summary section of the Draft EIS (beginning on page 1-8) identifies key issues of controversy informed by public comments and areas of scientific controversy. The Council offers the following comments regarding key areas of controversy:

- Salmonids
 - *Hydrodynamic Effects on Juvenile Salmonids in the Tidal Delta* (Draft EIS, Page 1-10) – The Draft EIS states that the influence of river flows on juvenile salmonids are relatively understood, but the tidal Delta with its the dendritic network of rivers, channels, and sloughs provides a complex effect on juvenile salmonids that is not as easily understood. “As such, the hydrodynamic effects of water project operations that can be easily observed in rivers is much less clear

in the tidal Delta." (Draft EIS, page 1-10) The Draft EIS describes the term "reverse flows" as a condition where South Delta exports exceed San Joaquin River inflows, where the impact from such flows and export effects in the Old and Middle River corridor can be substantial. The Draft EIS states, "However, investigations completed more recently report juvenile salmonids are unlikely to perceive or be influenced by tidally-averaged 'net' flows, but instead would potentially be affected by instantaneous changes in channel velocity or flow direction (Anderson et al. 2012, Monismith et al. 2014, SST 2017)." (Draft EIS, page 1-10)

Council staff have reviewed the three referenced documents and have determined that the three documents do not make substantial conclusions that support the statement above.

- The Anderson et al. 2012 reference is a report from a review panel for an acoustic tagging study. The panel found some logistic and methodological difficulties that undermined the reliability of the results from the acoustic tags and also concluded that an attempt to adaptively manage in real-time complicated the study. The panel concluded that an alternate path could be to use selective tidal-stream transport behavioral models that account for both flows and tides. While this approach may be promising, the scope of the review was not to provide a scientific basis for management actions, but rather to review the value of a specific acoustic monitoring effort that occurred in a single Spring season. The panel did recommend new paths of investigation that may in the future produce new scientific understanding about migration behavior. However, the scope of the review was by intention narrow and the conclusions beyond the single acoustic monitoring effort were insubstantial.
- Council staff reviewed the Salmonid Scoping Team 2017 study (SST 2017) and did not find evidence that the study concludes that reverse flow/net flow is not a component of species navigation in the Delta. The study did conclude that higher Delta net inflow from the San Joaquin River results in higher juvenile survival through the Delta (p. E-90).
- Monismith et al. 2014 is not a research project, nor is it peer reviewed. Rather, it is a panel summary of a workshop on flows which the Council hosted in 2014. The authors concluded that in all of the assigned reading and panel presentations, they saw very few, solid, quantitative estimates of effects (p. 2). The panel summary suggested that fish could perceive velocity itself and not just changes in velocity (p. 3) and that net tidal flows in the lower south Delta from Old Middle River are a useful index for measuring entrainment (p. 6-7).

These references do not appear to represent strong evidence that supports the Draft EIS statements noted above. The Council recommends that Reclamation

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incorporate other scientific research that would provide specific support for these statements, or revising the statements to offer supportable conclusions about juvenile salmonids, including their potential to respond to tidally-averaged “net flows”.

Modeling: Modeling assumptions supporting the Draft EIS are listed under Appendix F. The Final EIS should clarify or refine the following modeling assumptions based upon near-term or future activities in the Delta.

- Attachment 2-1 Model Assumptions, 2.1 CalSim II Assumptions for the No Action Alternative
 - *Facilities* – The Draft EIS states that the model includes flood control weirs (e.g., the Fremont Weir which feeds into the Yolo Bypass) in its calculations. Currently, DWR and Reclamation have finalized an EIR/EIS to fulfill the CEQA/NEPA requirements for the Yolo Bypass Salmonid Habitat Restoration and Fish Passage project. In response to the Reasonable and Prudent Alternative (RPA) action I.6.1 and, in part, RPA action 1.7 of the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS), the project objectives are to increase the availability of floodplain fisheries rearing habitat for various species of salmon and steelhead and to reduce migratory delays and loss of fish at Fremont Weir and other structures in the Yolo Bypass by increasing connectivity and reducing stranding and presence of migration barriers. The Yolo Bypass Salmonid Habitat Restoration and Fish Passage project proposes to meet these objectives by constructing a notch in Fremont Weir to provide increased flows (up to 6,000 cfs for the preferred alternative of an eastside gated notch) into and through the Yolo Bypass. This project appears to be a priority for DWR and Reclamation to fulfill the RPA requirements. Therefore, we recommend that the modeling supporting the Final EIS include the Yolo Bypass Salmonid Habitat Restoration and Fish Passage project in its assumptions and calculations across all proposed alternatives.
 - *Contra Costa Water District (CCWD) Intakes* – The model assumes CCWD’s existing pumping rates for their facilities in the Delta to provide water storage for the Los Vaqueros Reservoir in Contra Costa County. It is not clear if those assumed rates account for the proposed expansion of the current reservoir’s storage capacity up to 275,000 acre-feet. The expansion project proposes a number of components which include upgrading existing conveyance facilities, constructing new conveyance facilities (including a new high-lift pump station on the Contra Costa Canal with a proposed capacity of 350 cfs), replacing existing pumping plants, and completing Rock Slough Fish Screen Improvements. CCWD is planning, designing, and seeking funding and permitting for this expansion. The project has been awarded funds from the State’s Water Storage Investment

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Program and CCWD is actively working with other water agencies to fund the project. The expansion project is a reasonably foreseeable future project that would be constructed within the time horizon of the Draft EIS; thus we recommend that the modeling supporting the Final EIS include the expansion project in its assumptions and calculations across all proposed alternatives.

- *Continued CALFED Agreements* – The Draft EIS states that water under the Lower Yuba River Accord Component 1 is assumed to be transferred to south-of-Delta SWP contractors to help mitigate the impact of the National Marine Fisheries Service's (NMFS) biological opinions and State Water Resources Control Board's (SWWRCB) D-1641 regulations on SWP exports during April and May. It is not clear if those transfers would occur at a daily or monthly rate and if those transfers would occur on an annual or multi-year basis, although the Draft EIS states that short-term or temporary water transfers conveyed through Banks Pumping Plant are not included. Additionally, it is unclear what assurances DWR has made that there is capacity in the SWP conveyance system for transfers after SWP delivery obligations are fulfilled. In past water years, the SWP conveyance system did not have the capacity to transfer water beyond the SWP contract obligations. However, the modeling supporting the proposed alternatives may assume that such capacity would be available. The Final EIS should clarify these water transfer assumptions.
- *Delta Water Quality* – The Draft EIS assumed a modified flow-salinity relationship in the Delta equivalent to a 15-cm (6 inch) sea-level rise condition in 2030. According to the Ocean Protection Council's 2018 *Sea-Level Rise Guidance* document³, a projection of 15-cm (6-inch) sea-level rise characterizes a low-risk aversion likelihood, characterized by 66% probability that sea-level rise is between 9-cm (3.5-inches) and 15-cm (6-inches). Using a low-risk aversion likelihood may not represent a conservative enough assumption due to a changing climate that is reflected in rising average temperatures (OPC Guidance, page 3). Since the Delta and its tributaries are a fragile system that is a critical component of water infrastructure, a more conservative approach would be to use a medium- to high-risk aversion likelihood. The Council recommends that the modeling supporting the Final EIS consider more conservative approaches, for example incorporate a 0.5% probability which meets or exceeds 24-cm (10-inches) of sea-level rise across all proposed alternatives.

Chapter 3 Alternatives: The Draft EIS analyzes a No Action alternative and four project alternatives and compares the project alternatives to the No Action alternative across a range of future outcomes and benefits to select a preferred alternative. The following comments address assumptions and analyses associated with each alternative.

³ http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPCTSLR_Guidance-rd3.pdf

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- 3.4 Alternative 1 (Flow-related actions, habitat restoration, and intervention measures – the Draft EIS Preferred Alternative)
 - *Upper Sacramento River (Shasta and Sacramento Divisions), Coldwater Pool Management* – Under Reclamation’s water right with the State Water Resources Control Board, Order 90-5 requires the operation of Shasta Reservoir, among other Reclamation reservoirs, to control temperatures to protect fishery resources and to monitor and report compliance with those requirements. The Draft EIS states the temperature of released water is controlled by managing the coldwater pool through the use of the Shasta Temperature Control Device. Reclamation would determine the volume of water stored to manage the coldwater pool based on monthly (or more frequently) reservoir temperature profiles. Alternative 1 should include consideration of a weekly reservoir temperature profile period, use of weather forecasts in its estimates, and inform stakeholders more often to be more responsive to dynamic conditions that occur daily and hourly.
 - *Intervention Components, Delta Cross Channel (DCC)* – Alternative 1 proposes the continued operation of the DCC gates to reduce juvenile salmonid entrainment risk beyond actions consistent with Delta water quality requirements in D-1641. Although the operation of the DCC gates have provided water managers, operators, and in-Delta users flexibility to support various use objectives, the DCC facility has been used beyond its original design and operation since its construction in 1951. Alternative 1 should include modernizing or replacing the DCC among its proposed actions.
 - *Old and Middle River Management, Delta Smelt Summer-Fall Habitat* – Alternative 1 proposes that Reclamation and DWR would use structured decision-making to implement Delta Smelt habitat actions and incorporate a “Four Year Review” of such actions in 2024 and 2028. The Draft EIS outlines a component of the action for the project operations to maintain a monthly average of 2 parts per thousand isohaline at 80 kilometers (km) from the Golden Gate Bridge in above normal and wet water years in September and October with offramp criteria (Draft EIS, Page 3-37). The study, *Implications for future survival of delta smelt from four climate change scenarios for the Sacramento–San Joaquin Delta, California* (Brown et al. 2013⁴), suggests that the distance from the Golden Gate Bridge should be at a range of 72 km instead of 80 km for increased benefits to Delta Smelt. Alternative 1 should be adjusted to employ the 72km range.

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<https://ca.water.usgs.gov/projects/baydelta/publications/Brown%20et%20al%202013%20Delta%20smelt%20and%20climate%20change.pdf>

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Past Long-term Operation Biological Opinion (LOBO) Biennial Science Reviews: There are biennial science reviews of CVP and SWP actions to implement the BiOps developed in 2008 and 2009. The purpose of the review is to inform NMFS and U.S. Fish and Wildlife Service (USFWS) as to the efficacy of prior years' water operations and regulatory actions prescribed by their respective RPAs.

In the 2015 LOBO review, the Independent Review Panel (IRP) voiced concerns about the temperature data collection for conditions at Shasta Reservoir. They pointed to the adequacy of data gathering methods and a lack of accuracy, redundancy, and resolution in the instrumentation used for data collection. The IRP made several recommendations for improvements, but it is unclear from the Draft EIS if any of the recommendations have been incorporated, or if the concerns of the IRP were addressed in a different manner. The Final EIS should address this concern from the 2015 LOBO review.

The Council is encouraged to see Reclamation's commitment to the continued use of independent panel reviews as a tool to ensure that management decisions rely on the best, current scientific understanding by including IRP in the Governance section of the Preferred Alternative. According to the Council's standards for an independent panel, though complete consensus is not always reached, a joint report from all panel members is a key component. For more information, see Appendix H in the Delta Science Plan

<http://deltacouncil.ca.gov/pdf/2019-delta-science-plan.pdf>. The Council looks forward to supporting the IRP effort and working with Reclamation and the other agencies involved as needs arise.

Closing Comments

We are available to discuss issues outlined in this letter as you proceed in the next stages of your project and approval processes. Please contact Anthony Navasero at (916) 445-5471 (Anthony.Navasero@deltacouncil.ca.gov) with any questions.

Sincerely,



Jeff Henderson, AICP
Deputy Executive Officer