Table 4-1. Responses to Comments on the RDEIR/SDEIS

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1-1	Please ensure this MMP meets the requirements of the California Environmental Quality Act (CEQA), as amended (Guidelines Section 15074(d)), which mandates the preparation of monitoring provisions for the implementation of mitigation assigned as part of Project approval or adoption.	Please see Master Response 2, Alternatives Description and Baseline, regarding use and incorporation of mitigation measures and adoption of a Mitigation Monitoring and Reporting Program.
2-1	Sites would be used to water Westland's poisoned lands and fill the Delta tunnel. Screw that!	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
3-1	I'm opposed to the construction of the Sites Reservoir for the following reasons: It's my understanding that a large transfer pipe(s) would be built to carry water from the Sacramento River, somewhere at the Colusa/Glenn area, to fill the proposed Sites Reservoir. If that's the case I find that a great disruption of current ag land. Not to mention that the value of the private land would be bought at below market rate in the name of governmental priority and need. The thought of going under Interstate 5 for this routing tunnel project is unfathomable.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
3-2	Finding the adequate flow of water from the Sacramento River will be the next problem facing this project. With the Sacramento River at one its lowest ebb, where will the water come from to fill Sites Reservoir? Ad you know Shasta Lake is at one its lowest points in its history. You cannot count on future rain water, that's easy to predict. Nor can you count on snow runoff from Mt. Shasta for any substantial water flow. The project to raise Shasta Dam has all but been canceled. The water level has not reached the top of the dam for years to warrant raising it. Therefore, where will the water come from to transfer to a project such as Sites?	Please see the discussion of the merits of the Project and alternatives in Master Response 2, Alternatives Description and Baseline, for information regarding the specific circumstances under which diversions to Sites Reservoir would occur. Please see Master Response 9, Alternatives Development, for an overview of the development and range of alternatives considered.
3-3	Who will control the allocation of this water and for what usage?	Please see Master Response 2, Alternatives Description and Baseline, regarding the alternatives description.

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3-4	How will evaporation be controlled?	The Reservoir Operations Plan, which is described in Chapter 2, Project Description and Alternatives, Section 2.5.2.4, Operations and Management Plans, describes the management of water operations and accounts for losses and evaporation. Additional discussion of the Reservoir Operations Plan can be found in Master Response 2, Alternatives Description and Baseline.
3-5	Will the proposed reservoir be additionally used for recreation purposes?	The Project proposes the development of recreation areas that are discussed in Chapter 2, Project Description and Alternatives.
3-6	Please cancel this extremely expensive project before any further action is taken on the proposed Sites Project.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
4-1	I'm writing to SUPPORT construction of the Sites Reservoir. The project is not only necessary in view of our drought but enjoys a broad base of support from many sources. The environmental impact is very minimal and far outweighed by the benefits of the project. Please expedite this project and get it built.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
5-1	The fish species are not designed for recreational activities of any type please cancel all plans for open up the protection of sites for public people to fish please end it.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives and Master Response 5, Aquatic Biological Resources, regarding aquatic biological resources and environmental impacts on fish.
6-1	This is my 44th letter to the California Water Commission (CWC). Please add this comment to the 15 Dec 2021 CWC meeting agenda item 10 Sites Project Continuing Eligibility and Feasibility Determination.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding information related to the California Water Commission and its involvement in the Sites Reservoir Project. The California Water Commission process with regard to the provision of funding for the Project is distinct from the lead agency processes by the Authority and Reclamation in deciding whether, and if so how, to approve the Project within their statutory authorities.
6-2	The West currently has millions of acre feet in unused water surface storage capacity in the Colorado, Sacramento and San Joaquin river basins. Building more off stream reservoirs like Sites is a waste of money and the diesel	The comment expresses general opposition to the Project and references potential impacts on several resources, all of which are addressed in the EIR/EIS (e.g., see impact analyses in Chapter 21,

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	powered construction and earth moving equipment will just add more carbon to the atmosphere worsening climate change. Sites off stream reservoir is a dumb idea. Los Vaqueros off stream reservoir is a dumb idea. These failed projects degrade my water quality and kill salmon and steelhead.	Greenhouse Gas Emissions; Chapter 28, Climate Change; Chapter 6, Surface Water Quality; and Chapter 11, Aquatic Biological Resources). Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
6-3	I know Jerry Brown Sites Executive Director. He used to be the General Manager for Contra Costa Water District (CCWD) that provides nasty, expensive tap water to my home. I have been on the receiving end of Jerry Brown's lies and obfuscation. In preparation for this comment I was not surprised to read in the Sites board agenda [Exhibit 1] which he dictates that he listed negotiations with Fish and Wildlife followed by his performance evaluation in a Closed Session. The next month [Exhibit 2] Jerry Brown's consulting contract was increased to $37,275/month, annualized that is 2.6 times what Governor Newsom makes. He is not worth minimum wage in my opinion.	The comment does not raise an issue related to the Authority's or Reclamation's environmental impact analysis as reflected in the RDEIR/SDEIS. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS.
6-4	Exhibit 1 - Screen shot of agenda for closed session	The exhibit does not raise an issue related to the Authority's or Reclamation's environmental impact analysis as reflected in the RDEIR/SDEIS.
6-5	Exhibit 2 - Screen shot of minutes/agenda regarding compensation	The exhibit does not raise an issue related to the Authority's or Reclamation's environmental impact analysis as reflected in the RDEIR/SDEIS.
6-6	How are the fish fairing in the Fish and Wildlife negotiations on Sites construction, operation terms, conditions and agreements? I have experienced Jerry Brown's obfuscation so I wasn't going to waste my time sending Sites project authority a public records request so I sent a request to Fish and Wildlife [Exhibit 3]. After some back and forth Fish and Wildlife wrote me they are searching for records and will try to respond within 90 days of my original request.	Please see Master Response 2, Alternatives Description and Baseline, regarding approach and adequacy of analysis; see Master Response 5, Aquatic Biological Resources, regarding analysis of impacts on fish. The Authority and Reclamation acknowledge the commenter has requested information from the U.S. Fish and Wildlife Service.

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6-7	Exhibit 3 - public records request acknowledgment from CDFW	The exhibit does not raise an issue related to the Authority's or Reclamation's environmental impact analysis as reflected in the RDEIR/SDEIS.
6-8	In scheduling this Sites continuing eligibility determination on the CWC agenda and Sites EIR comments for 15 Dec 2021 you are left with no alternative but to determine Sites ineligible for continued Prop 1 funding and recirculate the Sites EIR when we all have read "Sites Project construction and operation terms, conditions and agreements with the State of California, Department of Fish & Wildlife".	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding information related to the California Water Commission and its involvement in the Sites Reservoir Project.
7-1	I am very concerned about the construction of this reservoir. The local salmon population is already struggling and barely hanging on. Without proper and protections for the salmon run we will lose them. I live in Washington and I was born in California. I am sick of seeing new reservoirs built in California and Washington without strict environmental impact consideration and action. My father fought for the deconstruction of harmful California damns in the 80s and 90s. It is ridiculous that in 2021 our government still turns a blind eye to the environmental impact these reservoirs have. We need to do better California.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives and Master Response 5, Aquatic Biological Resources, regarding aquatic biological resources and environmental impacts on fish.
8-1	Friends of the River and allied organizations respectfully request a 31-day extension of time to provide public comment on the Revised Draft Environmental Impact Report/Supplemental Environmental Impact Statement ("RDEIR/SDEIS") for the Sites Reservoir Project. See attached letter.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review period. As explained in that response, the Authority and Reclamation initially provided a 60-day comment period and then extended the comment period by 17 days, resulting in a 77-day period for public review and comment on the RDEIR/SDEIS.
8-2	Friends of the River (FOR) is a statewide organization that is dedicated to protecting and restoring rivers. FOR and allied organizations respectfully request a brief 31-day extension of time to provide public comment on the Revised Draft Environmental Impact Report/Supplemental Environmental Impact Statement ("RDEIR/SDEIS") for the Sites Reservoir Project.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding commenter-provided information on their organizations. Please also see Master Response 1 regarding the public review period and extension of the public review period by 17 days.

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8-3	The RDEIR/SDEIS was circulated for public review on November 12, 2021, making the deadline for public comment January 11, 2022. Most of this time period overlaps with the holiday season, which means that the FOR team and many other organizations will not have the ability to adequately review the RDEIR/SDEIS. Additionally, the RDEIR/SDEIS and associated appendices are thousands of pages of complex technical material that evaluate three new project alternatives that include reservoir sizes from 1.3 to 1.5 million acre-feet. This important environmental analysis will have significant implications for the Project, the Sacramento and Trinity Rivers, and California's sustainable water future. FOR and others need to have time to provide meaningful feedback. Finally, an extension of the comment period will not impact the overall Environmental Review Process and Timeline, which does not anticipate of the release of the Final EIR/EIS until Fall 2022. For these reasons, we request to extend the comment deadline to February 11, 2022.	Please see the response to comment 8-1.
8-4	Thank you in advance for your consideration of this request. Please feel free to contact Friends of the River's Senior Policy Advocate, Ron Stork, rstork@friendsoftheriver.org, or Resilient Rivers Director, Ashley Overhouse, ashley@friendsoftheriver.org, if you have questions, concerns, or require additional documentation.	Please see the response to comment 8-1.
9-1	These comments primarily address the obligations of the state-wide and local California entities involved in the Sites Project under the constitution, statutes and the Public Trust Doctrine. Satisfying CEQA requirements does not necessarily mean that the agency obligations under the Public Trust Doctrine have been met; and, the obligation to comply with Public Trust Doctrine requirements may circle back, creating issues that must be addressed in the CEQA documents. For example the public trust and statutory requirement to refrain from unnecessary interference with public	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding Public Trust and California Reasonable Use Doctrines.

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	access to and use of lands and waters for fishing or other recreational pursuits may require additional consideration of the environmental effects of the public's exercise of those rights of access and use	
9-2	The waters of the proposed Sites reservoir will be subject to the public right to navigate including the incidents of navigation: hunting, fishing, boating, wading, swimming, walking along the shore, picnicking, and other recreational pursuits, exercised on the water and on the temporarily dry banks of the water below ordinary high water mark (People ex rel. Baker v. Mack, (1971) 19 Cal. App. 3d 1040, 97 Cal. Rptr. 448, 1971 Cal. App. LEXIS 1351, 3 ERC (BNA) 1391, 19 Cal. App. 3d 1040, 97 Cal. Rptr. 448, 1971 Cal. App. LEXIS 1351, 3 ERC (BNA) 1391 (Fall River); State of California v. Superior Court (Lyon) (1981)), 29 Cal. 3d 210, 625 P.2d 239, 172 Cal. Rptr. 696, 1981 Cal. LEXIS 135, 11 ELR 20476, (Clear Lake)). The Site Project Authority is a Califonria joint powers agency composed of Califonria state agencies. Counties, districts and other California local agencies are mere extensions of the State, so lands held in the name of the local agencies, or their joint powers entities, is state-owned land subject to laws governing state-owned land. Any state-owned land including that involved in the project is subject to a public right to fish, although the public may not be able to fish while the land is being used for a purpose incompatible with public fishing – for example a prison or a mental institution. There is no exception for land acquired from private parties, land acquired for a governmental purpose, or land hled in the name of a local agency (section 25, article I Cal. Const., California v. San Luis Obispo Sportsman's Assn., 22 Cal. 3d 440, 584 P.2d 1088, 149 Cal. Rptr. 482, 1978 Cal. LEXIS 297, 9 ELR 20012, 22 Cal. 3d 440, 584 P.2d 1088, 149 Cal. Rptr. 482, 1978 Cal. LEXIS 297, 9 ELR 20012). No land owned by the State shall ever be sold or transferred without reserving in the people the absolute right to fish thereupon. There is no exception for land purchased from private parties, nor for land purchased or used for a governmental purpose. These fishing rights are not limited to navigable	As described in Chapter 2, Project Description and Alternatives, and in Chapter 16, Recreation Resources, construction of the Project would include development of recreation areas to provide public access.

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	water, but instead extend to all state-owned land. (section 25 article I, Cal. Const., California v. San Luis Obispo Sportman's).	
10-1	I urge a denial of Sites Reservoir on the following grounds: Location is a hot, evaporative basin which will lose water by evaporation many months of the year. Sacramento River cannot spare the water this project and its beneficiaries will demand. The river is already at the breaking point for survival of Salmon and other aquatic organisms.	The comment expresses general opposition to the Project and references potential impacts on several resources, all of which are addressed in the EIR/EIS. Please see Master Response 2, Alternatives Description and Baseline, regarding merits of the Project and alternatives. Please see Chapter 6, Surface Water Quality, which discusses evapotranspiration. Please also see Chapter 11, Aquatic Biological Resources, and Master Response 5, Aquatic Biological Resources, regarding analysis of impacts on fish. As described in Master Response 5, the Project will allow Storage Partners to deliver water from Sites Reservoir in exchange for conserving water in upstream reservoirs for use at times and locations that maximize potential benefits to anadromous fish.
10-2	Expense is problematic. Billions must be spent on a project that will benefit mega-farms and real estate developers, not the public.	The comment does not raise an issue related to the Authority's or Reclamation's environmental impact analysis as reflected in the RDEIR/SDEIS.
11-1	I started farming in Willows in the spring of 1978. In the first weeks of my work, our ranch foreman took me to a small valley west of Maxwell. There on the side of the road was a large wooden sign declaring "Future Home of Sites Reservoir". That was 43 years ago. Since then the project has been studied to death by DWR, the BOR, and many environmental groups. It has served as a full employment act for rafts of biologists, engineers, and environmental consultants. In spite of the fact that the large majority of the water it would impound would be used to benefit fish habitat, it is still languishing in Congress. In spite of the increasing frequency of drought conditions in California and approval for the project voted on by the citizens in Prop 1, it's construction start is still uncertain.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the permitting timeline and processes. Please also see Chapter 2, Project Description and Alternatives, regarding timeframes for the Project.

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	Please explain in public, for all to see, what the definitive prospects are, if any, for the completion of this project.	
12-1	I would like to start by saying The Sites Reservoir is NOT economically, financially, or environmentally feasible. NEW RESERVOIRS DO NOT CREATE WATER- We urge the Commission to carefully review and consider the legal requirements for Sites Reservoir given the impacts of CLIMATE EXTREMES, including severe drought,. These impacts have TESTED California's water system. Surface water storage is VULNERABLE to climate impacts, and NOT the most resilient form of water storage. SITES IS NOT ECONOMICALLY FEASIBLE- The proposed Sites Reservoir Project is the MOST EXPENSIVE of the projects that received Water Storage Investment Program (WSIP) funds. It received millions in taxpayer funding for design, permitting, and environmental work, however the Sites Authority does not have water rights. 5 times more water is allocated than exists and winters are getting dryer in California. The reservoir may not fill and water will be expensive. SITES DOES NOT BENEFIT LOCAL COMMUNITIES- Northern California can NO longer afford the cost of further WATER DIVERSIONS. The majority of project funding for Sites that is expected to come from urban State Water Project Contractors and diversions ONLY benefit the southern parts of the state.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the California Water Commission and Water Storage Investment Program (Proposition 1) and water rights. Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
12-2	SITES HURTS THE ENVIRONMENT AND VIOLATES THE LAW: In the original draft Environmental Impact Review (EIR) the Site Authority, REJECTED the Department of Fish and Wildlife's proposed conditions on water diversions for the Sacramento River and admitted diversions will greatly reduce salmon production. The revised draft CONTINUES to propose diversions INCONSISTENT with flow recommendations. Sites Reservoir FAILS to provide an accurate project description or operations plan. It FAILS to use an accurate environmental baseline by utilizing the Biological Opinions issued during the Trump Administration and FAILS to adequately assess	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the CEQA/NEPA process and document development, 2017 Draft EIR/EIS, California Water Commission and the Water Storage Investment Program (Proposition 1), and water rights. Please also see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives, the baseline conditions, and adequacy of the impact analysis.

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	environmental impacts. SITES PUBLIC BENEFITS DO NOT EXIST- Operations remain dependent on conditions on diversions to be established by the State Water Resources Control Board, the construction of Delta transfer facilities such as the DELTA TUNNEL, and the needs of a still uncertain pool of buyers of the water diverted into Sites reservoir from the Sacramento River. A healthy degree of skepticism is warranted by the Commission on whether this Project will meet Proposition 1 objectives.	
12-3	SITES IS A THREAT TO NATIVE PEOPLE- Sites reservoir would inundate Native American burial grounds, ceremony sites, and three creeks and DEGRADE salmon runs that Tribes used to be able to rely on. SITES HARMS FISH-The Sacramento River used to have an abundant spring run, a fall run, a late fall run, a winter run and Coho salmon, but now all salmon populations except for one, the fall run, are now listed under the Endangered Species Act in California. In the Trinity River, which would also be impacted by the Sites Reservoir, the Coho and Spring Salmon are facing EXTINCTION.	Potential impacts on cultural and Tribal cultural resources are analyzed in Chapter 22, Cultural Resources, which acknowledges that impacts on archaeological resources would be significant and unavoidable under Alternatives 1, 2, and 3, and in Chapter 23, Tribal Cultural Resources, which acknowledges that impacts on Tribal cultural resources would be significant and unavoidable under Alternatives 1, 2, and 3. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the Authority and Reclamation's consultation and engagement with Tribes, as well as Reclamation's fulfillment of federal trust obligations. In addition, please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives and Master Response 8, Trinity River, regarding the Trinity River.
12-4	SITES HARMS DRINKING WATER FOR MILLIONS OF CALIFORNIANS rely on the Sacramento Bay Delta, but low flows have led to high concentrations of agricultural pesticides and toxic algae in drinking water supplies. Sites would not only divert more water, but also release hot, polluted water into the Delta.	Chapter 6, Surface Water Quality, provides a full analysis of potential impacts on water quality. Additional information regarding the type of data and modeling results used is provided in Master Response 4, Water Quality.
13-1	Page 23-12 of the TCR chapter states that UAIC was contacted and provided no response. This is not correct. UAIC was contacted and emailed with Janis Offerman, Cultural Resources Practice Lead of Horizon Water and Environment, on July 22, 2021 for the Sites Reservoir Project - Notification of Proposed Project for the Purposes of CEQA Analysis. The email stated	The Final EIR/EIS has been revised to reflect communication conducted after the draft chapter was submitted for production, which was prior to the July 22, 2021, communication with United Auburn Indian Community.

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	UAIC will "defer tribal consultation to affiliated tribes that are closer to this project. However, we would like to continue to receive project updates and have the opportunity to review and comment on the draft environmental report, including the cultural report. Please also let me know if other tribes are actively consulting". Stating in your document that UAIC was unresponsive is incorrect and should accurately reflect our input to the project.	Master Response 7, Tribal Coordination, Consultation, and Engagement, details the Authority's Assembly Bill (AB) 52 outreach activities and documents UAIC's response. The Authority has been in touch with the commenter regarding ongoing consultation efforts with other Tribes.
14-1	Are you completely nuts. No No No. How dare you take the Sacramento River to use as your personal payday. Have you no conscience. You have seen recently how greed and climate change has ruined nature. Now you wish to abuse and use it more for a reservoir which will take it's water from the river: which has to flow freely. What do you think will happen when you deny the river what it needs. Are you sociopaths? Do you not understand the balance of nature? We are all experiencing now what messing with nature looks like. How dare you put another stress on another ecosystem. The earth will always respond to offenses made by greedy men. Obviously. Look around.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
15-1	No water ---> Empty reservoir Constructing the Sites reservoir is likely a dumb idea. The climate of California is presently hotter and dryer than in the past. The future climate of California will be hotter and dryer than the present. Findings of recently published research (See below) on future quantities of snow in the Sierra Nevada mountains indicate there will be significantly less snow than the	Chapter 28, Climate Change, summarizes modeling results associated with climate change and climate change effects. The modeling results and the modeling used for analyzing climate change are provided in Appendix 28A, Climate Change, which includes the effects of climate change on future precipitation as reflected in the revised 2035 Central Tendency (CT) results and the modeled Water Storage Investment Program (WSIP) 2070 results (provided as part of the Final EIR/EIS).

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	present. Likely future snow accumulated in the Coast Range will be less than present. Snow fall on these mountain ranges are derived from the same storms. What will is 'bad' for the Coast Range will be 'bad' for the Sierra Nevada. Though Sites seemed like a good idea in the past it is not a good idea in the future. The future in plain sight. I strongly encourage you to read the report of research, available through University of California at Davis. – A low- to-no-snow future and its impacts on water resources in the western United States. Authored by Siirila-Woodburn, October 26, 2121. nature reviews Earth and environment.	Section 28.3, Methods of Analysis, in Chapter 28 describes the methods used to evaluate potential effects associated with climate change. The analysis is based on the Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, released by CEQ on August 5, 2016 (Council on Environmental Quality 2016). The 2016 guidance indicates that NEPA analyses should identify climate change effects on a proposed action and the potential effects of the proposed action on climate change by assessing GHG emissions. Estimated GHG emissions for the Project are included in Chapter 21, Greenhouse Gas Emissions. Additional information on how climate change was considered in the hydrologic modeling and hydrology analysis can be found in Master Response 3, Hydrology and Hydrologic Modeling. Additionally, please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
16-1	Already too much water has been removed from our natural systems for economic growth. There should be no excess water in any year, except for natural flows through the Delta and San Francisco Bay. All that is needed to flush the system and to encourage fish and wildlife. The loss of the Delta Smelt from the system is proof enough. The food web of the Delta needs to be resurrected. The nut industry is draining our aquifers, raising dust in our local atmospheres, and reducing the diversity of our agricultural base. More water needs to run through the Delta system to sustain it. That is as simple as I can make it. I oppose the Sites Project.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
17-1	The Maxwell Fire protection district covers 208 Square miles {LAFCO} we cover from Glenn Colusa county line to Lurline Rd and as far west as Rail Canyon Rd and to the 2047 canal to the east.	Chapter 26, Public Services and Utilities, Section 26.2.1.2, Fire Protection, describes the existing setting for fire protective services in the study area. The text has been updated in the Final EIR/EIS to reflect the newer information provided by the commenter.

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	We have 3 full time personal and 34 volunteer. MFPD is the only fire department in Colusa County that has an ambulance for patient transport to the hospital. Part of the MFPD is within the state response area for wildfires and MFPD is the first to respond to all fires in the SRA until Cal fire arrives to assume command of the incident. MFPD is responsible for all non- fire emergency call within our district.	The text edits do not change the impact determinations or conclusions in the chapter. Emergency access for emergency responders is analyzed under Impact TRA-4 in Chapter 18, Navigation, Transportation, and Traffic, and emergency response is discussed in Chapter 26, Impact UTIL-1. The Authority will work with emergency service providers, including first responders, during construction and operations, as explained in Chapter 18, Impacts TRA-1 and TRA-4; Chapter 26, Impact UTIL-1; and Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. Appendix 2D describes the development and implementation of a construction equipment, truck, and traffic management plan (BMP-16, Development and Implementation of a Construction Equipment, Truck, and Traffic Management Plan (TMP)) during construction. The Authority would develop the traffic management plan in coordination with the applicable jurisdictions, including local agencies for local roads, transit providers, and rail operators, where applicable. Construction notification procedures would be provided for Colusa, Glenn, Tehama, and Yolo Counties' services as needed (i.e., police, public works, fire departments). Chapter 26, Public Services and Utilities, Section 26.2.1.2, Fire Protection, describes the existing setting for fire protective services in the study area. The text has been updated in the Final EIR/EIS to reflect the newer information provided by the commenter. The text edits do not change the impact determinations or conclusions in the chapter. Emergency access for emergency responders is analyzed under Impact TRA-4 in Chapter 18, Navigation, Transportation, and Traffic, and emergency response is discussed in

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		Chapter 26, Impact UTIL-1. The Authority will work with emergency service providers, including first responders, during construction and operations, as explained in Chapter 18, Impacts TRA-1 and TRA-4; Chapter 26, Impact UTIL-1; and Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. Appendix 2D describes the development and implementation of a construction equipment, truck, and traffic management plan (BMP-16) during construction. The Authority would develop the traffic management plan in coordination with the applicable jurisdictions, including local agencies for local roads, transit providers, and rail operators, where applicable. Construction notification procedures would be provided for Colusa, Glenn, Tehama, and Yolo Counties' services as needed (i.e., police, public works, fire departments). Likewise, Appendix 2D describes the development and implementation of the Recreation Management Plan prior to and during operations. One of the purposes of the Recreation Management Plan is to ...describe the coordination with Glenn and Colusa Counties to support emergency services at the recreational facilities and will describe requirements for fire suppression in the recreation areas." The Authority will be responsible for maintaining fire-suppression equipment (e.g., fire extinguishers, fire blankets) at recreational facilities, as well as in the administrative buildings and all Authority vehicles. In addition, Authority employees will be trained in fire-suppression techniques and use of all fire-suppression equipment at least once a year and in documenting the training. Text has been added to Section 26.3, Methods of Analysis, of the Final EIR/EIS acknowledging the implementation of the Recreation Management Plan and the Authority's support of emergency service providers, including first responders during operations. As noted, the text

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		revisions do not change conclusions or impact determinations identified in the impact analysis.
18-1	In your study it states "the WWTP has capacity to service approximately 1,000 new connections." The District was not contacted for information and I do not know where this information came from. At this time, the District is not capable of servicing that many more connections. I have attached the Districts Engineering Report [ATTMT 1] for the WWTP date November 2008. Please look it over and contact me if you have any further questions or concerns. Please include the MPUD in any of your information ascertained in regard to the District. This information was brought to my attention by Maxwell's Fire Chief. I am willing to work with your project to the fullest.	The commenter notes that Table 26-3 in Chapter 26, Public Services and Utilities, of the RDEIR/SDEIS indicates that the Maxwell Public Utility District Wastewater Treatment Plant (WWTP) "has the permitted capacity to service approximately 1,000 new connections." This number was taken directly from Section 3.7.4 (Wastewater Treatment Capacity) of the Colusa Local Agency Formation Commission (LAFCo) Hearing Draft (cited as Colusa LAFCO 2017 in Chapter 26) for the Maxwell Public Utility District, dated September 2017. The document referenced in this comment is not available for public viewing and is older than the more recent document, obtained from the commenter, which is referenced in the RDEIR/SDEIS. In addition, the commenter's referenced document states, "The MPUD plans to upgrade the existing WWTF to increase its capacity and recycle the treated effluent for irrigation rather than discharge it to surface water." These upgrades are identified in the more recent LAFCo document, along with the revised capacities and change to discharge point.
18-2	ATTMT 1: Title 22 Engineering Report, Maxwell Wastewater Treatment & Disposal Facilities, dated November 2008. Prepared for the Maxwell Public Utilities District	The commenter provided this attachment for reference purposes in support of comment 18-1, and the response to comment 18-1 addresses the contents of the attachment. No further response is required.
19-1	The Draft EIR is an improvement from the 2017 version in that it at least acknowledges some water quality issues, but it continues to ignore other water quality issues, makes inaccurate and misleading statements, and offers conflicting and contradicting strategies to attempt to lessen significant and substantial adverse impacts.	Your comment regarding a more detailed approach to water quality analysis has been noted. The water quality impact analysis in Chapter 6, Surface Water Quality, concludes less-than-significant effects on surface water quality with respect to salinity, water temperature, harmful algal blooms (HABs), invasive aquatic vegetation, nutrients, organic carbon, and dissolved oxygen (DO). The analysis acknowledges the potential for significant water quality impacts

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		related to methylmercury, metals in Stone Corral Creek, and metals and pesticides in Yolo Bypass and introduces Mitigation Measures WQ-1.1, WQ-2.1, and WQ-2.2, respectively, to address these potentially significant impacts. As indicated in Chapter 6 regarding Mitigation Measure WQ-1.1, although the potential to reduce methylmercury concentrations exists based on current research, the effectiveness of the methylmercury minimization actions to reduce methylmercury concentrations in Sites Reservoir specifically is not known at this time, and, thus, the impact is significant and unavoidable. Responses to each comment are provided below. Responses demonstrate that the analysis does not ignore water quality issues, is based on sound science and thorough analysis, and provides feasible mitigation strategies for reducing impacts that have been identified as significant.
19-2	The data in the WDL for the Sacramento River and Cottonwood Creek demonstrate that high concentrations of metals can be expected during the high flow months of winter (December through March) when diversions would be occurring to the proposed Sites Reservoir. Higher concentrations of metals are likely during the higher flows that can occur during these months. Such higher flows were not targeted by the limited sampling effort presented in the WDL. The high concentrations of metals in the source water will adversely impact water quality in the proposed reservoir for most, if not all, the proposed beneficial uses of the stored water. Some metals from both the Sacramento River and Cottonwood Creek, whose concentrations did not exceed criteria in the limited sampling efforts, had concentrations that nearly exceed the criteria and standards. These and other metals whose concentrations did not exceed the criteria may have	Please refer to Master Response 4, Water Quality, for a discussion of the evaluation approach related to metals in Chapter 6, Surface Water Quality. Although water quality measurements did not target high flows, multiple measurements were taken during higher flows. Master Response 4 discusses available data and how the available data were used to develop exponential equations to estimate metal concentrations as functions of tributary input and flow, allowing estimation of concentrations under more extreme conditions than what was present during measurements. Under conditions of high flow and tributary input, the estimated values can be higher than measured values. Master Response 4 also contains a discussion of metal effects on beneficial uses.

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	higher concentrations during the higher flow periods that the proposed project would be diverting. Again, these higher flow periods were not targeted during the limited sampling effort.	
19-3	Even some of the minimum concentrations of metals found in the source waters exceed criteria and standards, which means that the source waters never meet these goals and standards - the criteria are always exceeded and the water is never suitable for the beneficial use or uses the criteria or standards were designed to protect. Water quality in the proposed reservoir for these parameters will exceed the criteria and standards all the time	Use of water for beneficial uses is controlled by regulatory standards. As discussed in Master Response 4, several metals have ideal concentration goals that are close to zero, but these are not regulatory standards. Although the Sacramento River does not meet all water quality goals (e.g., California drinking water public health goal for arsenic of 0.004 micrograms per liter [µg/L]) and during high flows it occasionally exceeds water quality standards for aquatic life protection, the water quality in the river does not prevent beneficial uses, including recreation, habitat, agricultural supply, and drinking water supply. Please see Master Response 4, Water Quality, for a discussion of regulatory standards used for evaluation, which are primarily California maximum contaminant levels (MCLs) for drinking water and freshwater chronic standards for aquatic life protection. The metals evaluation focused on the more conservative standards, which were generally those for aquatic life protection. Please see Chapter 6, Surface Water Quality, Impact WQ-2 and Master Response 4, Water Quality, regarding why the standards for total concentrations chosen for the evaluation performed in Chapter 6 conservatively overestimate exceedances of standards. As described in Chapter 6, Surface Water Quality, and Master Response 4, it is not expected that any of the metal concentrations in Sites Reservoir would continually exceed water quality criteria for aquatic life. Master Response 4 also explains why beneficial uses are unlikely to be affected beyond impacts identified in Chapter 6 of the

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		RDEIR/SDEIS. This is primarily because metal concentrations are likely to decline substantially as a result of settling of suspended sediment, metal concentrations (aside from mercury) would not impact users of the reservoir, and releases from Sites Reservoir would be diluted.
19-4	Since water quality in the proposed reservoir will reflect that the source waters, the reservoir will have concentrations of numerous metals, including aluminum, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc, that exceed a number of criteria and standards developed to protect beneficial uses. In addition, other metals that may not exceed criteria and standards on the source waters may adversely affect reservoir water quality due to synergistic effects. The State Water Resources Control Board (SWRCB 2011) states that "when multiple constituents have been found together in groundwater or surface waters, their combined toxicity should be evaluated" and that "theoretical risks from chemicals found together in a water body shall be considered additive for all chemicals having similar toxicologic effects or having carcinogenic effects." Thus, the adverse effects from the metals delivered to the proposed reservoir from the source waters may have an even greater adverse impact and pose an unacceptable level of risk. Beneficial uses potentially impacted by metals in the proposed reservoir include agricultural water supply (direct toxicity or uptake by crops making the crops unsuitable for use), wildlife (such as fish-eating birds), fisheries, recreation (including sport fishing and water contact activities such as swimming), and drinking water	Please see response to comment 19-3 and Master Response 4, Water Quality, regarding meeting water quality standards and providing beneficial uses including agricultural water supply, wildlife, fisheries, recreation, and drinking water supply. In addition, Master Response 4 discusses why the selected metals were those most likely to experience an increase in exceedance of water quality standards and therefore provide a reasonable representation of the potential water quality impacts associated with operational effects on metal concentrations. Master Response 4 also explains why the combined effects of metals on aquatic resources is difficult to determine due to the variable nature of the interaction of effects.

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	supplies for communities that divert water from the Sacramento River.	
19-5	Releases from the proposed reservoir would occur during the summer when metals concentrations in the Sacramento River are much lower due to the majority of flow being from Shasta Reservoir, with much better water quality, though still carrying a metals load. High metals concentrations in the proposed reservoir releases could adversely affect water quality in the Sacramento River during the summer months by increasing metals loads beyond acceptable limits and adversely impact beneficial uses.	The possibility of increases in Sacramento River metal concentrations was evaluated in Chapter 6, Surface Water Quality, under Impact WQ-2. The analysis indicates that, aside from mercury, there could occasionally be small increases in metal concentrations in the Sacramento River, with the largest increases likely to occur when the concentrations in the Sacramento River are lowest. When concentrations are high in the Sacramento River, releases from Sites Reservoir would have minimal effect on metal concentrations in the river. This topic is also discussed in Master Response 4, Water Quality. Releases of Sites Reservoir water to the Sacramento River are not expected to increase exceedances of water quality standards in the river.
19-6	Though high concentrations of metals tat exceed water quality criteria exist in source waters to proposed project, they cannot be regulated by governmental entities since they are natural occurrences. However, once contained artificially in a reservoir, they are subject to jurisdictional control by regulatory agencies. Any releases of water from the proposed reservoir will likely be subject to review by water quality regulatory agencies to ensure that such releases do not adversely affect downstream resources due to the heavy metals loads in releases. The SWRCB has an antidegradation policy that prohibits discharges that would degrade water quality to a level below water quality objectives because no capacity would exist for degradation that will be caused by the next downstream or downgradient uses – the ability to beneficially use the water would have been impaired, even though water quality objectives would not yet have been exceeded (SWRCB 2011). The contribution of additional metal loads from releases from the proposed Sites Reservoir during the summer could cause concentrations of metals in the Sacramento River to exceed criteria and standards or at least be subject to the antidegradation policy due to an	The Authority and Reclamation acknowledge and agree the operation of Sites Reservoir, including consistency with the antidegradation policy, will be reviewed by regulatory agencies in accordance with applicable permitting requirements (see Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements, regarding permits, approvals, and consultation processes that are potentially applicable to the Project and agencies that are anticipated to rely on the EIR/EIS for decision-making and implementation). Please see Chapter 6, Surface Water Quality, Impact WQ-2 and Master Response 4, Water Quality, regarding effects on water quality relative to water quality standards. In addition, please see Chapter 6, Section 6.3.2.12, Antidegradation Policy, which discusses how the antidegradation policy is considered and applied by regulatory agencies.

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	incremental increase in metals in the Sacramento River from the proposed project. Thus, the proposed project may face prohibition of releases if stored water does not meet water quality criteria or standards or if releases can cause criteria or standards to be exceeded by downstream inputs (i.e., antidegradation policy).	
19-7	During dry years, the adverse impacts associated with the project can be expected to be even greater. Flows in the Sacramento River from upstream reservoirs on the Sacramento River (i.e., Shasta Reservoir, Whiskeytown Reservoir) will be minimized during the winter months in an effort to restore water storage levels in those reservoirs. Likewise, during wet or even normal runoff years, releases from the upstream reservoirs during the winter will be curtailed during high runoff periods to prevent downstream flooding. In any of these scenarios, tributary influences, such as Cottonwood Creek, on water quality in the Sacramento River will be much greater. The proposed project would still attempt to capture as much runoff from the Sacramento River as possible, but the water diverted to the proposed project will have even greater concentrations of metals due to the majority of flow being from tributary streams (e.g., Cottonwood Creek) during dry and possibly even wet or normal runoff years. Similarly, during the summer in dry years, releases from upstream reservoirs (i.e., Shasta Reservoir, Whiskeytown Reservoir) will be minimized. Releases to the Sacramento River from the proposed project (whether directly to the Sacramento River or indirectly through the CBD or GCID) will have a greater impact on water quality in the Sacramento River due to less dilution being available due to curtailed flows in the river from upstream reservoirs (i.e., Shasta and Whiskeytown reservoirs).	The CALSIM hydrologic modeling results provide estimates of the proportion of water originating from tributaries as opposed to upstream reservoirs during all water year types, including Dry Water Years. As described in Chapter 6, Surface Water Quality, and Master Response 4, Water Quality, these CALSIM proportions are used to estimate metal concentrations in the water diverted from the Sacramento River for Sites Reservoir storage. As described in Chapter 5, Surface Water Resources, due to restrictions on diversions from the Sacramento River, diversions for Sites Reservoir storage would be much greater during Above Normal and Wet Water Years than during Dry Water Years. Metal concentrations in the Sacramento River are a function of both river flow and percent of water from tributaries. If diversions to storage occurred during Dry Water Years, the estimated concentrations would rise due to more tributary input but not due to higher river flow. The CALSIM results also include Sacramento River flows and discharges from Sites Reservoir, so the fraction of Sacramento River water originating from Sites Reservoir can be estimated. These estimates are incorporated into the Chapter 6 analysis under Impact WQ-2. As described and incorporated into Chapter 6, when Sites Reservoir water would be released to the Sacramento River, it would constitute 6%–7% of the Sacramento River flow on average, but 14%–15% when discharges are relatively high compared to river flow (i.e.,

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		90th percentile values, which occur during dry conditions), depending on whether Alternative 1, 2, or 3 was implemented.
19-8	The limited data that are available are sufficient to show that water quality in the proposed reservoir will have concentrations of a large number of metals that exceed many water quality criteria and standards, including those established for the protection of agricultural water supply, wildlife and fisheries, and drinking water. Metals bioaccumulation in the reservoir food web could produce adverse impacts to fish-eating birds and other animals, as well as humans, and adversely affect any potential recreational benefit from the project. Releases from the proposed reservoir could adversely affect downstream resources, including agricultural water supply, wildlife and fisheries, and drinking water supplies for communities that divert water from the Sacramento River.	Please see Master Response 4, Water Quality, and responses to comments 19-3 and 19-4 regarding water quality standards for evaluation and beneficial uses. Please also see Chapter 6 discussion for Impact WQ-2 regarding effects on water quality relative to water quality standards for beneficial uses.
19-9	The Basin Plan lists other chemicals that adversely affect water quality in the Sacramento River, including chlorpyrifos and diazinon. The California State Water Resources Control Board lists a number of other "constituents of concern" in the study area, including chlordane, DDT, mercury, PCBs, and dieldrin. In addition, sewer outfalls from the cities of Redding and Red Bluff contribute other contaminants, such as pharmaceuticals, to the Sacramento River. Other than diazinon and a brief discussion of chlorpyrifos, DDT, and dieldrin, no information is provided in the EIR about effects to the proposed project from these chemical contaminants.	As described in Chapter 6, Surface Water Quality, Section 6.2.2.8, Pesticides, and in Impact WQ-2, pesticide concentrations in the Sacramento River at the locations of Sites Reservoir diversion are generally low and would not result in high concentrations of pesticides in the reservoir or downstream. The graphs provided in Appendix 6E, Water Quality Data, provide additional information regarding pesticides. There is some potential the Yolo Bypass habitat flows could cause relocation of pesticides present in Colusa Basin Drain or the Yolo Bypass, potentially resulting in impacts on aquatic resources. Impacts are identified in Chapter 6 as less than significant with implementation of Mitigation Measure WQ-2.2. Contaminants that occur primarily in sediment and not the water column (including polychlorinated biphenyls [PCBs], dichlorodiphenyltrichloroethane [DDT], chlordane, and dieldrin) were dismissed from evaluation as described in Section 6.3.2.1, Selection of Water Quality Constituents to Evaluate. This is because these

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		pesticide contaminants would not be expected to be any more concentrated in Sites Reservoir than in the Sacramento River or Colusa Basin Drain and would be expected to mostly remain adsorbed to sediment. Similarly, as described in Chapter 6, wastewater treatment plant (WWTP) and industrial discharges were not considered in the analysis because the contaminant load from these discharges would not be affected by the Project, nor would dilution of existing WWTP discharges be compromised. Reduction in Sacramento River flow due to the Project would occur when flow is high and increases in Sacramento River flow would occur when flow is low, potentially improving dilution needed for existing WWTP discharges.
19-10	Chapter 6. Surface Water Quality p. 6-2 and 6-3: Table 6-1b summarizes operation impacts for surface water quality resources. Impact WQ-2 (Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality during operation) is identified as CEQA significant and unavoidable (SU) and NEPA substantial adverse effect (SA) for all alternatives. Yet, somehow this is deemed as not conflicting with or obstructing implementation of a water quality control plan (Impact WQ-5). Since, as identified as Impact WQ-2, the project will violate water quality standards of the Central Valley Water Quality Control Plan (Basin Plan), this is obviously a significant impact and substantial adverse effect which conflicts with the Basin Plan	An exceedance of a water quality control plan (basin plan) water quality objective would not necessarily indicate a conflict with, or obstruction of, implementation of the applicable basin plans for the study area. The potential for the Project to exceed single-constituent water quality objectives, as well as beneficial uses, were considered in the impact analyses presented for Impacts WQ-1, WQ-2, and WQ-3 in Chapter 6, Surface Water Quality. As described in Chapter 6 for Impact WQ-5, water quality control plans include consideration of all beneficial uses (e.g., Central Valley Regional Water Quality Control Board 2019a:2-1, State Water Resources Control Board 2018:9). While consideration of single-constituent water quality objectives is part of the consideration, the approach related to the evaluation of Impact WQ-5 is broader, given the fact that exceedances of single water quality constituents do not necessarily suggest a conflict with or obstruction of implementation of a basin plan. Impact WQ-5 considers the overarching goal of basin plans to maximize multiple beneficial uses of water, considering changes in all beneficial uses

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		along with changes in water quality, not simply whether a single water quality constituent objective would be exceeded.
19-11	p. 6-19: "Mean mercury concentrations in Shasta Lake and in the Sacramento River at Red Bluff and Hamilton City are substantially lower than the CTR criterion for mercury in freshwater (50 nanograms per liter [ng/L])." The Sites Reservoir project will not be diverting "mean" concentrations of mercury (or any other constituent), but rather the higher concentrations of constituents generally associated with the higher flows from which the project will be diverting. In the Sacramento River at Hamilton City, Table 6-5 shows that total mercury concentrations have been measured as high as 54 ng/L, which are higher than the CTR criterion of 50 ng/L, and raise concern for significant and substantial adverse effects when waters with these types of concentrations are diverted into the reservoir.	Total mercury concentrations in Sacramento River diversions to Sites Reservoir may, at times, be higher than the mean concentrations cited for the Sacramento River at Red Bluff and Hamilton City, as identified in Chapter 6, Surface Water Quality. However, in large part, mercury associated with these high flows would be associated with suspended sediment, which would mostly settle out in the reservoir. In addition, the maximum mercury concentration from the combined total mercury measurements in the Sacramento River at Red Bluff and Hamilton City was the only value that exceeded the California Toxics Rule (CTR) criterion, and the 90th percentile value is only 3.86 nanograms per liter (ng/L) (n=150). Mercury concentrations in inputs to the reservoir are therefore expected to be well below the CTR criterion even if higher flows with concentrations greater than the mean are diverted into the reservoir. Furthermore, reservoir concentrations considered in the analysis would, on average, more closely resemble the mean concentrations of inflows than the highs or lows in source water, as inputs will be mixed into the large volume of reservoir water. Comparisons with other nearby reservoirs and lakes can also provide insight into the expected mercury concentrations that would occur at Sites Reservoir. As discussed in Appendix 6F, Mercury and Methylmercury, with the exception of Clear Lake, on which the Sulphur Bank Mercury Mine Superfund site is located, mean concentrations of total mercury were not greater than 4.42 ng/L. None of the almost 500 other samples from nearby reservoirs exceeded the 50 ng/L total mercury CTR criterion. Fish tissue methylmercury concentrations within Sites Reservoir will depend on many factors; however, tissue concentrations are expected to be comparable to those in existing nearby reservoirs in the long term.

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		The implementation of Mitigation Measure WQ-1.1 is expected to minimize or reduce bioaccumulation of methylmercury by requiring steps be taken to reduce, monitor, and manage mercury in the reservoir. Most of the actions identified under Mitigation Measure WQ-1.1 are recommended actions by the State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards for new reservoirs (State Water Resources Control Board 2017a). However, the degree of effectiveness of any of the identified actions to reduce mercury methylation and bioaccumulation in Sites Reservoir specifically is not known at this time. Therefore, this impact would be significant and unavoidable.
19-12	Table 6-5 also shows that total mercury concentrations have been measured as high as 14.4 ng/L in the Sacramento River at Red Bluff but only 0.52 ng/L in Lake Oroville. Yet these relatively low concentrations of total mercury from the water in Lake Oroville have been sufficient to cause fish from this reservoir to exceed the numeric criterion and objectives for all trophic levels of fish, including both sport and prey fish, for the protection of human health and wildlife as contained in the Sacramento–San Joaquin River Delta Estuary TMDL for Methylmercury and Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions. Fish tissue concentrations as high as 0.7 mg/kg have been found in fish from Lake Oroville (DWR 2007). Since mercury concentrations of up to only 0.52 ng/L in Lake Oroville have been sufficient to cause numeric criterion and objectives to be exceeded in this reservoir, concentrations of mercury as high as 14.4 ng/L in water diverted to the proposed reservoir from the Sacramento River at Red Bluff will undoubtedly cause highly significant impacts and substantial adverse effects in the proposed reservoir and in downstream releases.	Expected mercury concentrations were determined for the Project based on the qualitative assessment described in Chapter 6, Surface Water Quality, Section 6.3, Methods of Analysis, and in Appendix 6F, Mercury and Methylmercury, which presents mercury data and other information from reservoirs in California to compare with the Sites Reservoir in terms of location, size, expected reservoir surface elevation fluctuations, mercury sources, and fish species present. Expected mercury/methylmercury concentrations for Sites Reservoir cannot be compared to the No Project Alternative because the Sites Reservoir would not exist under the No Project Alternative. Accordingly, no impact determination is made for this water quality constituent in Sites Reservoir water or fish tissue. Regardless, the analysis acknowledges that, both in the short term and long term, there would be more methylmercury generated within the reservoir than would be degraded, particularly in the short term. The analysis acknowledges that the expected average and reasonable worst-case fish tissue concentrations of methylmercury would exceed the 0.2 milligram per kilogram (mg/kg) (wet weight [ww]) California sport fish

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	[DWR 2007. Mercury Contamination in Fish from Northern California Lakes and Reservoirs. July 2007]	objective. Similarly, the impact analysis discusses the potential for releases from Sites Reservoir to result in bioaccumulation of methylmercury in fish at other locations (i.e., Funks Creek and Stone Corral Creek, Colusa Basin Drain, Yolo Bypass, and the Delta). The implementation of Mitigation Measure WQ-1.1 is expected to minimize or reduce bioaccumulation of methylmercury by requiring steps be taken to reduce, monitor, and manage mercury in the reservoir. Most of the actions identified under Mitigation Measure WQ-1.1 are recommended actions by the State Water Board and Regional Water Quality Control Boards for new reservoirs (State Water Resources Control Board 2017a). However, the degree of effectiveness of any of the identified actions to reduce mercury methylation and bioaccumulation in Sites Reservoir specifically is not known at this time. Therefore, this impact on water quality would be significant and unavoidable. The California Office of Environmental Health Hazards Assessment methylmercury fish consumption advisories would continue to be implemented in the study area during operation of the reservoir, and these advisories would serve to protect people against the overconsumption of fish with increased body burdens of mercury for those following these recommendations.
19-13	The DEIR on page 6-17 states that "in newly constructed reservoirs, the initial inundation of soils and vegetation can cause higher net methylmercury production in early years after filling, when organic carbon is relatively abundant, relative to long-term average production. This initial spike in mercury methylation can increase the concentrations of water column methylmercury to double or triple the long-term average concentrations for up to 10 years." It also states that "the literature suggests	As quoted by the commenter, the methylmercury analysis in Chapter 6, Surface Water Quality, states that "the literature suggests that fish tissue concentrations of methylmercury may peak 3–8 years after filling, with concentrations slowly declining to a lower steady-state after 10–35 years." This text makes no statement about or allusion to the potential concentrations of methylmercury in Sites Reservoir fish relative to the criterion for the protection of human health and

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	that fish tissue concentrations of methylmercury may peak 3–8 years after filling, with concentrations slowly declining to a lower steady-state after 10–35 years." The data from Lake Oroville (which is over 50 years old) shows that even if the expected initially high mercury concentrations in the reservoir decline over time, the concentrations of mercury present in water that would be diverted to the reservoir from the Sacramento River at Red Bluff and especially at Hamilton City are sufficiently high to cause fish tissue methylmercury concentrations to exceed criterion for the protection of human health and wildlife, not just for 10 to 35 years, but for the life of the reservoir project.	wildlife, either in the short term or long term. As stated in Chapter 6 in the Impact WQ-2 discussion, assuming similar fish species and comparable food web structures at Sites Reservoir relative to other nearby reservoirs, a reasonable expected average fish tissue concentration (normalized to 350 millimeters largemouth bass, ww) is approximately 0.47 mg/kg, and a reasonable worst-case fish tissue concentration is the 99th percentile value among these reservoirs (0.85 mg/kg, ww)—values that exceed the 0.2 mg/kg California sport fish objective. As indicated in Mitigation Measure WQ-1.1 and in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, as part of the Reservoir Management Plan (RMP), multiple measures will be implemented to reduce mercury methylation in Sites Reservoir and, thus, bioaccumulation of methylmercury in reservoir fish. Most of the measures identified under Mitigation Measure WQ-1.1 are recommended by the State Water Board and Regional Water Quality Control Boards for new reservoirs (State Water Resources Control Board 2017a). However, the degree of effectiveness of any of the identified measures to reduce mercury methylation and bioaccumulation in Sites Reservoir specifically is not known at this time. Therefore, this impact on water quality would be significant and unavoidable. As identified in Chapter 27, Public Health and Environmental Hazards, under Impact HAZ-6, the California Office of Environmental Health Hazards Assessment methylmercury fish consumption advisories would continue to be implemented in the study area, and these advisories would serve to protect people against the

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		overconsumption of fish with increased body burdens of mercury for those following these recommendations.
19-14	The DEIR states on page 6-22 states that "the effects of mixtures of metals on organisms in the Sacramento River are poorly understood." Nonetheless, the SWRCB states that when multiple constituents are found together, the combined toxicity of the multiple constituents should be evaluated. "In the absence of scientifically valid data to the contrary, Section 2550.4(g) of Chapter 15. Article 5 regulations referenced in the SWRCB's Site Investigation and Cleanup Policy requires that theoretical risks from chemicals found together in a water body shall be considered additive for all chemicals having similar toxicological effects or having carcinogenic effects. This requirement is also found in the California hazardous waste management regulations (Title 22 of CCR, Section 66264.94(f) and in the USEPA Risk Assessment Guidance for Superfund (RAGS)." This DEIR did not consider the combined effects of metals and is therefore deficient.	Please see Master Response 4, Water Quality, for a discussion of additive effects. The applicability of the policies identified in the comment is limited because Sites Reservoir would not be a cleanup site, hazardous waste site, or Superfund site (see Chapter 27, Public Health and Environmental Hazards, for more information regarding hazardous material sites).
19-15	The DEIR states on page 6-22 that metal concentration measurements are shown in Appendix 6E but that "this is not an exhaustive presentation of all measurements, but instead is provided to show patterns of metal concentrations at the Sites Reservoir intake locations (near Red Bluff and Hamilton City), in the CBD, and upstream of one of the potential release locations (upstream of the CBD)." The DEIR should not selectively filter the available data in order to support its contentions, but should show all data even though the data may prove contentions incorrect.	There was no selective filtering of existing publicly available data. Data were identified and used based on the best publicly available data sources for the most relevant locations. Data from earlier than 2000 were not utilized because metal concentrations in the Sacramento River have changed with time, and the data period from 2000 to 2020 (a period of 21 years) provide a sufficient representation of what would be expected under the No Project Alternative. In Chapter 6, Surface Water Quality, text has been modified to make it clearer that the best data sources were used for the most relevant locations and explain why old (pre-2000) data were not used; the text modifications do not change the impact determinations or conclusions in the chapter.
19-16	The DEIR states on page 6-23 that "for most metals there is little difference in concentration between upstream and downstream locations on the Sacramento River." This is not true at all. Data in WDL show substantial	Text has been clarified in Chapter 6, Surface Water Quality. The similarity between upstream and downstream locations described in the text is for the locations with data presented in Appendix 6E, Water

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	differences between upstream and downstream locations. For example, comparing the data for the Sacramento River at Keswick to that at Red Bluff show total aluminum as 492 ug/L vs. 3,630 ug/L, total copper as 4 ug/L vs. 14.7 ug/L, total iron as 294 ug/L vs. 4,160 ug/L, and total lead as 1.56 ug/L vs. 3.14 ug/L, all substantial differences. The differences in concentrations for these and other constituents is attributed to tributary stream inflows, with the most significant in terms of both flow and contribution of these constituents being Cottonwood Creek.	Quality Data, between Red Bluff and the Colusa Basin Drain (CBD) discharge site. The text revision does not change the impact determinations or conclusions in the chapter.
19-17	The DEIR states on page 6-31 that "contaminated sediments could move into Sites Reservoir as suspended sediments during high flows, but the main supplies of contaminated sediments and their potential effects would remain in the Sacramento River channel because the amount of sediment contained in the diversions to Sites Reservoir would be small compared to what is contained in the Sacramento River channel." The concentration of contaminated or suspended sediments would be exactly the same in the water diverted to Sites Reservoir and that in the Sacramento River at the point and time of diversion – there is no difference in sediment load. The only difference is that the Sacramento River will carry a substantially greater load of sediment due to the substantially greater flow in the Sacramento River than the amount of water diverted to the proposed reservoir.	The comment is correct that there would be no difference in sediment concentration between the Sacramento River at the point of diversion and the canals immediately downstream of the points of diversion. The purpose of the text referenced by the comment is to make it clear that contaminants closely associated with sediment are not expected to be any more concentrated in Sites Reservoir than in the Sacramento River. Text in Chapter 6, Surface Water Quality, has been clarified in the Final EIR/EIS; the clarifications do not change the conclusions or impact determinations contained in the chapter.
19-18	The DEIR states on page 6-31 that "wind, rain, and wave action commonly erode bare soil adjacent to reservoirs and could cause erosion along the edge of Sites Reservoir when it is not full. These phenomena may temporarily increase turbidity along the reservoir's edge prior to settling of the sediment, but this increase would not markedly affect beneficial uses of the reservoir (i.e., recreation, water supply, fisheries and wildlife)." Erosion of soils in the exposed inundation zone will re-suspend soils laden with metals and other contaminants, which may then contribute to impacts in the reservoir or downstream releases.	Please see Master Response 4, Water Quality, which explains that resuspension of sediment along the shoreline would be unlikely to substantially change concentrations in Sites Reservoir because the amount of sediment involved would represent a small fraction compared to the suspended sediment concentrations diverted from the Sacramento River during high flows.

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19-19	Page 6-33 states that "when Sites Reservoir would release water to the Sacramento River, it would constitute 6%–7% of the Sacramento River flow on average and 12%–13% when discharges are relatively high compared to river flow," and therefore "water quality in Sites Reservoir would have limited effect on the water quality in the Sacramento River." However, page 6-32 states that evapoconcentration could increase constituent concentrations in Sites Reservoir by up to 48%. Therefore, water released from Sites Reservoir to the Sacramento River could contribute higher concentrations of constituents such as metals. The DEIR does not evaluate the effects from these higher concentrations on water quality and beneficial uses of the Sacramento River. Also, during "operational exchanges" when additional water is released from Sites Reservoir and water is held back in Shasta or Oroville reservoirs, the percent of water from Sites Reservoir constituting the total flow in the Sacramento River will be increased, potentially adversely affecting water quality in the river and impacting downstream water users.	The calculations of evapoconcentration are included in the quantitative analysis of metal concentrations in Sites Reservoir and the Sacramento River, as described in Chapter 6, Surface Water Quality, Section 6.3.2.10, Pesticides and Metals other than Mercury, and are incorporated in the metals analysis for Impact WQ-2. Operational exchanges are included in the CALSIM modeling results that are used in the quantitative assessment of dilution of the discharges from Sites Reservoir by the Sacramento River. As such, effects of evapoconcentration, operational exchanges, higher concentrations of metals in the Sites Reservoir release, and effects on Sacramento River water quality and beneficial uses are considered in the evaluation of Impact WQ-2. Please also see Master Response 4, Water Quality, for a discussion of metals and metalloids other than mercury.
19-20	Page 6-37 discusses Harmful Algal Blooms in relation to "whether cyanobacteria and cyanotoxins may be released from the reservoir with dead pool withdrawals" and "the elevation of the low-level intake from which dead pool withdrawals would be released." "Dead pool" usually refers to water in a reservoir that cannot be drained by gravity through a dam's outlet works. How is the project planning on withdrawing water from the dead pool?	The text in Chapter 6, Surface Water Quality, has been revised in the Final EIR/EIS to clarify that reference to dead pool withdrawals is referring to operational dead pool. As indicated in Chapter 2, Project Description and Alternatives, Sites Reservoir is currently estimated to have a dead pool of approximately 17.7 thousand acre-feet (TAF), below which water cannot physically be removed from the reservoir using the I/O tower. However, the Authority is currently planning to operate to a dead pool of up to 60 TAF under normal conditions. The text revisions in Chapter 6 do not result in modifications to impact determinations or conclusions in the chapter.
19-21	Page 6-42 states that the "metals analysis relies on best available data provided by DWR's WDL" and that "these data were collected intermittently over multiple years, with measurements representing a wide range of flow conditions." This is not true. The statement of "best available data" is an	The information used to conduct the evaluation in Chapter 6 is sufficient to provide decision makers with an understanding of the relative change in metals concentrations between the No Project Alternative and the Project. Although water quality measurements did

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	attempt to portray the WDL data as robust, which it is not. While the data were collected "intermittently over multiple years," the data are better described as "spotty." Sample collection for this sparse data did not target a "wide range of flow conditions," but rather were based on a fixed schedule regardless of flow conditions. The metals data from DWR's Water Data Library (WDL) "provide a general understanding of how metal and pesticide concentrations may vary with flow and location, allow the identification of trends, and support the impact analysis and conclusion." Water quality data in the WDL for diversion locations of the project are extremely limited. From the Sacramento River below the Red Bluff Diversion Dam, only 26 samples were collected by DWR between the years of 2000 and 2020 (Table 1) [Exhibit 1] during the project's primary months of diversion to storage (January through March, p. 6-32). In eight of the 20 years of data collection from this monitoring station, only one sample was collected during the primary months of diversion to storage; only two years saw four samples collected (both were drought years); in the remaining years only two to three samples were collected during the months of January through March. This pattern of data collection is even more sparse for the Sacramento River at Hamilton City (Table 2)[Exhibit 2]. Only 20 samples were collected from the Hamilton City monitoring site during the project's primary months of diversion to storage. Only one sample was collected from this site in 10 of the 20 years of data collection; three samples were collected in two of the monitoring years, and four samples were collected in one year (which was a drought year). This scant yearly data collection does not "provide a general understanding of how metal and pesticide concentrations may vary with flow and location, allow the identification of trends, and support the impact analysis and conclusion." Collection of these 26 samples was not timed to address variations in concentrations due to variations of flow, but were grab samples collected on a more or less set schedule without the intent to provide sufficient data for impact analysis for any type of storage project.	not target high flows, multiple measurements were taken during higher flows. Master Response 4, Water Quality, discusses available data and how the available data were used to develop exponential equations to estimate metal concentrations as functions of tributary input and flow, allowing estimation of concentrations under more extreme conditions than what was present during measurements. Please see Master Response 4 for a review of the number of data points and the methodology described and used in Chapter 6, Surface Water Quality, for pooling data to maximize the number of data points at higher flows. Master Response 4 also includes a review of the equations to estimate metal concentrations at flows or percentages of tributary inflows higher than what occurred at the time of the measurements. Also, please see Appendix 6E, Water Quality Data, for a tabulation of the number of data points from each measurement site and graphical representation of the relationship between measured metal concentrations and flow in the Sacramento River at Keswick. As described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, the Authority will be conducting water quality measurements for a variety of constituents.

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	Concentrations of many of the metals analyzed from these samples were found to be higher when flows were higher during sample collection. However, variation in concentrations due to flow was not considered during sample collection, and even higher concentrations of metals may be found with flows higher than those during the limited sample collection.	
19-22	The project proposes to collect additional samples for metals at a frequency sufficient to better understand the relationship with variations in flow, but this is only after the project has been constructed. These post-project data would "refine the understanding of metals as more data would likely improve the accuracy of equations used in this analysis for estimating metal concentrations," which is commendable but too late to better understand the adverse effects prior to construction of the project. The project proponents have been pursuing this project for over 20 years. They were also made aware of water quality issues related to this project from comments on the 2017 DEIR, providing ample time for additional data collection to further elucidate the issues prior to preparation of the current DEIR, but no data were collected by the project proponents. Failing this, now they propose to collect this needed data but only after the project is completed to determine the severity of the problems. This is backwards. CEQA requires impact analysis prior to approval and construction of a project, not afterwards. This project should not be constructed and then data collected to see if it will work or to determine the adverse impacts, but rather data should be collected and evaluated prior to approval of this project to determine adverse impacts and potential mitigation	Please refer to responses to comments 19-15 and 19-21 regarding the use of publicly available water quality data in the impact analysis.
19-23	Based on the limited available data, the project focuses on only four metals (aluminum, copper, iron, and lead) considered to be of greatest concern due to seasonal changes in concentration and concentrations above standards (p. 6-42). The only "standards" considered are a "California MCL," "California Secondary MCL," and Freshwater Chronic Standard for Aquatic Life Protection. There are a large number of other numeric water quality	Please refer to Master Response 4, Water Quality, which elaborates on the following information regarding regulatory standards appropriate for use in the impact evaluation of metals and metalloids other than mercury. As described in Master Response 4, California MCLs and standards for aquatic life protection are the primary regulatory standards recommended for evaluation of metal concentrations for

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	thresholds applicable to this project, including California and Federal Drinking Water Standards (MCLs), California Public Health Goals (PHGs), California State Notification and Response Levels for Drinking Water, Suggested No-Adverse-Response Levels (SNARLs), Cancer Risk Estimates, Health-based criteria from USEPA Integrated Risk Information System (IRIS), Proposition 65 Safe Harbor Levels, California Toxics Rule Criteria to Protect Human Health and Aquatic Life, USEPA Recommended Criteria to Protect Human Health and Aquatic Life, Agricultural Use Protective Limits, and Taste and Odor Based Criteria. These assessment thresholds have been summarized by the SWRCB and are presented below in Tables 3 and 4 [Exhibits 3 and 4]. These are the thresholds to which the proposed project should be compared, but apparently not utilized in the DEIR analyses.	municipal water supply and protection of aquatic life and consumption of aquatic life. The metals evaluation focused on the more conservative standards, which was generally the standard for aquatic life protection. Master Response 4 lists multiple reasons alternative values were not included in the impact analysis.
19-24	In addition to the four metals considered in the DEIR, arsenic, cadmium, manganese, nickel, and zinc concentrations in water from the Sacramento River below the Red Bluff Diversion Dam as well as at Hamilton City exceed various criteria (Tables 3 and 4) [Exhibits 3 and 4]. The tables also show potential metal concentrations in Sites Reservoir due to evapoconcentration, as discussed on page 6-32 of the DEIR.	Please see Master Response 4, Water Quality, for a discussion of water quality standards and metals selected for detailed evaluation and a description of the methodology for the metals analysis, which includes estimates of variable inflow concentrations and the variable effect of evapoconcentration. The inflow concentration would not continually equal the maximum measured value, and effects of evapoconcentration would not always be at the maximum estimated value from the entire 1922-2003 time series.
19-25	Cottonwood Creek is the main tributary contributor to winter flows in the Sacramento River at Red Bluff and is primarily responsible for elevated metals concentrations in the river. As an example of the influence of Cottonwood Creek on metals concentrations in the Sacramento River at Red Bluff, on March 1, 2006 when the total aluminum concentration in Cottonwood Creek was measured as 3,739 ug/L, the concentration in the Sacramento River was 2,240 ug/L (Table 5)[Exhibit 5]. But, similar to previous monitoring in the Sacramento River, monitoring of Cottonwood creek did not target higher flows and even higher concentrations of metals are likely to be found with the higher flows. Nor did monitoring in Cottonwood Creek	Please see Master Response 4, Water Quality, for an in-depth discussion of how the available data were used to estimate metal concentrations in the diversions for Sites Reservoir storage based on flow and the percentage of tributary inputs, including Cottonwood Creek. The evaluation in Chapter 6 of the RDEIR/SDEIS used best available measured metals data from multiple locations to develop equations of the inflow metals concentrations to Sites Reservoir as a function of the Sacramento River flow and the percent of flow from tributaries, including Cottonwood Creek. The equations for estimating inflow concentrations are conservative because they were adjusted

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	always coincide with sample collection in the Sacramento River. For example, on May 5, 2005, a total aluminum concentration of 14,345 ug/L was analyzed from Cottonwood Creek, but no corresponding sample was collected from the Sacramento River. Estimating the total aluminum concentration using the concentration reported from Cottonwood Creek multiplied by the ratio of concentrations in the Sacramento River and Cottonwood Creek ((Cottonwood Cr) x (Sacramento River/Cottonwood Creek)) from March 1, 2006 yields an estimated concentration in the Sacramento River of 8,594 ug/L for May 5, 2005. This total aluminum concentration is much higher than the few measured analyses from the Sacramento River, and serves to reiterate the likelihood that even higher concentrations of metals would undoubtedly be found with more frequent monitoring and targeting of higher flows, which are the flows that would be diverted to the proposed reservoir. This same relationship applies to other metals and demonstrates that the analysis in the DEIR was not "conservative" but used the little available data to underestimate metal concentrations likely to occur. Since the project proponents have failed to collect any water quality data in the 20 years they have been promoting this project, using data projections such as that discussed above is the most appropriate measure to arrive at a reasonable evaluation.	upward to be more responsive to increases in river and percent tributary flow, they allow estimated concentrations to exceed the maximum measured values, and they assume no settling of suspended sediment in the conveyance system on the way to Sites Reservoir. Measured data were not used directly in the quantitative evaluation in Impact WQ-2. Instead, the measured data were used to develop equations to estimate concentrations over a range of flows and percentages of tributary contributions to flow.
19-26	The concentration of metals in Sites Reservoir was then calculated using the projected maximum Sacramento River concentration and applying the 48 percent evapoconcentration factor described in the DEIR. Using the "conservative" approach of the DEIR, the projected metals concentrations in the Sacramento River at Hamilton City during the May through September release period was next calculated using the maximum metal concentrations in the Sacramento River at Hamilton City (from WDL). The projected metals concentrations in the river at Hamilton City were calculated using 13 percent of the Sites Reservoir concentration after evapoconentration (Table 5)[Exhibit 5] and 87 percent of the Sacramento River at Hamilton City	Please see Master Response 4, Water Quality, for a description of the process for selecting metals and water quality standards for evaluation and for a description of the methods for estimating metal concentrations, which includes a number of factors (e.g., estimates concentrations for a full time series corresponding to the 1922–2003 CALSIM simulation period and includes the full time series of variable estimated inflow concentrations). The comment utilizes an alternative approach to evaluating the effect of the Project on metal concentrations. The approach described in

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	concentration (WDL). The Sacramento River at Hamilton City site was used with the assumption that water quality in the river at Hamilton City would be similar to downstream water quality near Dunnigan, the river release site for Alternative 2. The projected metals concentrations in the Sacramento River at Hamilton City, even with dilution of Sites Reservoir releases with Sacramento River water, exceed various water quality objectives or promulgated criteria (Table 6)[Exhibit 6]. Similar results can be expected for discharges from Sites Reservoir to the Colusa Basin Drain. Table 6 shows that concentrations of metals in the CBD, when mixed with 13 percent of water from Sites Reservoir and assuming average metal concentrations in the CBD (p. 6E-10), exceed water quality objectives or promulgated criteria for aluminum, arsenic, copper, iron, lead, manganese, and nickel. Introduction of water from Sites Reservoir to the CBD results in even higher concentrations in the CBD of most metals, including aluminum, cadmium, chromium, copper, iron, lead, manganese, nickel, selenium, and zinc.	this comment assumes a projected maximum total metal concentration would be entering Sites Reservoir at all times, that there would be no reduction in concentration associated with settling of suspended sediment, that the maximum estimated evapoconcentration for the 1922–2003 simulation period would apply at all times, and that Sites Reservoir releases would always constitute the 90th percentile of the estimated percentages in the Sacramento River at all times. This combination of worst-case conditions is very unlikely to co-occur because each one of the worst-case conditions is unlikely to occur individually, let alone all of them at the same time. For example, to not have any settling of metals in the reservoir, the reservoir would need to be undergoing active filling, and this would not co-occur with maximum evapoconcentration, which would happen when the reservoir is not receiving inflow. The calculations associated with this comment assume concentrations in the Sacramento River receiving water would be equal to the maximum values measured at Hamilton City from May through September. Many of these maximum measured metal concentrations already exceed water quality standards. Maximum concentrations are associated with high flow conditions in the Sacramento River, when Sites Reservoir discharges would not be needed. Most of the measurements of maximum concentration occurred on May 19, 2005, when flow in the Sacramento River at Keswick was 25,400 cubic feet per second (cfs). It is unlikely that Sites Reservoir would discharge to the Sacramento River when flows are this high because the Project is meant to typically discharge when Storage Partners would require water.
19-27	The "evaluation of concentration assuming no settling of suspended sediment" starting on page 6-44 used data from the "November–May	The primary months of diversions would occur when flow is high in the Sacramento River, but diversions could occur any time from

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	period of higher flows and concentrations to better focus on the range of flows that may occur when Sacramento River water would be diverted to Sites Reservoir." This is inconsistent with other statements in the DEIR that state that the project's primary months of diversion to storage would be January through March (page 6-32).	September 1–June 14. Please see Master Response 4, Water Quality, for more detail regarding why data for November through May were selected for evaluation of metal concentrations.
19-28	The DEIR states the settling of sediment entering the reservoir would substantially reduce the concentration of metals (page 6-45). Though settling of sediment (and organic matter) entering the reservoir would reduce total metal concentrations, the DEIR does not take into account resuspension of settled sediments by winds or inundation zone erosion when the reservoir level is reduced. In addition, dissolution of metals from the bottom sediments under the anoxic conditions expected to occur in the reservoir can substantially increase metals concentrations in the hypolimnion, which will become distributed throughout the water column following fall turnover. "Settling in the reservoir of 95% or more of the sediment that enters the reservoir" would create a significant source for metals in the reservoir from resuspension or dissolution during certain times of the year.	Please see Master Response 4, Water Quality, regarding metal concentration effects associated with shoreline erosion. Dissolution of metals from the sediments under anoxic conditions was considered in the analysis and is a primary reason Mitigation Measure WQ-2.1 was developed. Master Response 4 also addresses metal concentration effects associated with anoxic conditions and reaeration, explaining the low likelihood that metals released under anoxic conditions would be carried downstream from Sites Reservoir at times when metal concentrations would otherwise be low. If high metal concentrations associated with anoxic conditions cannot be avoided in the reservoir discharge, the metal concentrations would be expected to decline as the water moves downstream due to reaeration.
19-29	A "Reservoir Management Plan" is identified on page 6-47. The RMP Page 2D-37) states that "past studies of metal concentrations in the Sacramento River have not focused on high flows that will be the source water for Sites Reservoir. Metal concentrations at the diversion(s) will be measured within 24 hours of the start of diversions at RBPP and every 2 weeks during continuous diversions." "After 2 years of measuring metal concentrations in the diversions, the frequency of measurements will decrease to monthly." Rather than focusing on a strict protocol or set schedule of monitoring at 2-week intervals, monitoring should target a range of flow conditions to better understand the relationship between flow and metals concentrations. Event based monitoring may require data collection biweekly, weekly, or even on a daily basis as flow conditions vary. Additional consideration for	The monitoring of Sacramento River metal concentrations described in Appendix 2D will provide measurements that focus on water quality at the most relevant time for water quality in Sites Reservoir, namely when water would be diverted to storage. This monitoring schedule will naturally result in data collection over a range of conditions that would occur at the time of diversions to storage. As described in Appendix 2D, after 2 years of measuring metal concentrations in the diversions, the frequency of measurements will decrease to monthly but not be terminated. The final RMP will be prepared after meetings and consultation with regulatory agencies and other stakeholders and the RMP may

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	monitoring would include analyzing differences in water quality based on whether flows are primarily composed of water from Shasta Lake or tributary inflows dominate the flow in the Sacramento River at the diversion points, and dry, normal, and wet year effects on water quality. Two years of data collection likely will not be sufficient to provide the required information.	continue to be revised throughout the operation of the reservoir, potentially resulting in modification of the protocol for monitoring metal concentrations.
19-30	The description of the SWRCB's Antidegradation Policy on page 6-47 is misleading in stating that the policy allows for some degradation in consideration for increased beneficial uses, the supposed beneficial use being increased water supply from the proposed reservoir. The Antidegradation Policy prohibits discharges that would degrade water quality even though the degradation would not exceed water quality objectives because no capacity would exist for degradation that will be caused by the next downstream or downgradient uses – the ability to beneficially use the water would have been impaired, even though water quality objectives would not yet have been exceeded (SWRCB 2011). The contribution of additional metal loads from releases from the proposed Sites Reservoir during the summer would cause concentrations of metals in the Sacramento River (through direct releases or releases through the CBD or GCID) to exceed criteria and standards or at least be subject to the Antidegradation Policy due to an incremental increase in metals in the Sacramento River from the proposed project. Thus, the proposed project may face prohibition of releases if stored water does not meet water quality criteria or standards or if releases can cause criteria or standards to be exceeded by downstream inputs (i.e., Antidegradation Policy).	According to the Antidegradation Implementation Policy in the Central Valley Basin Plan (Central Valley Regional Water Quality Control Board 2018:4-23), "The Regional Water Board will apply 68-16 [the Antidegradation Policy] in considering whether to allow a certain degree of degradation to occur or remain. In conducting this type of analysis, the Regional Water Board will evaluate the nature of any proposed discharge, existing discharge, or material change therein, that could affect the quality of waters within the region. Any discharge of waste to high-quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State." Please see response to comment 19-6 regarding the operation of the Project and the application of the antidegradation policy. In addition, please see the Chapter 6, Surface Water Quality, discussion for Impact WQ-2 and Master Response 4, Water Quality, for a discussion of the effects of the Project on water quality in the Sacramento River. The analysis concludes that, with the exception of methylmercury, the Project would not cause substantial increases in metal concentrations in the Sacramento River. As a result, with the possible exception of methylmercury, the Project would not restrict downstream beneficial uses, including those downstream beneficial uses that may degrade water quality.

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		The Authority will work with the State Water Board and Regional Water Board (as applicable) as part of the certification process under Section 401 with regard to application of the antidegradation policy.
19-31	On page 6-54, page 6-57, and elsewhere, statements concerning expected mercury levels in fish, nutrients, and dissolved organic carbon in the reservoir explain that "this would be an effect on the Project itself occurring within the Sites Reservoir, rather than an effect from the Project on the surrounding environment." This seems to imply that the project would not be responsible for these issues in the reservoir since it is the location where the reservoir is placed that is responsible. It is the construction of the reservoir that creates the problem. The creation of the reservoir creates a problem for the surrounding environment (i.e., birds that will prey on fish contaminated with high levels of mercury in the reservoir).	CEQA requires that effects for a proposed project be analyzed relative to an environmental baseline that represents the physical environmental conditions that exist at the time the CEQA process began. The CEQA baseline for assessing significance of impacts of any proposed project is normally the environmental setting or existing conditions at the time a Notice of Preparation is issued (CEQA Guidelines, § 15125, subd. (a)). NEPA does not have a comparable baseline requirement, but, similar to CEQA, which requires analysis of the No Project Alternative, NEPA requires analysis of the No Action Alternative. The No Project Alternative under CEQA and the No Action Alternative under NEPA are used to compare conditions without the Project to conditions with the Project. In the EIR/EIS analysis, the CEQA No Project Alternative and NEPA No Action Alternative are the same. In the analysis in Chapter 6, Surface Water Quality, the No Project Alternative represents the continuation of the existing conditions in 2020 for the study area in general, including the proposed reservoir site. Because no reservoir exists under the No Project Alternative, a comparison between the existing water quality conditions at the proposed Sites Reservoir site and reservoir water quality conditions once Sites Reservoir is filled and operational cannot be made at this time. However, as noted in Chapter 6, mercury accumulated in the soil from atmospheric deposition is a source for total mercury in new reservoirs that is released into the water column after a reservoir is inundated, in addition to being a source for methylmercury generation. New reservoirs increase mercury methylation and bioaccumulation, and initial mercury and

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		methylmercury concentrations after filling are expected to be higher than average concentrations in the long term. The magnitude and duration of mercury methylation after the initial filling of Sites Reservoir would partially depend on the amount of organic carbon in the underlying soils and how much organic material is inundated when the reservoir fills. Text indicating that consumption of fish that have bioaccumulated methylmercury could cause illness or mortality of bald eagle was added to Chapter 10, Wildlife Resources, Impact WILD-1k, of the Final EIR/EIS. Fish tissue methylmercury concentrations are expected to be highest in the first 10 years after reservoir filling and then decline to a steady-state concentration over time (Section 6.2.2.4, Mercury and Methylmercury, of Chapter 6). The text addition does not change the impact determination, which is less than significant after mitigation for bald eagle, or conclusions in that chapter because implementation of Mitigation Measure WQ-1.1 is expected to reduce the impact from reservoir operation to less than significant, as steps would be taken to reduce, monitor, and manage mercury in the reservoir and fish bioaccumulation. Mitigation Measure WQ-1.1 includes delaying stocking of fish in the first 10 years when the potential for methylmercury levels in the reservoir are expected to be the highest; monitoring methylmercury in fish tissues; and management of reservoir fisheries to reduce in-reservoir fish through somatic growth dilution by reducing fish populations and selective fish stocking (e.g., stock with low-methylmercury prey fish for stocked predator fish). In addition, potential effects on public health and aquatic resources due to potential reservoir water quality are addressed in Chapter 27, Public Health and Environmental Hazards, and Chapter 11, Aquatic Biological Resources.

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19-32	The discussion on page 6-57 also explains that "any increases in reservoir nutrient concentrations may benefit fish." However, management of the mercury problem in the reservoir includes not introducing fish into the reservoir for at least 10 years (Mitigation Measure WQ-1.1). So, there are not any fish that would benefit from the increased nutrient concentrations in the reservoir. Even if there were fish in the reservoir, increased nutrient concentrations would lead to increased HABs (an impact) and anoxia in the hypolimnion as the organic materials (HABs) produced in the epilimnion sink and decompose in the hypolimnion, eliminating the hypolimnion as habitat for fish (another impact). As well, the anoxic hypolimnion will result in the dissolution of metals from the sediments back into the water column, yet another adverse impact from the increases in reservoir nutrient concentrations.	The Chapter 6, Surface Water Quality, text quoted by the commenter has been deleted from where it appears in the CEQA determination for Impact WQ-1 in the Final EIR/EIS because the nutrient discussion under this impact is within the context of the initial filling of Sites Reservoir. This text, however, still appears in Impact WQ-2, which covers the operation of the reservoir. It is correct that the reservoir would not be stocked with fish for at least 10 years following its initial filling (per Mitigation Measure WQ-1.1). Once stocked, fish will benefit from reservoir nutrients. The referenced potential effect of nutrients on the development of HABs and of the decomposition of HABs on DO in Sites Reservoir is discussed in Chapter 6. Please refer to Master Response 4, Water Quality, and response to comment 19-28 for a discussion regarding dissolution of metals under anoxic conditions and for a discussion of the use of the I/O tower, which would control releases of water quality constituents by selective use of the multiple tiers in the tower.
19-33	This section on page 6-54 of the report also acknowledges that long-term methylmercury concentrations in fish in the proposed reservoir can reasonably be expected to be about 0.85 mg/kg ww, which greatly exceeds the 0.2 mg/kg ww of the California sport fish objective.	The comment is identifying information contained in the impact analysis regarding potential long-term methylmercury concentrations in Sites Reservoir fish and that this concentration would exceed the California sport fish objective.
19-34	Because Harmful Algal Blooms (HABs) are expected to be relatively high in surface water of the reservoir (page 6-55), "releases could be made from lower in the water column (e.g., through the low-level intake) to reduce the potential for higher concentrations of cyanobacteria and cyanotoxins to be released downstream." This is proposed as a strategy on page 6-57 to avoid effects from initial filling of Sites Reservoir on downstream conditions. However, a statement	Please refer to Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower, which would control releases of water quality constituents, including cyanotoxins and methylmercury, by selective use of the multiple tiers in the tower. Because presence of HABs/cyanotoxins would be the only reason for avoiding release of surface water, potential conflicts with regard to I/O tower tier selection to avoid releasing multiple water quality constituents of

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	on page 6-16 indicates that water would be released from the surface rather than lower in the water column to avoid releasing water with high concentrations of mercury: "Due to this stratification, reservoir releases from the warmer, upper layer of water (i.e., the epilimnion) during the summer are less likely to have elevated methylmercury concentrations compared to releases from the deeper hypolimnion." Water quality is affected whether water is released from the surface (HABs) or bottom (mercury). Neither release scenario, then, is effective at mitigating impacts; releases from the bottom to avoid HABs results in high levels of mercury being released, while releases from the surface to avoid mercury results in high levels of HABs being released. One mitigation strategy conflicts with the other. Withdrawing water between the epilimnion and hypolimnion (i.e., the metalimnion) may avoid releasing water with high HABs (epilimnion) or mercury (hypolimnion), but this narrow band of water would quickly be depleted, leaving no option but to release water with either high concentrations of HABs or mercury.	concern would not occur unless HABs/cyanotoxins were present at the I/O tower. If HABs/cyanotoxins were present at the I/O tower at the same time as relatively high metal concentrations (including methylmercury) or water too cold for agriculture was deep in the reservoir, then there might be no I/O tower tier available for discharging relatively high-quality water if releases had to be made from the bottom of the reservoir. However, as described in Master Response 4, this scenario would be rare because it would only occur if reservoir storage was very low. Additional measures (e.g., RMP actions described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, and Mitigation Measures WQ-1.1 and WQ-2.1) would help protect against the consequences of such a scenario, although the methylmercury impact would remain potentially significant. Mitigation for potential methylmercury impacts is described under Mitigation Measure WQ-1.1 and is focused on reducing the methylation of mercury in Sites Reservoir, which could reduce potential water quality impacts due to mercury. Mitigation Measure WQ-2.1 would implement one or more of a suite of actions that would reduce metal concentrations released to Stone Corral Creek by altering the elevation of withdrawal or flows to Stone Corral Creek if metal concentrations exceeded water quality standards for the protection of aquatic life at a time when these exceedances would not occur under the No Project Alternative.
19-35	One of the methylmercury management strategies is to not stock Sites Reservoir with fish for the first 10 years following its initial filling (page 6-59). How will the project prevent someone from taking it upon themselves to stock fish of their choosing, as has happened at many other reservoirs (e.g., Northern pike in the Upper Feather River reservoirs). What will the project do to prevent someone from stocking fish and to mitigate this stocking when it does occur?	As indicated in Mitigation Measure WQ-1.1 and in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, as part of the RMP, multiple measures will be implemented to reduce mercury methylation in Sites Reservoir and, thus, bioaccumulation of methylmercury in reservoir fish. Fish tissue monitoring will begin the first year of authorized reservoir stocking, and, through coordination with the State Water Board, the Central Valley Regional Water Quality

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		Control Board, and the California Office of Environmental Health Hazards Assessment, fish consumption warning signs will be posted, as appropriate, based on methylmercury levels in fish tissue. Fish consumption advisories would serve to protect people against the overconsumption of fish with increased body burdens of mercury for those following these recommendations. The Authority and Reclamation acknowledge that unauthorized fish stocking could occur, but Sites Reservoir is located relatively remotely, which likely would constitute a deterrent to this unauthorized practice. An additional action has been added to Mitigation Measure WQ-1.1 as well as to the RMP in Appendix 2D to minimize potential public exposure to methylmercury through consumption of Sites Reservoir fish prior to regulated stocking of the reservoir. A fish sampling program will be implemented upon completion of the initial filling of the reservoir. Initially, a sampling program will be implemented to determine whether game fish are present (either because of unauthorized stocking or fish entrainment at the Sacramento River diversions). Once it has been determined that a population of game fish has established in the reservoir, annual monitoring of Sites Reservoir fish tissue methylmercury concentrations will commence. If the 0.2 mg/kg sport fish objective is exceeded, fish consumption warning signs will be posted. The addition of this action to the Final EIR/EIS does not change conclusions or impact determinations identified in the analysis in Chapter 6, Surface Water Quality.
19-36	Another methylmercury management strategy is to introduce an oxidant, such as nitrate, to the reservoir bottom waters (near the sediment-water interface) to reduce anoxia (page 6-59). "If this method is employed, reservoir releases will be made from a higher tier (i.e., higher elevation) in	Text in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, Section 2D.3.2, Methylmercury, of the Final EIR/EIS has been revised to eliminate consideration of the addition of nitrate as a water chemistry management action. This text revision

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	the I/O tower to avoid discharging bottom waters." Introduction of nitrates will serve as a nutrient source to stimulate increased algal ((HABs) growth following reservoir turnover. Releases from above the hypolimnion will be affected by HABs.	does not change conclusions or impact determinations identified in the analysis in Chapter 6, Surface Water Quality. Please refer to Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower to control releases of water quality constituents.
19-37	From page 6-70: "Thermal stratification in the summer would likely result in a reduction of oxygen toward the bottom of the reservoir in the hypolimnion. However, reservoir fish would likely not be affected by this reduction because they would not be in the hypolimnion." According to this DEIR, some of the fish species that would be introduced into the reservoir (after 10 years) include cold-water species. These fish require the cold water of the hypolimnion for survival. Reduction of oxygen in the hypolimnion will adversely affect these species.	As described in Chapter 2, Project Description and Alternatives, the RMP will provide target fisheries species composition and management activities for Sites Reservoir, including stocking strategies, habitat enhancement measures, and monitoring efforts. Species that may be considered include rainbow trout (Oncorhynchus mykiss), brown trout (Salmo trutta), Kokanee salmon (Oncorhynchus nerka), smallmouth bass (Micropterus dolomieu), largemouth bass (Micropterus salmoides), bluegill (Lepomis macrochirus), green sunfish (Lepomis cyanellus), channel catfish (Ictalurus punctatus), and brown bullhead (Ameiurus nebulosus). Selection of fisheries species in Sites Reservoir will be informed by the water quality conditions observed through the Water Quality Monitoring Program, which includes DO and water temperatures.
19-38	The DEIR on page 6-81states that "concentrations of metals released from Sites Reservoir could be higher than their concentrations in the Sacramento River at the point of discharge, potentially degrading river water quality." "The release of Sites Reservoir water to the CBD under Alternatives 1, 2, and 3 would likely reduce metals concentrations in the CBD because metal concentrations in the CBD are generally higher than metals concentrations in the Sacramento River regardless of time of year." As discussed earlier, release of water to the CBD from Sites reservoir results in elevated concentrations of most metals in the CBD. However, even if release of water from Sites Reservoir to the CBD did not cause metal concentrations in the CBD to be increased, the total volume of poor quality metal laden water	As described in Chapter 6, Surface Water Quality, Section 6.3, Methods of Analysis, the Project would not change the amount of metals entering CBD from existing land use. The effect of the metals load in discharges from Sites Reservoir on the Sacramento River water quality was evaluated independently from existing CBD loads (i.e., existing CBD loads were not part of the analysis). In other words, the existing load in CBD would be the same under both No Project and Project conditions and, therefore, would not contribute to a Project effect.

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	being released to the Sacramento River at the CBD outfall is increased with the introduction of water from Sites Reservoir, thereby causing greater adverse impacts on water quality in the Sacramento River than if just CBD water was released. The additional metals load in CBD due to the addition of water from Sites Reservoir may, when combined with other downstream discharges, result in the need for additional water treatment by downstream users, particularly municipal or industrial users.	Please see Master Response 4, Water Quality, which explains that, due to the timing of releases from Sites Reservoir, most suspended sediment that enters Sites Reservoir would settle on the way to Sites Reservoir or in the reservoir prior to discharge. Once some settling of suspended sediment has occurred in Sites Reservoir, metal concentrations in Sites Reservoir are likely to be similar to or less than concentrations in the CBD. In addition, please see response to comment 19-3 regarding effects on beneficial uses and response to comment 19-26 regarding the assumptions used in the comment. Although CBD generally has lower water quality than the Sacramento River, the volume of water emanating from CBD during the dry-season is relatively low (generally less than 1,000 cfs from May–November as shown in Chapter 5, Surface Water Resources) and the resulting CBD effect on Sacramento River water quality does not preclude beneficial uses of water. The water from Sites Reservoir could represent a slight increase in load but reduction in concentration from CBD. Much of the increase in load would represent load that was diverted from and then returned to the Sacramento River. It is unlikely the incremental effect of Sites releases on concentrations in the Sacramento River would be enough to cause CBD effects to exceed regulatory standards, especially considering the dilutive effect of the Sacramento, Feather, and American Rivers. In addition, as described in Chapter 5, Sites Reservoir releases to the Sacramento River would be capped at 1,000 cfs, and when CBD flows are high, such as occurs during rice field drainage, Sites releases would need to be less than 1,000 cfs due to limited capacity in CBD.
19-39	The DEIR states on page 6-81 that "high concentrations of total metals in the Sacramento River water diverted to storage may be reduced substantially by settling of suspended sediment. This would cause	Please see Master Response 4, Water Quality, and response to comment 19-28 regarding dissolution of metals under anoxic

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	concentrations to drop and approach the dissolved, filtered measurements." The DEIR does not take in account the dissolution of metals from the settled sediments under the anoxic conditions expected in the reservoir. Dissolution of metals from the settled sediments will add to those already present in the dissolved form. In addition, the DEIR states that evapoconcentration could increase metals concentrations in the reservoir by up to 48 percent.	conditions and a description of how evapoconcentration was included in the analysis.
19-40	The DEIR on page 6-82 states that "to demonstrate a range of results for the Sacramento River, these graphs show two types of results for concentrations in the Sacramento River downstream of the Sites discharge: Concentrations assuming median river concentrations mixed with Sites Reservoir concentrations that assume no settling of suspended sediment. This represents typical river concentrations mixed with Sites concentrations that are probably unrealistically high." Sites Reservoir will not be diverting "median" river concentrations, but rather the higher concentrations occurring with higher flows in the January through March period. Throughout this DEIR, comments are made that analyses are "conservative," meaning that the DEIR considers worst case scenarios in the analyses. The analyses are not "conservative" at all, but are an underestimation of the concentration of metals that will occur in the reservoir since the available data does not identify the higher concentration of metals that will occur with higher flows.	Please see Master Response 4, Water Quality, and response to comment 19-25 regarding the conservative nature of the metals analysis. The comment is correct regarding when Sites Reservoir would divert water and, as described in Chapter 2, Project Description and Alternatives, Sites Reservoir would typically divert during high flow events when metal concentrations are likely to be elevated. The comment misinterprets the sentence in question. The median values mentioned in the sentence are median values for the Sacramento River receiving water, not the water that would be diverted to Sites Reservoir storage.
19-41	The DEIR on page 6-82 states that "the total aluminum, total copper, and total iron concentrations in Sites Reservoir are likely to frequently exceed aquatic life protection standards if settling did not reduce these concentrations." As noted previously, settling of sediments is not a permanent sink for metals in the reservoir. Dissolution of metals under anoxic conditions will allow metals from the sediments to re-enter the water column, which may then lead to even more exceedances of water quality standards for aquatic life protection.19	Please refer to Master Response 4, Water Quality, and response to comment 19-28 discussions regarding anoxic conditions. Please also refer to Master Response 4 for a discussion of the use of the I/O tower, which would control releases of water quality constituents by selective use of the multiple tiers in the tower.

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19-42	In discussing effects on aquatic communities in the reservoir due to metals, the DEIR on page 6- 82 states "these effects would occur on an aquatic community in a reservoir that is not present under existing conditions so there would be no substantial degradation of water quality relative to existing conditions." Strange statement. There is no degradation under existing conditions without the reservoir, but there are certainly impacts on the aquatic community when the reservoir is constructed. The SWRCB sets water quality standards and objectives that includes reservoirs.	In the analysis in Chapter 6, Surface Water Quality, the No Project Alternative represents the continuation of the existing conditions for the study area, in general, including the proposed reservoir site specifically. Because no reservoir exists under the No Project Alternative, a comparison cannot be made between existing water quality conditions at the proposed reservoir site and water quality conditions once Sites Reservoir is filled and operational. Please see the response to comment 19-31 regarding the determination of significant impacts and adverse effects of a project relative to an environmental baseline/No Project Alternative and No Action Alternative pursuant to CEQA and NEPA, respectively. As acknowledged in Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements, and Chapter 6, the operation of the reservoir will comply with applicable permit requirements issued by the State Water Board and other regulating agencies. Effects due to construction and operation of Sites Reservoir on special-status fish species and aquatic biological resources at locations outside of the reservoir are discussed in Chapter 11, Aquatic Biological Resources.
19-43	The DEIR on page 6-83 states "acute synergistic metal effects in the river would be greater than what might occur in Sites Reservoir because metal concentrations in the Sacramento River during high flow events are much higher than concentrations expected in Sites Reservoir." Diversions to Sites Reservoir would occur during high flow events, so metals concentrations in Sites Reservoir would be similar to those in the Sacramento River during these events. The DEIR goes on to state "as described above, once suspended sediment settles in Sites Reservoir most metals are expected to occur at levels below water quality standards for aquatic life protection,	The sentence that begins "acute synergistic metal effects" has been modified in the Final EIR/EIS to clarify that effects in Sites Reservoir may at times be similar to what occurs in the Sacramento River. Aluminum and copper are the most likely metals to exceed standards. Information in Chapter 6, Surface Water Quality, and Appendix 6E, Water Quality Data (e.g., Section 6E.1, Water Quality Standards for Metals; Section 6E.2, Metals Data by Month; and Section 6E.3, Metals Data Tables), show that most metals (i.e., metals other than aluminum

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	which would limit the likelihood of synergistic effects." The DEIR considered only four metals, but nonetheless found that "with these assumptions for partial settling, concentrations for total aluminum may be close to the 620 µg/L water quality standard for aquatic life protection, hovering between about 500 µg/L and 750 µg/L" and "total copper concentrations may occasionally exceed water quality standards for aquatic life protection" (page 6-82). This conclusion conflicts with the earlier and does not support the conclusion that most metals are expected to occur at levels below water quality standards for aquatic life protection.	and copper) occur at levels below water quality standards. Even for aluminum and copper, the Project would not be expected to cause exceedances of standards in Colusa Basin Drain or the Sacramento River, as described in Impact WQ-1 and Impact WQ-2. Please see Master Response 4, Water Quality, regarding selection of metals for detailed evaluation and discussion of additive effects.
19-44	Graphs are presented on pages 6-84 and 6-85 that depict estimated concentrations of various metals going back as far as the year 1920 to the year 2000. There are no metals data for nearly all the years depicted in the graphs, so how were the estimates determined?	CALSIM results for water years 1922–2003 were used in the estimation procedure described in Chapter 6, Surface Water Quality, Section 6.3.2.10, Pesticides and Metals other than Mercury. The methodology is also summarized and clarified in Master Response 4, Water Quality.
19-45	The DEIR on page 6-86 states that "arsenic levels measured in the Sacramento River are below regulatory standards." Arsenic levels in the Sacramento River near Red Bluff as well as at Hamilton City exceed several goals and objectives, including the California Public Health Goal for Drinking Water, USEPA National Recommended WQ Criteria for water and fish consumption, and USEPA National Recommended WQ Criteria for fish consumption. Though not regulatory, these goals are criteria to which arsenic concentrations should be compared to evaluate impacts.	Please see Master Response 4, Water Quality, and response to comment 19-23 regarding regulatory standards for evaluation.
19-46	The DEIR states on page 6-88 that "in drought years, releases from the reservoir's normal operating dead pool would be made through the low-level intake" and on page 6-89 that "if cyanobacteria and cyanotoxins are confirmed near the I/O tower at a level at or exceeding the "Caution" action trigger level, releases could be made from lower in the water column (e.g., through the low-level intake) to reduce the potential for higher concentrations of cyanobacteria and cyanotoxins to be released	Please refer to Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower to control releases of water quality constituents. If HABs/cyanotoxins were present at the I/O tower at the same time relatively high metal concentrations (including methylmercury) or water too cold for agriculture was deep in the reservoir, then there might be no I/O tower tier available for discharging relatively high-quality water. Master Response 4 explains

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	downstream. This hypolimnial release would result in water with high concentrations of methylmercury being released downstream.	why this scenario would be rare and additional measures would protect against the consequences of such a scenario.
19-47	In determining CEQA significance on page 6-92, the DEIR reiterates that "releasing water from lower in the reservoir if cyanobacteria and cyanotoxins are confirmed near the I/O tower at a level at or exceeding the "Caution" action trigger level, would further reduce any potential for adverse water quality effects," which ignores the conflicting issue of high methylmercury concentrations in the lower water. The DEIR on page 6-93 also states that "in the Sacramento River, discharges to the river from Sites Reservoir would occur after reductions in total metal concentrations due to settling of suspended sediment. These discharges would not cause substantial increases in concentration or exceedances or exacerbation of exceedances of water quality standards for metals in the Sacramento River." This ignores the importance of redistribution of metals from the reservoir sediments due to dissolution. Any increases in concentrations or exceedances of water quality standards for metals is a concern for downstream water users, even if not "substantial."	Please see response to comment 19-34 and Master Response 4, Water Quality, regarding the selective use of multiple tiers on the I/O tower to control releases of water quality constituents, including cyanotoxins and methylmercury. Please see Master Response 4 for a discussion of dissolution under anoxic conditions. Please see responses to comments 19-6 and 19-30 regarding the antidegradation policy. As evaluated and presented in Chapter 6, Surface Water Quality, the one unmitigable exceedance of water quality standards in the Sacramento River is for methylmercury. Chapter 6, Appendix 6E, Appendix 6F, and Master Response 4 indicate the small magnitude of effect on metal concentrations in the Sacramento River. The Authority will work with the State Water Board and Regional Water Board (as applicable) as part of the certification process under Section 401 with regard to application of the antidegradation policy, which includes evaluation of small changes in water quality that are not covered in Chapter 6. Cumulative effects of small changes in metal concentrations are considered in Chapter 31, Cumulative Impacts.
19-48	Mitigation for impacts to Stone Corral Creek include "release occasional pulses of high flow. Flow pulses could flush away low-quality sediment and water from the bottom of the reservoir adjacent to Sites Dam." This would flush contaminant laden sediments downstream, resulting in downstream impacts including smothering of aquatic habitat with toxics laden sediments. Adding "a vertical extension in the reservoir at the withdrawal point. This extension would pull water from higher in the reservoir, where metal concentrations are expected to be lower" and "pump water from the	Mitigation Measure WQ-2.1 allows a range of possible actions, with several possible approaches provided. The sediment at the bottom of Sites Reservoir is unlikely to be toxics laden, although it might have bound metals similar to what may already be present in Stone Corral Creek. If a particular level of flow pulse is ineffective or releases too much sediment, the approach would be modified (e.g., the flow would be changed or a different type of approach, such as one of the other listed options, would be used). HABs would not continually be present

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	top of Sites Reservoir for release into Stone Corral Creek." But HABs are higher in this water that would be supplied from the upper water column of the reservoir – trading one impact for another.	in Sites Reservoir because of their seasonal variation and likely would not be present in the entire water column from an anoxic zone to the water surface. For this reason, pulling water from higher in the reservoir is a viable option. Please see the Master Response 4, Water Quality, discussion regarding use of the I/O tower. While this discussion focuses on use of the I/O tower, the discussion is also relevant to withdrawing water from various elevations in the reservoir. In addition, Master Response 4 contains text describing other protections for Stone Corral Creek and describes how the creek is often dry during the months when HABs would be more likely to be present in Sites Reservoir.
19-49	Another mitigation for Stone Corral Creek (page 6-95) is to "pump water from the top of Sites Reservoir for release into Stone Corral Creek. Based on the demonstration of the effect of partial settling of suspended sediment on total metal concentrations in Sites Reservoir and the conservative nature of this assessment, metal concentrations in Sites Reservoir are expected to meet water quality standards for the protection of aquatic life during the drier parts of the year in water located above the deepest portions of the reservoir." This conflicts with earlier statements in this DEIR (page 6-82) that states "based on the calculations that demonstrate the effect of partial settling of suspended sediments, settling of suspended sediment may have a substantial effect on total metal concentrations. With these assumptions for partial settling, concentrations for total aluminum may be close to the 620 µg/L water quality standard for aquatic life protection, hovering between about 500 µg/L and 750 µg/L (Figure 6-9). Total copper concentrations may occasionally exceed water quality standards for aquatic life protection." Even higher concentrations could be expected had the effects of dissolution of metals from the sediments been considered in the analysis.	Dissolution of metals from the sediments under anoxic conditions was considered in the analysis and is a primary reason Mitigation Measure WQ-2.1 was developed. Dissolution of metals from sediments is further considered in Master Response 4, Water Quality. Text in Chapter 6, Surface Water Quality, regarding Mitigation Measure WQ-2.1 was revised in the Final EIR/EIS to acknowledge that concentrations of a few metals could occasionally be above water quality standards for aquatic life and to describe the additional protective measure in place for Stone Corral Creek (i.e., curtailing flows) to prevent such occasional exceedances from occurring; this revision does not change impact determinations or conclusions contained in Chapter 6. Please see Master Response 4 and response to comment 19-21 for a discussion regarding the conservative aspects of the analysis. Please also see Master Response 4 for beneficial uses of Stone Corral Creek and Funks Creek, and protections for Stone Corral Creek and Funks

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		Creek. As described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, water quality in Stone Corral Creek and Funks Creek will be monitored as part of the RMP and the Stone Corral Creek and Funks Creek Aquatic Study Plan and managed through adaptive management. Eventually, water from the creeks would mix with other water sources, reducing the water quality signature from Sites Reservoir.
19-50	The DEIR on page 6-100 states that "the net effect of the Project would be to enhance beneficial uses of water, and water quality could improve in parts of the study area. For example, during some months the increases in Delta outflow could reduce seawater intrusion and under certain circumstances Alternatives 1, 2, and 3 could allow for seasonal storage changes in Shasta Lake that could help to preserve cold-water supply for fish through exchanges with Sites Project water." Increased releases from Sites Reservoir to preserve water in Lake Shasta will result in a greater percentage of water in the Sacramento River being composed of Sites Reservoir water, which results in less dilution from Shasta releases, and greater metals concentrations in the Sacramento River.	As described in Chapter 5, Surface Water Resources; Master Response 2, Alternatives Description and Baseline; and Master Response 3, Hydrology and Hydrologic Modeling, exchanges are included in the CALSIM simulations. As such, they are included in the water quality evaluations and the Sacramento River dilution estimates, and the metal concentrations reported in the analysis of Chapter 6, Surface Water Quality, account for the effect of exchanges on dilution. The exchanges affect the timing of Sites Reservoir releases but not the total volume of releases. When water would be released from Sites Reservoir to retain water in Lake Shasta, there would be a slight increase in the fraction of Sacramento River water emanating from Sites Reservoir, but the reverse would occur when the exchange water stored in Lake Shasta is eventually released.
19-51	This section goes on to say "the development of Sites Reservoir for Alternative 1, 2, or 3 would create in-reservoir habitat and thus net benefits for Reservoir cold-water and warm-water fish species." Cold water fish species would be impacted by the anoxic conditions expected to occur in the hypolimnetic environment required by such fish. In addition, high methylmercury concentrations in the reservoir will impact all fish species. Mitigation for mercury includes not stocking fish for at least 10 years, so there would be no net benefits to cold-water and warmwater fish species for at least 10 years.	Please see response to comment 19-31 regarding the determination of significant impacts and adverse effects of a project relative to an environmental baseline/No Project Alternative and No Action Alternative pursuant to CEQA and NEPA, respectively. Because no reservoir exists under the No Project Alternative, all alternatives would benefit cold-water and/or warm-water fish species in the reservoir once it is operational and stocked through the creation of new habitat (see Chapter 11, Aquatic Biological Resources, Impact FISH-18 and Appendix 11E, Reservoir Fish Species Analysis).

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		As described in Chapter 6, Surface Water Quality, Mitigation Measure WQ-1 and in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, methylmercury management measures would be implemented at Sites Reservoir to reduce the methylation of mercury in the reservoir and thus fish exposure to and bioaccumulation of methylmercury.
19-52	This section also states that "operations would increase water supply reliability for refuges, municipalities, and agriculture, particularly in Dry and Critically Dry Water Years." Though reliability may increase, the quality of water provided by Sites Reservoir may not be suitable for wildlife habitat in refuges and may require additional treatment by municipalities, particularly in dry and critically dry years when less dilution water would be available from existing water projects.	Please see Master Response 4, Water Quality, regarding beneficial uses and the metals analysis approach, which includes consideration of dilution during Dry and Critically Dry Water Years. CALSIM results are used to calculate dilution for the entire 1922–2003 simulation period. As discussed in Chapter 6, dilution would be lower when flow in the Sacramento River is lower, but dilution would always be substantial; when Sites Reservoir would release water to the Sacramento River, it would constitute 14%–15% when discharges are relatively high compared to river flow (i.e., 90th percentile values), depending on whether Alternative 1, 2, or 3 was implemented.
19-53	The Sacramento River from Red Bluff to Knights Landing is on the Clean Water Act Section 303(d) Impaired Water Bodies list for PCBs, but there is no discussion in this DEIR about PCBs.	As described in Chapter 6, Surface Water Quality, Section 6.3, Methods of Analysis, water quality constituents were chosen for evaluation based on whether elevated levels of the constituents are present in the study area as evidenced by presence on the 303(d) list or other documentation and whether there is a mechanism by which operation of Sites Reservoir could affect those levels. PCBs were dismissed from further evaluation, along with other contaminants closely associated with sediment, in Chapter 6, Section 6.3.2.1, Selection of Water Quality Constituents to Evaluate, because these compounds would not be expected to be any more concentrated in Sites Reservoir than in the Sacramento River or Colusa Basin Drain and would be expected to mostly remain adsorbed to sediment.

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19-54	Chapter 5. Surface Water Resources The DEIR on page 5-28 states that "in-lieu exchanges between Sites Reservoir releases and flow in the Sacramento River would occur when Sites Reservoir releases were used to meet local Storage Partner demands (Sacramento River Settlement Contractors, Reclamation, or, most likely, GCID) that normally would be met through diversions from the Sacramento River." There would be no dilution of water from Sites Reservoir with water from the Sacramento River under such exchanges, and therefore water with higher levels of metals would be supplied to local Storage Partners, particularly GCID, with associated adverse effects. There is no discussion about the adverse effects of such exchanges from metals or other water quality parameters (HABs, cyanotoxins, etc.) to the local water users, including use on wildlife refuges.	The commenter's assumption that there would be no dilution of Sites Reservoir water for local agriculture is generally not correct. Sites Reservoir is intended to provide a Dry Water Year supplemental water supply for agricultural, municipal, and industrial uses. The local participants upstream of the Delta are mostly agricultural users who are under contract to Reclamation for delivery of Sacramento River water. During extremely dry conditions, the shortage provisions of those contracts are enacted, but there are rarely no diversions from the Sacramento River. For example, in Critically Dry Water Years, agricultural contractors may receive only 5% of their allocation, and settlement contractors' deliveries may be reduced to 75% of their allocation. Only under extremely dry conditions, such as occurred during the 2012 to 2016 drought sequence, have those amounts not been available for diversion. Thus, there is likely to be Sacramento River water in the conveyance systems that would dilute the water released from Sites Reservoir. In addition, many of the local users have alternate sources of water that could be used to mix with Sites Reservoir water. Even if water from Sites Reservoir were used directly for agricultural purposes, it is unlikely to affect agriculture. As shown in Section 6.3, Methods of Analysis, of Chapter 6, Surface Water Quality, of the Final EIR/EIS, in general, water quality standards for agriculture are substantially higher (easier to meet) than other water quality standards. While evaluation of reservoir water quality (Impact WQ-2 in Chapter 6) indicates that Sites Reservoir may sometimes have higher concentrations of some metals than the Sacramento River, aqueous concentrations of metals are expected to be substantially below water quality standards for agriculture.

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		A more detailed analysis of arsenic was done because of its toxicity. All estimated values for arsenic were substantially less than regulatory standards for drinking water, aquatic life protection, and agriculture (Table 6-19). This information is reviewed in Chapter 15, Agriculture and Forestry Resources (Impact AG-4). Alternatives 1, 2, and 3 would not result in increased arsenic levels that would be toxic for agricultural purposes, including rice, and soil concentrations of mercury/methylmercury in Yolo Bypass are not expected to increase. The only local (i.e., north of the Delta) refuge in a location to receive water directly from the reservoir is the Colusa National Wildlife Refuge (NWR). Like other local users, the Colusa NWR has multiple sources of water that would mix with deliveries from Sites Reservoir. Monitoring and mitigation measures incorporated in the RMP will ensure standards are maintained. Please also see Master Response 4, Water Quality, regarding beneficial uses and the Chapter 6 metals discussion for Impact WQ-2.
19-55	The SWRCB is engaged in activities to address the precipitous declines of native aquatic species and the ecosystem they depend upon. These activities include updating the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary to protect the Bay-Delta watershed and its many beneficial uses. The SWRCB is focusing on the Sacramento River and its tributaries, Delta tributaries, Delta outflows, and interior Delta flows. As with the Lower San Joaquin River and Southern Delta update, the SWRCB is concerned about adequate flows in the Sacramento River system to protect instream fish and wildlife, and is proposing Delta inflows of up to 65% of unimpaired flow in the Sacramento River. These updates to the Bay-Delta Plan will reduce the amount of water available for diversion to the proposed Sites Reservoir. There is no discussion about how the reduced flows available for diversion from the Sacramento River due to	The RDEIR/SDEIS identified the State Water Board's update to the 2006 Bay-Delta Water Quality Control Plan, as amended in 2018 (Bay-Delta Plan) (State Water Resources Control Board 2006, 2018), as an ongoing cumulative project (Chapter 31, Cumulative Impacts, Table 31-1). The Final EIR/EIS retains updates to the Bay-Delta Plan in Chapter 31 under Section 31.3.1.2, Alternatives 1, 2, and 3 - Water Supply. The Authority recognizes and acknowledges that amendments to the Bay-Delta Plan could result in restrictions on diversions for Sites Reservoir. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding Bay-Delta Plan updates.

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	updates to the Bay-Delta Plan will affect the viability of the proposed Sites Reservoir project.	
19-56	Chapter 10. Wildlife Resources In discussing Impact WILD-1k: Golden Eagle and Bald Eagle, the DEIR states on page 10-96 that "the completed reservoir would provide new bald eagle foraging habitat (fish in the reservoir) and result in new nesting sites or wintering habitat because of the proximity to new foraging habitat. These would be beneficial effects." There would be no fish in the reservoir for at least 10 years (Mitigation Measure WQ-1.1), so there would be no new bald eagle foraging habitat and no new nesting sites or wintering habitat because of the proximity to new foraging habitat, therefore no beneficial effects. After 10 (or more) years, any fish stocked into the reservoir would develop a mercury burden which would impact fish eating birds, such as the bald eagle.	The beneficial impacts related to improved bald eagle nesting, foraging, and wintering habitat would not occur for the first 12–20 years of operation (2–10 years for reservoir filling and 10 years after filling before fish are introduced [see Section 6.3.1, Construction, in Chapter 6, Surface Water Quality]). The 10-year timeframe for fish introduction is discussed in several locations in the RDEIR/SDEIS and beneficial impacts related to improved bald eagle nesting, foraging, and wintering habitat would not occur until the end of the 13- to 17-year period. This information was added to Chapter 10, Wildlife Resources, of the Final EIR/EIS. Regarding the bioaccumulation of methylmercury in reservoir fish, methylmercury concentrations are expected to be highest in the first 10 years after reservoir filling and then decline to a steady-state concentration over time (Section 6.2.2.4, Mercury and Methylmercury, of Chapter 6). Implementation of Mitigation Measure WQ-1.1 is expected to reduce the potential impact on bald eagle from bioaccumulation of methylmercury in reservoir fish to less than significant because steps would be taken to reduce, monitor, and manage mercury in the reservoir and fish bioaccumulation. Mitigation Measure WQ-1.1 includes delaying stocking of fish in the first 10 years when the potential for methylmercury levels in the reservoir is expected to be the highest, monitoring methylmercury in fish tissues, management of reservoir fisheries to reduce in-reservoir methylmercury concentrations in fish through somatic growth dilution by reducing reservoir fish populations, and selective fish stocking (e.g., stock with low-methylmercury prey fish for stocked predator fish). A discussion of the potential effect of methylmercury

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		bioaccumulation in fish on bald eagle was added to Chapter 10 of the Final EIR/EIS. The text addition does not change the impact determination, which is less than significant after mitigation for bald eagle, or conclusions in that chapter because implementation of Mitigation Measure WQ-1.1 would minimize impacts, as discussed above.
19-57	CEQA Significance Determination and Mitigation Measures finds that implementation of Alternative 1 or 3 would have the beneficial effects of providing new bald eagle foraging habitat (Sites Reservoir) and new nesting sites or wintering habitat because of the proximity to the new foraging habitat. As explained above, there is no new foraging habitat or nesting or wintering habitat because there will be no fish in the reservoir for at least 10 years. This is also true for the NEPA Conclusion on page 10-99. There is no discussion of any mitigation measures to prevent bald eagles, or other fish eating birds, from ingesting fish contaminated with mercury, or how their populations will be mitigated due to the adverse effects from ingestion of mercury laden fish.	Please see response to comment 19-56 concerning bald eagle nesting, foraging, and wintering habitat and bioaccumulation of methylmercury in reservoir fish.
19-58	In discussing impacts to various species of bats, the DEIR states that "the completed reservoir would provide a new drinking water source and foraging habitat (insects associated with the reservoir) for bats. This would be a beneficial effect of the Project." The DEIR does not address the impacts to bats from ingesting water laden with cyanotoxins from HABs in the reservoir, nor the effects of mercury in the insects that the bats would be eating.	Limited information is available on the potential impacts of HABs on bats. In one study, little brown bats (Myotis lucifugus) were found to be not highly affected by the ingestion of microcystin, a hepatotoxin (Jones 2016). Dead bats have also been found near HABs (Pybus et al. 1986). If HABs were to occur in Sites Reservoir (see Chapter 6, Surface Water Quality), cyanobacteria and cyanotoxins could be ingested by bats, either through drinking water or eating insects contaminated with the toxins. The water quality monitoring program and a HABs action plan described under Harmful Algal Blooms in the RMP in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, would minimize the potential for HABs to be present and ingested by bats. Also please refer to Master Response 4, Water Quality, for additional information about addressing HABs in

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		the RMP. A discussion of this potential impact has been added to Chapter 10 of the Final EIR/EIS. The text modifications do not change the impact determinations or conclusions in the chapter. Consumption of insects contaminated with methylmercury from Site Reservoir could cause illness or mortality of bats. A discussion of this potential impact has been added to Chapter 10 of the Final EIR/EIS. The text modifications do not change the impact determinations or conclusions in the chapter. Additionally, the implementation of Mitigation Measure WQ-1.1 would minimize potential impacts on bats from eating insects contaminated with mercury by requiring steps that will be undertaken to reduce, monitor, and manage mercury in Sites Reservoir.
19-59	[Exhibit 1] Table 1. Water Quality Data from the Sacramento River below Red Bluff during the Primary Diversion Period of January through March (D=dissolved, T=total)	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
19-60	[Exhibit 2] Table 2. Water Quality Data from the Sacramento River at Hamilton City during the Primary Diversion Period of January through March (D=dissolved, T=total).	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
19-61	[Exhibit 3] Table 3. Water Quality Objectives, Numeric Thresholds, and Exceeances for the Saramento River below Red Bluff	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
19-62	[Exhibit 4] Table 4. Water Quality Objectives, Numeric Thresholds, and Exceedances for the Sacramento River at Hamilton City	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
19-63	[Exhibit 5] Table 5. Projected Metals Concentrations	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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19-64	[Exhibit 6] Table 6. Projected metals concentrations in the Sacramento River at Hamilton City and CBD with dilution of Sites Reservoir water in the respective water bodies	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
20-1	We grow olives in Corning, CA and the Corning Water District cut our allotment to zero last summer. We tried watering from our well, and it went dry within a month. Our 10 acre orchard received no water all summer and several trees have died. We desperately need more water and support the Sites water project.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
21-1	It is a very exciting and promising project. I look forward to the outcomes. I am submitting one comment below: Hydrology will be significantly changing and therefore impacting hydraulic flows in the Sacramento River and its tributary area flooding issues. I don't see discussion regarding hydrologic changes in the executive summary or comparison between the 2017 and 2021 EIR. It will be great to see a section regarding hydrology issues in the 2021 EIR.	A description of Sacramento River flows can be found in Chapter 5, Surface Water Resources. Chapter 5 also contains analyses of the Project-related impacts to surface water hydrology, including flooding. Master Response 3, Hydrology and Hydrologic Modeling, contains additional information about surface water hydrology and modeling. Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
22-1	I'm a little concerned -- well, I'm more than a little concerned that the EIS/EIR is focusing on impacts on fisheries. That's important. We've watched the Delta Smelt go extinct in its native habitat, essentially, in the Delta, and we've seen continued declines in winter and spring run -- salmon in Sacramento River so those are important. That's an important issue in terms of this project. Leaving enough water in the fiver for those fisheries to survive.	Chapter 11, Aquatic Biological Resources, provides a detailed analysis of the potential impacts on aquatic biological resources, including potential impacts on fish species such as salmon and delta smelt. This analysis includes actions to increase survival of anadromous and endemic fish populations. Additional discussion of the benefits to anadromous fish can be found in Master Response 5, Aquatic Biological Resources.
22-2	It appears to me that this document and the Sites partnership has not done a very good job trying to assess impacts on the Sacramento River ecosystem, particularly, it's riparian habitat. The riparian habitat along the Sacramento River is some of the most healthiest in the State. I've run a lot of rivers in the State. I can tell you that Sacramento River remains one of the few rivers that looks natural, and it's because it has sufficient flows, despite	Impacts on riparian habitat are analyzed in Chapter 9, Vegetation and Wetland Resources, and impacts on special-status wildlife species are analyzed in Chapter 10, Wildlife Resources. Please see Master Response 2, Alternatives Description and Baseline, regarding the adequacy of the impact analysis, as well as Master Response 6,

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	hosting the largest dam and reservoir in California -- in Shasta Dam Reservoir. There are sufficient flows from tributaries to provide for erosion and deposition of sands and that recreate riparian habitat over the years, and henna (phonetic) and riparian habitats a number of rare and endangered and threatened wildlife species, and I can find nothing in this document so far that reflects any substantial assessment of impacts on this -- from this Project. So I would urge you to do that.	Vegetation, Wetland, and Wildlife Resources, regarding general comments on vegetation, wetland, and wildlife resources.
22-3	I would urge you to extend the comment deadline, because this is a huge document, released just before the holidays, and it just is important for the -- give the public the time they need to review and comment on it.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
23-1	I want to oppose this project. Using Prop 1 funding on this project so far does not show the public·benefit. This project is unstable, obsolete infrastructure, using unstable, obsolete mechanisms to pay for it, as well as unstable ways of looking and analyzing.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
23-2	Being -- you know, trying to move the money before the environmental document is done is very disrespectful to the tribal engagement that's been going on -- the lack of tribal engagement that's been going on. The ability and -- and because of the use and how much this project depends on the State water project, all tribes included along the tributaries of the State water project need to be included.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS and the Master Response 1 section titled Public Review and Outreach Process for the RDEIR/SDEIS regarding public outreach. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, for information on how requirements for Tribal coordination and consultation have been met for the Project.
23-3	This project also will contribute to the detriment and to the extinction of California salmon and the markets that come with them.	Chapter 11, Aquatic Biological Resources, provides a detailed analysis of the potential impacts on aquatic biological resources, including potential impacts on fish species such as salmon and delta smelt. This analysis includes actions to increase survival of anadromous and endemic fish populations. Additional discussion of the benefits to anadromous fish can be found in Master Response 5, Aquatic Biological Resources.

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23-4	I also want to, again, make sure that you do extend the comment deadline for this project. Being that it's being rushed is super unstable, obsolete way of doing things, and we need to change that. Being able to give the comment -- extend the comment period gives tribes a chance to understand what all the ramifications are, what happens when you flood a whole village site, when you take these resources away for generations.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
23-5	That's what has not been addressed in the EIR/EIS yet and needs to be addressed is the way cultural resources will be protected when you flood and create a new ecological ecosystem.	Project effects on cultural resources are evaluated in Chapter 22, Cultural Resources, under Impacts CUL-1, CUL-2, and CUL-3. Mitigation Measures CUL-1.1-CUL-1.4, CUL-2.1-CUL-2.4, CUL-3.1, and CUL-3.2 would be implemented to reduce the level of impact on cultural resources.
24-1	I wanted to say that I feel like this EIR and EIS includes a lot of assumptions that are not proven in fact. And there's a lot of holes.· And I feel like there's a lot of putting the cart before the horse. First of all, the Sacramento is completely over --system. I think five times as much water is allocated than actually exists.· And you're def -- you're trying to get -- relying on water that doesn't necessarily exist.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
24-2	Climate change is not really factored into the modeling.	Chapter 28, Climate Change, summarizes modeling results associated with climate change and climate change effects. The modeling results and the modeling used for analyzing climate change are provided in Appendix 28A, Climate Change, which include the effects of climate change on future precipitation as reflected in the revised 2035 Central Tendency (CT) results and the modeled Water Storage Investment Program (WSIP) 2070 results (provided as part of the Final EIR/EIS). Chapter 28, Section 28.3, Methods of Analysis, describes the methods used to evaluate potential effects associated with climate change. The analysis is based on the Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, released by CEQ on August 5, 2016 (Council on

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		Environmental Quality 2016). The 2016 guidance indicates that NEPA analyses should identify climate change effects on a proposed action and the potential effects of the proposed action on climate change by assessing GHG emissions. Estimated GHG emissions for the Project are included in Chapter 21, Greenhouse Gas Emissions. Additional information on how climate change was considered in the hydrologic modeling and hydrology analysis can be found in Master Response 3, Hydrology and Hydrologic Modeling.
24-3	The environmental baseline is not based in reality, as it's based on the Trump-era of biological opinions, which are illegal and are killing all of the salmon off.	Please see Master Response 2, Alternatives Description and Baseline, regarding the baseline conditions/No Project Alternative/No Action Alternative for the RDEIR/SDEIS.
24-4	It's [the project] gonna impact Delta outflows, which is at -- already right now, Delta outflows are severely impacted.·	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the 2006 Bay-Delta Water Quality Control Plan, as amended in 2018 (State Water Resources Control Board 2006, 2018).
24-5	The water quality analysis shows pretty extreme impacts to water quality, and when you don't have as much water going into a system, that means that agricultural chemicals also are concentrated. So this could really impact the State's water supply as far as the drinking water quality for anyone who gets water out of the Delta.	Chapter 6, Surface Water Quality, provides a full analysis of potential impacts on water quality and includes the Delta in the study area for the water quality analysis. Additional information regarding the type of data and modeling results used is provided in Master Response 4, Water Quality.
24-6	I also think that the fact that the tribal consultation has not been robust is a huge issue.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS and the Master Response 1 section titled Public Review and Outreach Process for the RDEIR/SDEIS regarding public outreach. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, for information on how requirements for Tribal coordination and consultation have been met for the Project.
24-7	I think that it's disingenuous to say that bypass flows are protected, because they're not. The 1800 CFS only applies to two months out of the year, and	Please refer to Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures.

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	then the flows will go way down through other months when it's critical for fish to have -- have that water, including spring salmon.	
24-8	I really feel like the EIS and EIR is trying to put lipstick on a pig or, you know, it's trying to make it sound like building dams and reservoirs is good for fish and good for the environment, but it's not.· It's a water grab, and it's·a -- largely gonna go out of the area, and it's gonna take much more water from our rivers.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
25-1	On Monday, December 13th, Friends of the River Pacific Coast of Federation Fishermen's Association, Institute for Fisheries Resources, California Native Plant Society, and Sierra Club California submitted a letter to Sites Authority requesting an extension of time to provide public comments on the RDEIR and SDEIS. The documents, we understand, thousands of pages, including appendices was circulated for review on November 12th, making the deadline for public comment January 11th. We're requesting, respectfully, an additional 31 days, making the comment deadline February 11th, 2022. We expect this will not impact the overall project deadlines. As said earlier today at the California Water Commission Meeting and on your website, the expected completion for the finalized documents is not until late summer or early fall. There's a discrepancy there, but I understand that this is going to take quite a bit of time to go over, review, and time to finalize the documents, so we respectfully request additional time to provide you that substantive feedback that will help you do so. We understand the alternatives include reservoir sizes, from 1.3 to 1.5 million acre feet. And, of course, with those alternatives comes a variety of different as -- you know, impacts, as well as technical material to review. And as you've heard from others, today we share some of those concerns about those impacts. FOR and others need to have the time to provide that meaningful feedback, and we would like to be able to do so. So, respectfully, especially with the holidays and the other projects that are	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.

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	happening, as well as the fact that there was a commission meeting today, on the same day of this public comment period -- no rest for the wicked. We would just really appreciate an extension of time.	
26-1	I'm currently a California resident, and I'm concerned about having safe drinking water for myself and my kids one day. I would like to say, think about what we are doing here and continue forward with love in your heart.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
27-1	I hear the complaint about people asking for an extension on a time to comment. I do not think that's necessary.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
27-2	Listen, I think Sites is a contentious project, and I - you know, good job on engaging with it and for hosting these calls. I think that's excellent. I will just say that I'm a supporter of this project. I think with increasing precipitation, falling as rain, and not as snow, we need to increase surface capacity. We have serious groundwater issues in the north state. We have serious water issues in the north state. We have a very, you know, oversubscribed water flow out of the Sacramento Basin, and I think that some part of the solution will be increased service capacity.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
27-3	The first issue is not Sites. It is fire and forestry. But water is always number three. And everyone knows what Sites is. Everyone who lives here, from Shasta to Chico knows what Sites is, knows what the plan involves, knows the options. And I think that this has been studied enough. It's time to make a decision and build or not build.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
28-1	Trying to make sure that, you know, we're really doing our due diligence.· This project cannot be just pushed through. Although there has been extensive studies, this project has changed, continues to change as we move the goal posts. We can't continue to expect that we're gonna have a level that we're going forward with right now.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
28-2	We need the extra time to analyze ourselves, as the people. Don't forget, 48,000 people have written in and opposed this project.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.

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28-3	I'm not sure how this document includes all of the opposition. I'm not sure how this project includes, again, all of the different court cases that come down, regarding tribal sovereignty, treaty law. These are all things that need to be in place, as well as the jobs, as well as the environmental soundness of this document. We can do it.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS.
28-4	I'm very in supportive of options for groundwater, but we can -- we have to listen to the people. We can't just keep on doing private, sanctioned, unstable infrastructure like this and think that we're gonna be combating climate change. We're gonna keep on getting the same issues that we voted against when we voted for Prop 1, when we voted for good water. We didn't think of this type of centralized, unstable, obsolete infrastructure. We have to do something different. Now's our chance to show the world, is California being a leader? We can do things different. We can build differently. We can do our water politics differently. We don't have to buy into the corporate. We don't have to continue to rely on the unstable marketplace, that is New York Stock Exchange. We have to make sure to understand that people have voices, Indigenous people have the most understanding to combat climate change, and that has the driver's seat in moving forward with any kind of environmental document analysis report.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
29-1	I agree with Isaac [Kinney, comment letter 23], and I also just want to say that I disagree with the previous caller about the awareness of this project. I think there's actually a lot of ignorance around what's been happening, all the way from Poya Poya Gra (phonetic), Mount Shasta, all the way to Mechoopda, or Chico, need of land, specifically because it hasn't been included in the process. And I don't think everybody has been made aware.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
29-2	We should not take lightly all of the adverse and cumulative impacts that are mentioned that are still being studied in this process, that we still have to recognize. They're gonna be drastic changes, and we don't want to take that lightly.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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29-3	I also want to add that we do need to have an extension. We do need to look at these details, because once these changes are made, they're irreversible, and we can't -- we -- we can't afford -- I mean, we're already looking at a world where salmon are -- are on the brink of extinction. We're looking at situations where, you know, if salmon aren't thriving, we're not thriving. If our -- if our watersheds are not healthy and in the condition in which they were originally made really and truthfully, if we hadn't messed with them, I don't think we would be in the situation right -- we're simply in. So, everything -- I really do support the fact that we need to take our time, that we need to be more inclusive in this process, and not to take any kind of decision-making lightly or feel that we're gonna be too rushed in this process, because one thing we can change, that's it.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
30-1	My comment is actually process-related. I just wanted to say that I don't think a lot of people did know about this meeting. I don't think it was really noticed how to get on this meeting, to participate very well. I asked when -- when there was gonna be a Zoom link on Monday. Forty-nine thousand people, almost, have sent in letters against this project. I think at least 30, but maybe up to 50 people commented today at the California Water Commission Meeting. Those comments were 95 percent against California funding this project.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
30-2	I don't think people know where the water is supposed to go to, or the fact that Metropolitan Water District is 25 percent holder of the water, so that's not a lot of benefits for the north state. I live in the north state. Almost everyone who's a member of the State of California Salmon lives in the north state, so I definitely take offense to, like, everyone supports this. I think almost hardly anyone even knows about it. And when we tell people about it, they don't think it's a good idea.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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30-3	I definitely ask for the extension too, but I think along with the extension, there should be a -- maybe as a consideration of another public comment meeting after the holidays, because I think -- I mean, an EIS and an EIR is when all this is supposed to hit the table, when you're supposed to know. And everything I hear is we're gonna study this later. We're gonna talk to the community about this later, and that's not how a public process is supposed to play out. And it's not what makes people feel safe about a project. So my -- I'm keeping my comments just to not feeling like this was a well-noticed hearing, or a well-noticed project. And -- yeah, I mean, all the meetings I've gone to on this, very few people have gone to. But, literally, tens of thousands of people have told me that they're opposed. So -- yeah, I think there needs to be more information out there and more discussion.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
31-1	The point of my raising my hand was to second or third or fourth all the opinions asking for a longer consideration period, and specifically, consultation period.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
31-2	I asked people around here in this little town, you know, about it. They don't know. I find it interesting that so much of our environmental around here is decided without the process or even the curiosity, and I think that there are folks that would have an opinion and would have a veal (sic) to, you know, understand the project of this dimension.· Also, I just want to say, you know, when I flunked out of college in '91, I got commissioned by the SOD Buster to go up to -- I guess it was Stonyford -- I forget -- it's the tavern there to interview people about what they thought about water projects that were going on then -- or proposed then, and I just think it's funny to come back here and think, oh, my God, they're still trying to move forward with this reservoir idea in -- in the face of climate change, and the depleted stocks of salmon on our entire, you know, west coast. I just think it's a travesty and an outdated project, and I can't believe we're still here.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.

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	But for -- at the very least, I think that - I appreciate all the comments about people's interest in getting other folks involved and more voices represented.	
32-1	The Sites Project Authority has adopted a number of core principles, as part of its Mission Statement. One of those core principles is transparency. The Sites project has a website that's very well constructed, called Sitesproject.org. The Sites Project is being led by the Sites Project Authority, which is a public agency. As a public agency, they're -- all of their meetings have to be noticed, publicly, and they are noticed on the website, along with a schedule of the meeting dates. As a member of that Project, I would encourage all members of the public to attend meetings. In order to have -- to have a successful project, we need to have the best input from the best minds, and lots of input, even from not the best minds, and I'm putting myself in that category. We are committed to transparency, and there is a public process for notifying people what we're doing. That process is open to the public through these meetings. There is a Reservoir Project Committee that is similarly required to provide notices of its meetings, and I'm not sure what else can be done in terms of public outreach to making sure as many as people -- as possible know about the project. You know, there -- there's a website. There's press releases. There's public email blasts. I don't think CEQA requires Sites to send a mailing to everyone who lives north of San Jose. So, perhaps some party would be -- have some input that would help us in terms of providing better notice to the public.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
33-1	MEREDITH HACKLEMAR:· Thank you for allowing me to comment.· My name's Meredith Hacklemar; ·M-e-r-e-d-i-t-h, H-a-c-k-l-e-m-a-r, and I have been a·visitor, settled here in the State of California for 30·years.· I moved all over the State, and everywhere I go,·I see how water infrastructure has destroyed the natural·landscape and the flow and all the habitat.· And	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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	the·last thing we need is another piece of infrastructure.·There's no more water to divert.	
33-2	·I believe strongly in Indigenous sovereignty,·and I support the rights of California Indians and their land and water rights.· And to destroy and flood another sacred site with cultural resources is unconscionable,·so I'm really against this project, and I thank you for·allowing me to comment.	Potential impacts on cultural and Tribal cultural resources are analyzed in Chapter 22, Cultural Resources, which acknowledges that impacts on archaeological resources would be significant and unavoidable under Alternatives 1, 2, and 3, and in Chapter 23, Tribal Cultural Resources, which acknowledges that impacts on Tribal cultural resources would be significant and unavoidable under Alternatives 1, 2, and 3. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the Authority's and Reclamation's consultation and engagement with Tribes, as well as Reclamation's fulfillment of federal trust obligations.
34-1	Good morning, Commissioners.· Thank you for·the opportunity to speak.· I'm Malissa Tayaba, ViceChair of Shingle Springs, Band of Miwok Indians.· The·Shingle Springs Band of Miwok Indians derives from both·Miwok and Utian lineage, with major village sites in·Sacramento, the Delta, and beyond.· The tribes·ancestorial homelands span seven counties, including·Sutter, Yuba, Yolo, Sacramento, El Dorado, Placer and·Amador.· The inter-connectivity of the land, the·waterways, the people, the plants, animals, and·resources is deep, reciprocal and time-wise.· The·ancestorial waterways are the lifeblood of the tribe and·include the Sacramento River, American River, Feather·River, Bear River, Consumnes River, and the watersheds·therein. The Shingle Springs Bank of Miwok Indians were·originally displaced by colonization, the mission·system, disease brought by fur trade, the arrival of·John Sutter, the genocide violence of the Gold Rush, the·political violence of California's state head, and ·anti-Indian laws and policies. Delta ancestorial homelands were lost to·Reclamation and colonization in the 19th Century, and we·have been kept out by private land ownership and state·and federal water resource development in the Delta·Region.· The	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS and the Master Response 1 section titled Public Review and Outreach Process for the RDEIR/SDEIS regarding public outreach. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the Authority's and Reclamation's consultation and engagement with Tribes, as well as Reclamation's fulfillment of federal trust obligations.

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	Delta is a diminishing resource, that once·stretched at least as far north as the confluence of the·Sacramento and Feather Rivers in Sutter County, near the·Nisenan Village of Vola. It is being further diminished, along with its·cultural and traditional resources that tribes have·utilized from the Delta for food, medicine, transportation, shelter, clothing, ceremony, and·traditional lifeways from the beginning of time. ·Additional diversions from the Sacramento River·Watershed will exacerbate an already damaged and·diminishing Delta ecosystem and ossuary and our tribes·ties to our homelands. I'm here today because your decisions·regarding the Sites Reservoir have a direct impact on·the health, life expectancy, and future of our tribe. Our waterways must be managed holistically.	
34-2	·In addition, true and meaningful tribal·consultation has not occurred.· In fact, my tribe was·not consulted.· And President Biden's November 12th memo, heads of federal agencies and departments, he·emphasizes the importance and intentions of advancing·equity for Indigenous people, with commitments to ensure that federal agencies conduct regular, meaningful, and·robust consultation with tribes.· To date, consultation·efforts have been neither regular, meaningful, nor·robust.· We urge the Commission to not move forward with·this project.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS and the Master Response 1 section titled Public Review and Outreach Process for the RDEIR/SDEIS regarding public outreach. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, for information on how requirements for Tribal coordination and consultation have been met for the Project.
35-1	Hi. I'm Nicole Panditi. I am just a citizen who is concerned by this project. I urge the Commission not to move forward with this project. As the very eloquent speaker before me stated, it's completely unacceptable to overrule native burial grounds, native ceremonial sites, and create, basically, what would be a water project that's not needed or helpful and would threaten the drinking sources, the drinking water quality of so many other Californians. This project is -- it's not needed and -- and it should not move forward. That's all I have to say. Thank you.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives. Please see Master Response 4, Water Quality, regarding the methods of evaluation and impact analyses related to water quality, as well as reservoir water quality management and operation of the I/O Works for reservoir releases to preserve downstream water quality. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, for a discussion of tribal coordination and outreach and

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		Chapter 23, Tribal Cultural Resources, regarding the Project's impacts on ceremonial and burial sites, as well as mitigation measures.
36-1	So my primary two main comments, and I'll respond in more detail in written form, but the first is regarding the public engagement process at this point. It's unfortunate we are in an area of Covid, so a lot of -- it was truncated, some Zoom, and a lot of constituents weren't able to participate. And then -- so I think that it'd be good, especially as this goes forward, to acknowledge that.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
36-2	The other general comment, really regards the potential benefits of the Delevan intertie in that it actually would provide -- have possibility of actually providing offset for the lost drainage coming from Funks Creek and Stone Corral Creek at that point. As you mention, the Delevan Refuge is there, but you also have the Colusa Refuge and you have all the riparian habitat and ground -- ecosystems below that area.· So there is gonna be impact if you actually don't allow the water to come from Stone Corral and Funks.	The Delevan Facility on the Sacramento River and the associated conveyance pipeline were part of the project evaluated in the 2017 Draft EIR/EIS but are not part of the Project evaluated in the EIR/EIS. Please see Master Response 9, Alternatives Development, for discussion of the refinements in the facilities between the RDEIR/SDEIS Alternatives 1, 2, and 3 and the alternatives evaluated in the 2017 Draft EIR/EIS.
36-3	In the area of the Colusa Basin Drain, from -- they're natural intakes into the Colusa Basin Drain to Dunnigan. You know, my concern is that not only water right holders, but just the environmental impact of not having those seasonal flows, and how that relates to the recharge and actually water quality in generally in -- in the subbasin, because there is a known upwelling, and the upwelling is predominantly salt water, which has a hydro chemical reaction to redox, if you have lowering of water levels, the oxidation effect of previously cloning salt -- salt water actually can lead to desorption of trace metals, like, around the Sutter Buttes, we have an arsenic problem.	Impacts on groundwater quality are analyzed in Chapter 8, Groundwater Resources. Impact GW-1 finds that seepage from the reservoir would result in improvements in shallow groundwater quality near the reservoir by reducing salinity. Impact GW-2 finds that, based on high-flow conditions and modeling, operational diversions would have a less-than-significant impact on groundwater recharge or supplies under Alternatives 1, 2, and 3 and would result in higher groundwater in the shallow aquifer along the western margins of the Colusa Subbasin in the immediate vicinity of Sites Reservoir.
36-4	I am very concerned about groundwater quality degradation, especially from the public supply system of Williams. We have both the sustainability, but also a quality issues. PDS level is a possibility as it creates metal impacts.	Please see response to comment 36-3 for a discussion of Project-related groundwater impacts.

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37-1	Yes.·Sorry.·It wasn't letting me for a second.· I just wanted to state for the record that I think there was a lot of confusion, that people thought that the California Water Commission meeting was the public comment period for this.· Because this -- the Zoom for this did not come out until later on Monday, and the California Water Commission noticed their meeting a week or two ago.· I think the public was confused about -- about this. Anyways, I'm just saying that because quite a few people have told -- messaged me that they commented yesterday thinking that it was for this meeting.· So, anyway, I just wanted to let ya'll know, I think there's a lot of confusion going on about how the public comment period for this worked in the relation to the California Water Commission.· And it might be worth doing some kind of, like, YouTube update or something to let people know·this is a different public comment period and letters·have to come in separately if you want to be on the·record, because people do not know.·And then I also wanted to state that the·amount of people that have sent in emails now is at·48,976, which just, I think, shows interest that if this·was noticed in a way that was more understandable to·people, that more people would be participating.· And·I'm not -- I'm not saying that to, like, give you all·flack or anything, it's just -- because it's before the·holidays and the California Water Commission meeting was·on the same day, a lot of people are really confused.·Yeah, so some kind of paper explaining the·difference between the different processes, I think, ·would be helpful.· And that's just a suggestion, and thank you.· I'm gonna leave this meeting now.· I just wanted to hear what the public had to say.· But it does confirm my belief that this whole process is very confusing, 'cause a lot of people told me they were·gonna do public comment, and I think they all called·into the Water Commission instead, thinking it was·this -- for Sites Res -- that it was the public comment·period.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the California Water Commission and the public review and outreach process for the RDEIR/SDEIS.
38-1	I'm calling in from Veshanwoni (phonetic)·lands, also known as Lafayette, California.· And I·really just want to say, no new dams.· Our dams are	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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	a·problem.· Part of the problem of the issues that we're·facing, dealing with water crisis, dealing with·wildfires, and I don't support any new dams or new·reservoirs for that matter.· And so I just wanted to take the time to call in and state that, and also just·to request from you to please support no new dams and no·new reservoirs in -- in the State of California.	
39-1	I strongly urge the Sites Authority and, again, to reject funding Sites Reservoir Project at a time when California salmon and other fish populations are in unprecedented collapse. The fish populations in the Bay -- Delta Estuary and Central Valley Rivers have collapsed with many species now on edge of extinction, due to the export of Delta water to agrobusiness, other water diversions in Central Valley Dam operations. The construction of Sites Reservoir in conjunction with the Delta Tunnels and voluntary agreements supported by the Newsom administration would only make a terrible situation even worse, not benefit the ecosystem, as such proponents argue. The 3200-acre Sites Reservoir would also include new diversions from the Sacramento River that would impact the Trinity River, the largest tributary of the Klamath River, the Yoorakuppa (phonetic) Valley, Karuk and other tribes dependent on the salmon and other fish as part of their livelihood and culture for many thousands of years. But the salmon populations have collapsed dramatically and we -- in recent years. The plan includes water storage for the Bureau of Reclamation, agency delivers Central Valley Project water to west lands water district, which is a major diverter of Trinity River water. Sites could cause the Sacramento River and Shasta and Trinity Rivers in Northern California to be over-drafted. Sites Reservoir would be used to deport more Northern California Delta water to San Joaquin Valley	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives. Please see Master Response 5, Aquatic Biological Resources, regarding Project benefits to fisheries. Please also see Master Response 8, Trinity River, for responses to comments and questions related the Project's effects on the Trinity River and its resources. As described in Chapter 2, Project Description and Alternatives, the Project would not affect or result in changes in the operation of the CVP Trinity River Division facilities (including Clear Creek). Reclamation would continue to operate the Trinity River Division consistent with all applicable statutory, legal, and contractual obligations. Chapter 31, Cumulative Impacts, discusses cumulative impacts on aquatic biological resources.

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	corporate agrobusiness through the Delta Tunnel, when what is needed to restore fish populations is more water for fish, not less. For the past three years, no delta smelt, once the most abundant fish in the entire Sacramento, San Joaquin River Delta have been found in California Department of Fish and Wildlife Fall Midwater Trawl Surveys, none have been found in the first two months of the four months surveyed this year. Two other surveys in the Delta turned up similar results for the delta smelt. The enhanced delta smelt monitoring study caught only one delta smelt in the 2200 Smelt targeted net tows in 2021. That compares to 49 captured in 2020 and hundreds in prior years. None were captured in the Spring of Kodiak Trawl, 2020 survey. According to fish marine biologist, Tom Cannon, this year's results indicate that delta smelt are likely extinct in the wild. The virtual extinction of delta smelt in the wild is part of a greater ecosystem crash caused by a massive water exports to corporate agrobusinesses in the San Joaquin Valley, combined with toxics declining water colony and evasive species in the Delta. Between 1967 and 2020, the State's [inaudible] Water Trawl abundance in -- induces or striped bass, delta smelt, longfin smelt, American shad, split-tailed, threadfin shad have declined by 99.7, 100.98, 98.96, 67.9, 100 and 95 percent, respectively, the diversion and export of water per Central Valley agrobusinesses' interests during a drought. It's also had a huge impact on imperial Sacramento River pop -- salmon populations, just as it had on driving the delta smelt to become virtually extinct in the wild. This year, up to 98 percent of winter run salmon juveniles in Sacramento River perished as water was delivered to water contractors, as the Bureau of Reclamation violated their own plan, the only keyhole, -- 80 percent of winter run salmon every day. But one, throughout the diversion season,	

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	not only did nearly all the winter run juveniles perish due to warm water conditions in the Sacramento this year, but the majority of adult spring run Karuk salmon and Butte Creek, over 14,500 of an estimated 18,000 fish perish due to the outbreak of these low and warm conditions. I strongly urge you to reject this project, Sites Reservoir, at a time when salmon, delta smelt, are threatened with extension. We need more water for imperial fish populations.	
40-1	I liked the consideration of three state actions – state actions taken in recent -- the extra 2021. One, is the implementation of the CV salts initiative. I'd like to consider that Sacramento – the Colusa Subbasin is now a priority basin. And if the focus is just on nitrates and is not focused on the actual concurring contaminates, which I think will be -- could be adversely impacted if there was any significant seepage from Sites.	Impacts on groundwater quality are analyzed in Chapter 8, Groundwater Resources. Impact GW-1 finds that seepage from the reservoir would result in improvements in shallow groundwater quality near the reservoir by reducing salinity. Impact GW-2 finds that, based on high-flow conditions and modeling, operational diversions would have a less-than-significant impact on groundwater recharge or supplies under Alternatives 1, 2, and 3 and would result in higher groundwater in the shallow aquifer along the western margins of the Colusa Subbasin in the immediate vicinity of Sites Reservoir.
40-2	The State -- the Department of Water Resources just adopted the human right to water in its handbook, and then you can -- any future considerations have to take into consideration human right to water. And my consider -- my concern there is, if there's adverse impact on public supply systems and domestic wells, down -- downhill from the reservoir, that that actually will impact human right to water. And since it is human right -- right and high is a beneficial use, it really should have a very high standard when it comes to potentially adverse effects and mitigation.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the Human Right to Water.
40-3	And the third [state action recently taken] is the Water Board's recent resolution on racial equity. That is tied to human right to water, but also just the economic benefits in the construction and the impacts that may have on people of color in the Subbasin, since Colusa is majority non-white residents. Colusa County is -- who are usually lower social economics, and	Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the State Water Resources Control Board's Diversity, Equity, and Inclusion Resolution and the Human Right to Water.

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	also may be even more susceptible to poor water -- water quality, like the areas. The public supply system for Grimms actually has arsenic contamination.	
40-4	My last comment, actually, is regarding the access to the public recreation space around the reservoir. I guess my question is, if you don't go ahead with the bridge, will the public really be able to enjoy the recreation? How accessible will that be on the west side of the reservoir?	As described in Chapter 2, Project Description and Alternatives, access to the recreation facilities on the west side of the reservoir would be provided via South Road under Alternative 2.
40-5	I'm supportive of the project, provided that water rights and the environment and the local economy is mitigated. And we need more -- we need more supply. And I think Colusa County should do its part for the State and for the future water sustainability of the State, but I am concerned about the issues that are raised as followed.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
41-1	On page 2-39, under "emergency release," the word "velocity" is incorrectly used to describe the flow rates. The word "flow" should be used instead of "velocity."	The units associated with the uses of "velocity" and "velocities" in the Emergency Release subsection of Chapter 2, Project Description and Alternatives, that the commenter is referring to have been updated in the Final EIR/EIS from cubic feet per second to feet per second.
41-2	The other thing I'll take this opportunity to respond to is Ali's answer to my question earlier, about the water quality control plan, and she mentioned unimpaired flow. It's actually percentage of unimpaired flow that the Water Board is planning to implement. And I believe the 55 percent -- 45 to 65 percent range is what they were planning. And the uncertainty she mentioned within that range, it does seem like there could be an alternative that would get something from that range.	Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the Bay-Delta Water Quality Control Plan updates. Please see Master Response 2, Alternatives Description and Baseline, regarding the alternatives description.
41-3	There is an inadequate range of alternatives in the EIR.	Please see Master Response 9, Alternatives Development, for an overview of the development and range of alternatives considered.
41-4	The other thing Ali mentioned is the -- that the others would take the water Sites was the only one following an approach like that if the water rights [inaudible] were not to [inaudible]. And that's not -- doesn't seem to be true, since Sites was last in line with junior water rights. It's really the inflow	Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding water rights. Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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	of the San Francisco Bay that the -- with the increased if Sites were to decrease its diversions during the peak flow times of the year.	
42-1	GARBIN:· Oh, okay.· Yeah.· Just, put in --·taking public water and putting it into a private·aquafer -- a public -- a private dam to grow rice andother -- other crops that shouldn't be grown in the·middle of the desert seems pretty stupid, and it seems·like we're prioritizing -- prioritizing one industry over another.· We're prioritizing the interest of·wealthy farmers and those who are connected against the·interest of the environment, the fish populations. ·People enjoy, you know, natural flowing waters, and·those who don't have quite the connections of the·farmers seem to have -- where most -- I guess, from what·I understand, most of this water's going to be going to. ·And very much against taking public water and putting it·on private property for private people to make a profit·on, especially when they're growing crops that probably·shouldn't be grown where they're being grown.· So,·that's pretty much my thoughts.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
43-1	DANIELLE FRANK:· Hi.· My name is Danielle Frank.· I'm calling from the Hupa Valley Indian·Reservation, where I've been raised since childhood and·I'm a tribal member.· I'm calling because this proposed·project cannot go through.· There are just too many·issues with it. For starters, not the -- not only does it·endanger the salmon population that is already·depleting, thanks to diversion and other issues, it will ·also flood three creeks, further harming the salmon runs·and harming an important food source.· For Natives ---for Native people, salmon holds a cultural significance·that native -- non-natives can't even begin to grasp. This is more than just environmental·injustice.· It's also an injustice against a group of·people who have been discriminated against by this·country since the beginning of modern day American·civilization.· Not only is this project putting our·sacred salmon in danger, it will also be going through·three different -- it will be going through different·ceremonial sites.· It will be digging up Native American·Cer -- Native -- Native American cemeteries,	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS and the Master Response 1 section titled Public Review and Outreach Process for the RDEIR/SDEIS regarding public outreach. Please see the discussion of the merits of the Project and alternatives in Master Response 2, Alternatives Description and Baseline, for information regarding the specific circumstances under which diversions to Sites Reservoir would occur. The impact analysis in Chapter 11, Aquatic Biological Resources, includes actions to increase survival of anadromous fish populations. Additional discussion of the benefits to anadromous fish can be found in Master Response 5, Aquatic Biological Resources. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the Authority's and Reclamation's

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	which·the -- is -- I kind of -- I'm not sure how that's okay·with people to be digging up bones of our ancestors that·we've laid to rest. And it -- it -- it goes against everything·that Indian people stand for, and I'm urging you guys to·listen to the Native voices that have come to speak·today, because we -- that's how -- that's the only way·that these salmon population are gonna be saved, and·they do hold more of a significance to us than just food·source.· So we -- we're here to speak for them.· And I·thank guys for your time and for your consideration in·listening to this.	consultation and engagement with Tribes, as well as Reclamation's fulfillment of federal trust obligations.
44-1	This project gives me real pause, because it affects almost certainly a place that is incredibly dear to me. I look at the history of the Klamath Dam removal fight and how it has dragged on and on and on and these kinds of projects, once they're done – I appreciate that a lot of hard work has gone into this. ·A lot of staff members have worked very, very hard on putting this proposal together.· As hard as it is to do, it's even harder to undo, and we should think about that in the event that we realize years down the line that there was some kind of mistake in our calculations, that our knowledge of ecology grows, our knowledge of fishery science grows.· How would we undo something like this, right?· What is -- what is the undo strategy?· And I think history shows that it's incredibly hard to undo these things.· And the bar for necessity of something like this happening, should thus be set just incredibly high, because it is nearly impossible to reverse once it happens.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
44-2	I would -- like the previous speaker – like to see, for a project like this, hard, explicit,· legal, enforceable guarantees for tribes in the Trinity and the Klamath.· As she said, the history of discrimination is just terrible in this -- in this region. If you look at photos from 100 years ago of the Klamath, people described the river flowing backwards from the amount of fish in it.· And every year since, you know, white people came, the situation gets worse.· The overall trajectory is catastrophic.	Please see Master Response 8, Trinity River, for responses to comments and questions related to the Project's effects on the Trinity River and its resources. As described in Chapter 2, Project Description and Alternatives, the Project would not affect or result in changes in the operation of the CVP Trinity River Division facilities (including Clear Creek). Reclamation would continue to operate the Trinity River Division consistent with all applicable statutory, legal, and contractual obligations. Please see Master Response 7, Tribal Coordination,

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		Consultation, and Engagement, regarding the Authority's and Reclamation's consultation and engagement with Tribes, as well as Reclamation's fulfillment of federal trust obligations.
44-3	My grandfather saw things that my father would not be able to see.· My father saw things that I won't be able to see.· I see things that I'm pretty sure my son is not gonna be able to see.· I understand the allocation issues are very complex here.· I understand that we need farms.· I understand that farms need water. But I would like to see -- and I know this is way beyond the province of the decisions that this group makes -- but I would like to see a push for conservation. Why do we not have public-needed campaigns about conservation awareness? The cheapest water is the water that we already have.· And if we just conserved it a little more, we could, you know, continue to have the, you know, water flowing to residential customers and agricultural customers, and everyone who needs it without destroying the way of life of the people who've been on this river for millennium.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
44-4	When I see the amount of money that it costs to build something like this, why are -- do we not have state-wide fines for wasting water?· Why do we not have a state-wide increase in the cost of water with tax credits, so that it's not regressive for poor people?	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
45-1	Yes.· I just spoke, but I wasn't able to finish one simple sentence, and this is all I·want to leave with you -- or actually two sentences.·Now is not the time for you to keep going forward with·Sites Reservoir.· Now is the time to take decisive·action, to stop species extinction.· Please remember, extinction is forever.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
46-1	I live in Mountain House, California. I drive over the California Canal and the Mendoza Canal every day, and I just wanted to -- from my perspective, just reiterate that we should be listening more to Native voices when it comes to land management and water management. I just wanted to chime in	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS and the Master Response 1 section titled Public Review and Outreach Process for the RDEIR/SDEIS

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	there and just kind of let everyone know that this is something that is final to us all, and I think we should be looking to them for leadership.	regarding public outreach. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, for information on how requirements for Tribal coordination and consultation have been met for the Project.
47-1	The only thing that I want to add· is that the format for this, while it's good for those people who were able to find out about -- I found out about this by -- via email. I'm quite confident that if this was actually widely publicized in communities that would be directly effected by this onerous attempts, you'd have a lot more people stepping up and expressing their opposition to this.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
47-2	This plan's gonna hurt a lot of people, the environment, salmon runs, Indigenous people, poor people, you know, who rely on -- you know, are living in these areas where wells are gonna be going dry and all the rest of it from the theft of this water.· And I think if you had reached out more to the community who is gonna be directly affected by this offense, that you would have a -- a much greater turnout of folks in direct opposition of this.· And, you know, it's just -- sad that -- that those people who, I think, are gonna be really damaged by this don't really know what's happening.· And I don't know if that's by design, by accident, but it's not right.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the adequacy of public outreach and acknowledgement of community concerns and recommendations. Please also see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives. The Project would not affect existing groundwater wells, as identified in Master Response 1. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding coordination with Tribes for the Project.
47-3	This is a huge expense.· It will affect large parts of Cal -- of the State. It will affect people's enjoyment of the outdoors. It will affect species, not only the salmon, many species that rely on water that's gonna be put into a -- as I understand -- a private reservoir for almond and -- and rice production, crops that probably shouldn't be growing in the middle of a desert. It's just wrong the way this is being handled, and more people need to know about it, and there should be a greater outreach to those folks who are gonna be directly affected in a negative manner.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives. Please also see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the adequacy of public outreach.
48-1	I oppose the sites reservoir project because it would have an adverse effect on norcal rivers.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives and the adequacy of the impact analysis in the RDEIR/SDEIS. Chapter 5, Surface Water

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		Resources, presents the impact analysis for rivers that would potentially be affected by the construction and operation of the Project.
49-1	Commission Chair Teresa Alvarado of San Jose, the Regional Vice President-South Bay/Central Coast for Pacific Gas and Electric Company, ran the Commission's meeting. Environmental justice and conservation groups and Tribal leaders were not only extremely disappointed with the decision, but upset with the treatment of California Tribal leaders at the meeting. "We're utterly appalled by how Shingle Springs Band of Miwok Vice Chair Malissa Tayaba was treated," said Sierra Club California organizer Caty Wagner. "Earlier in the comments, they said that they would call on Tribal elders first. Eventually, they cut commenters to 2 minutes rather than 3." This was done without proper explanation in the opinion of the Tribal elders. As Vice Chair Tayaba was speaking about how her Tribe has not been adequately consulted in the process, Commission Chair Alvarado spoke over her several times and then cut her off. The Tribe's TEK program manager, Krystal Moreno, then addressed the situation, noting how Vice Chair Tayaba's position is akin to the Vice President of the United States, and finished reading Tayaba's comment. "This was incredibly disrespectful and appalling. There was no apology or even acknowledgment by the Commission about what just happened. I am floored by that behavior," Wagner stated. Below is the comment that Tayaba delivered at the meeting. She was forced to stop her commentary at the section, where, ironically, she was going to talk about the lack of Tribal Consultation, as required by state and federal law, on the Sites Project: "Good Morning Commissioners, thank you for the opportunity to speak. I am Malissa Tayaba, Vice Chair of the Shingle Springs Band of Miwok	The comment letter refers to a meeting held by the California Water Commission on December 15, 2021. The topic of the meeting was the Commission's approval to maintain the Sites Reservoir Project's eligibility for funding under Proposition 1. The California Water Commission is a separate and distinct entity from the Authority. The Authority and Reclamation were not responsible for conducting or managing the California Water Commission meeting. At the two public meetings held on the RDEIR/SDEIS, the Authority provided additional time for speakers. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for information about the California Water Commission process. The commenter also states that the Shingle Springs Band of Miwok Indians was not consulted on the Project. Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, and Chapter 23, Tribal Cultural Resources, which describe the Authority's extended outreach to tribes, including the Shingle Springs Band of Miwok Indians in June 2021. The outreach included a letter sent via the U.S. Postal Service with a certified return receipt, and an email follow-up.

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	Indians. The Shingle Springs Band of Miwok Indians derives from both Miwok and Nisenan lineage with major village sites in Sacramento, the Delta and beyond. The Tribe's ancestral homelands span seven counties, including Sutter, Yuba, Yolo, Sacramento, El Dorado, Placer & Amador. The interconnectivity of the land, the waterways, the people, the plants, animals and resources is deep, reciprocal, and timeless. The ancestral waterways are the life blood of the Tribe and include the Sacramento River, American River, Feather River, Bear River, Consumnes River and the watersheds therein. The Shingle Springs Band of Miwok Indians were originally displaced by colonization, the mission system, disease brought by the fur trade, the arrival of John Sutter, the genocidal violence of the gold rush, the political violence of California statehood andanti-Indian laws and policies. Delta ancestral homelands were lost to reclamation and colonization in the nineteenth century, and we have been kept out by private land ownership and state and federal water resource development in the Delta region. The Delta is a diminishing resource that once stretched at least as far north as the confluence of the Sacramento and Feather Rivers in Sutter County (near the Nisenan village of Wallok). It is being further diminished, along with its cultural and traditional resources that tribes have utilized from the Delta for food, medicine, transportation, shelter, clothing, ceremony and traditional lifeways from the beginning of time. Additional diversions from the Sacramento River watershed will exacerbate an already damaged and diminishing Delta ecosystem and estuary , and our tribe 's ties to our homelands.	

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	I am here today because your decisions regarding the Sites Reservoir have a direct impact on the health, life expectancy, and future of our tribe. Our waterways must be managed wholistically. " After several more speakers, TEK Project Leader Kiystal Moreno was able to read the final paragraph of Tayaba's presentation. Before reading it, Moreno said, "I was originally not going to make a statement , but after witnessing how inappropriately my boss and Vice- Chair of the Tribe was treated, I felt a statement was necessary. Earlier in the meeting you were going to take tribal representatives first, I believe, and provide them time to speak. You cut off Malissa Tayaba, who again is Vice Chair of the Shingle Springs Band of Miwok Indians. She is equivalent to the Vice President of the United States. She should have been allowed time to complete her statement. As a result, I will complete it for her." Moreno then read the last paragraph regarding the lack of Tribal consultation on plans to fund and build Sites Reservoir: ·· "In addition, true and meaningful tribal consultation has not occurred. In fact, my tribe was not consulted at all. In President Eiden 's November 12th memo heads of federal agencies and departments, he emphasizes the importance and intentions of advancing equity for indigenous people with commitments to ensure that federal agencies conduct 'regular, meaningful and ROBUST consultation' with tribes. To date, consultation efforts have been neither regular, meaningful, nor robust. We urge the commission to not move forward with this project. Thank You. " Here is the link to the recording. Tayaba's statement is at 2:41:22 and Moreno's statement is at 2:48:24: https://www.water-ca.com/archives.html	

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	Members of other California Tribes also indicated their opposition to the Sites Reservoir project because of the impact that it would have on salmon populations and native people. "The rivers are barely surviving," said Margo Robbins, a member of the Yurok Tribe on the Klamath River. "They can barely sustain life as it is. I would hope that you would take into consideration the huge detriment that this will be to the salmon and native people. We have been working to restore flows to help water quality, and to bring salmon back over the dams and back to native lands for salmon survival and Tribal people," explained Pit River Tribal member Morning Star Gali regarding Sites Reservoir in a press release by the environmental group Save California Salmon. "California is losing the salmon and our clean water. This is an issue of justice. We already have over a thousand reservoirs, and more water allocated than exists in California. This is called "paper water"! An environmentally destructive private reservoir being built in an area that is important to native people is a step in the wrong direction."	
49-2	The massive opposition to the project by one commenter after another was underlined by the submission to the Commission of a petition created by Save California Salmon -containing nearly 50,000 signatures - urging them to reject the proposed Sites Reservoir project.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for a discussion of commenter opposition to the Project.
49-3	Friends of the River ("FOR"), a Sacramento-based non-profit that has been engaged in tracking and opposing Proposition 1 funding for surface water storage projects since 2014, was also disappointed with the results of the commission meeting. "After having to deal with essentially the same destructive projects for decades, I found the Commission's 'rubber stamp' approach during the meeting particularly concerning," noted Ron Stork, FOR's Senior Policy Advocate. "The Commission was given the authority under Proposition 1 to do a rigorous technical review of consequential water projects, and it was clear they were not willing to do so."	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the California Water Commission and its involvement in the Project. Note that the California Water Commission process with regard to the provision of funding for the Project is distinct from the lead agency processes by the Authority and Reclamation in deciding whether and, if so, how to approve the Project within their statutory authorities.

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	In response to the Commission vote, Brandon Dawson, director of Sierra Club California, issued the following statement: "The Commission's actions today will harm California communities, ecosystems, lands, and wildlife. These two destructive projects provide marginal public benefits but massive destruction, such as depleting salmon populations and flooding precious California lands. The climate crisis and its impacts on California water supplies demand that we move away from large storage projects like these, and start investing in local and sustainable water conservation, efficiency, and recycling programs and technology.	
49-4	Even more egregious than the Commission's vote was its rejection of the public comments opposing the project, and its treatment of tribal representatives who will be adversely affected by the project. Tribal members continuously voiced concerns about the lack of tribal consultation during the meeting's public comment portion, and were resoundingly ignored. Every member of the public deserves the time and opportunity to voice their opinion without fear of being shut down."	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding information related to the California Water Commission and its involvement in the Sites Reservoir Project. Please also see Master Response 7, Tribal Coordination, Consultation, and Engagement, for Authority and Reclamation activities associated with tribes. The Authority and Reclamation take very seriously the concerns raised by tribal representatives about the Project.
49-5	The 13,200 acres Sites Reservoir would include new water diversions from the Sacramento River that could also impact the Trinity River, the largest tributary of the Klamath River, according to Save California Salmon. The Yurok Hoopa Valley, Karuk and other tribes have depended on the salmon and other fish as part of their livelihood and culture for many thousands of years, but the salmon populations have collapsed dramatically in recent years. The plan includes water storage for the Bureau of Reclamation, the agency that delivers federal Central Valley Project water to Westlands Water District, the major diverter of Trinity River water. Sites could cause the Sacramento River and Shasta and Trinity Reservoirs to be over- drafted. Sites Reservoir would be used to divert more Northern California water to San Joaquin Valley agribusiness for export crops like	Please refer to Master Response 8, Trinity River, which explains that operation of the Project would not result in impacts on the Trinity River. Trinity River origin water is water appropriated under Reclamation's CVP water rights and would not be stored in Sites Reservoir under the Project. The Project does not propose and would not result in any statutory, legal, contractual, or operational changes in the Trinity River system. Please refer to Master Response 5, Aquatic Biological Resources, which discusses the Project's impacts on aquatic organisms including delta smelt and winter-run Chinook salmon. Master Response 5 also discusses the benefits of the Project including those that may occur from reservoir releases to Colusa Basin Drain/Yolo Bypass, which have

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	almonds through the Delta Tunnel when what is needed to restore fish populations is more water for fish, not less. For the past three years, no Delta smelt, once the most abundant fish in the entire Sacramento-San Joaquin River Delta, have been found in California Department of Fish and Wildlife's "Fall Midwater Trawl" survey. Two other surveys on the Delta have turned up similar results for the Delta smelt, with only 1 (one) smelt captured between the two surveys. "This year's results indicate that Delta smelt are likely virtually extinct in the wild," said California Sportfishing Protection Alliance fishery biologist Tom Cannon. The virtual extinction of Delta smelt in the wild is part of a greater ecosystem crash caused by massive water exports to corporate agribusiness interests in the San Joaquin Valley, combined with toxics, declining water quality, and invasive species in the Delta. The diversion and export of water for Central Valley agribusiness interests during a drought has also had a huge impact on imperiled Sacramento River fish populations, just as it has had on driving the Delta smelt to become virtually extinct in the wild. This year up to 98 percent of winter-run Chinook salmon juveniles in the Sacramento River perished as water was delivered to water contractors as the Bureau of Reclamation violated their own plan to only kill 80 percent of winter run salmon every day but one through the diversion season. Not only did nearly all of the winter-run Chinook salmon juveniles perish due to warm water conditions in the Sacramento River this year, but so did the majority of adult spring-run Chinook salmon on Butte Creek - over 14,500 of an estimated 18,000 fish - before spawning this year, due to an outbreak of disease in low and warm water conditions.	the potential to enhance food web productivity in the north Delta for delta smelt, and temperature-related benefits to anadromous fish achieved through operational exchanges. Master Response 3, Hydrology and Hydrologic Modeling, describes how Shasta Lake exchanges would occur in years when forecasted temperature-based mortality of early life stage winter-run Chinook salmon (Oncorhynchus tshawytscha) would be reduced by a Shasta Lake exchange. In the spring of Shasta Lake exchange years, Sites Reservoir would release water for CVP uses in lieu of Shasta Lake. As Sites Reservoir is releasing for CVP uses, Shasta Lake releases would be reduced, preserving Shasta Lake storage and its cold-water pool through the spring (April through June).
49-6	After the Commission's votes moving the project forward, FOR's Resilient Rivers Director Ashley Overhouse, emphasized, "While it was a setback, this is not the end. The Commission noted that 'this is just the beginning' and there is 'plenty of time before funding allocations.' We agree, and believe	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the California Water Commission process and its relationship to the Project.

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	these projects will not hold up under more rigorous scrutiny. Friends of the River and our allies will continue to fight for healthy rivers and sustainable water solutions like water recycling and groundwater recharge in 2022. We must continue to engage with the Commission and other stakeholders to ensure our state achieves a resilient water future in the face of climate change," Overhouse concluded. Please keep me informed of any further action by the Commission regarding this project.	
50-1	We stand with the Native Americans who oppose the environmental damage that would be caused by the reservoir.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
51-1	This is my 45th letter to the CWC. My first letter was March 2017. Ms. Shoemaker and Commissioner Curtin are the only ones on that letter that remain on the Commission today. Please add this public comment to the 19 Jan 2022 CWC meeting agenda under item 7 public comment. I watched the Dec 2021 meeting with so many public comments including me opposing Sites off stream reservoir continuing eligibility. A petition from Save California Salmon was presented to the CWC Commissioners with 50,000 signatures opposing Sites off stream reservoir. Commissioners unanimously approved Sites. I was devastated. I said I am missing something basic. I cast a wide net for public records of Form 700 Statement of Economic Interests to Natural Resources, Department of Water Resources, Fish and Wildlife, Fair Political Practices Commission and Los Vaqueros off stream reservoir JPA. Many of my public records requests bounced but I just put the requests back in the queue with another agency.	This comment letter does not contain comments on the RDEIR/SDEIS; it is directed to the "California Water Commission Commissioners, Los Vaqueros Reservoir Joint Powers Authority, Staff and the Public." Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the California Water Commission.
51-2	There are big farms on Form 700s so agriculture is represented including cannabis. There is not 1 fisherwoman or fisherman on Form 700s. I do not smoke or drink and I think too many people during the Covid lockdown have over indulged to the point where it is not healthy for them or our society so I am not a fan of water for grapes or marijuana. With the	This comment letter does not contain comments on the RDEIR/SDEIS; it is directed to the "California Water Commission Commissioners, Los Vaqueros Reservoir Joint Powers Authority, Staff and the Public." Please see Master Response 1, CEQA and NEPA Process, Regulatory

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	unreliability of rain and snow in California I think farmers should have the sense to know they need water to grow crops and hitch up their wagon and move to the Mississippi river basin and not let the Golden Gate hit them in the butt on the way out. I know there are a couple of Commissioners on the CWC with family farms that will read this but their trajectory is unsustainable. 50% of off stream reservoir dams paid for by the State and 25% by the Feds is wasteful. Farmers have overdrafted groundwater, settling has damaged their canals. I am not paying for canal repairs and the recent $9 Billion water bond that failed shows the voters are not paying. Agriculture is 2.6% of California GDP. Apple, not the fruit, but the Cupertino company is the economic engine of California and the World and iPhones are made in China. Manufacturing left the USA in the late 1980s, Agriculture can move to the Mississippi river basin where there is an abundance of water today.	Requirements, and General Comments, regarding the California Water Commission.
51-3	I provided public comment at the January 2022 Los Vaqueros Reservoir JPA Board Meeting and they convinced me they do not have their act together and that is going to be a huge waste of money. Their plan is to lop off the top 101 feet of the 2011 dam raise for the 160,000 acre feet expansion and cart all that debris to Cowboy Canyon, one of the arms to the reservoir. Gate 5 was stuck in 2011, CCWD knew about it then and the most recent 2021 Division of Safety of Dams (DSOD) inspection shows Gate 5 could not be opened because they were worried they could not close it again. I found the JPA's Chair condescending, impulsive and out of control of her Zoom meeting. My woodworking and astronomy club meeting hosts can mute others without barking at them to mute themselves. I was on mute when my dogs were barking. It wasn't me.	This comment letter does not contain comments on the RDEIR/SDEIS; it is directed to the "California Water Commission Commissioners, Los Vaqueros Reservoir Joint Powers Authority, Staff and the Public." Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the California Water Commission.
51-4	I was invited to a webinar on California's budget surplus and Natural Resources $750,000,000 ask of the legislature. The moderator did not ask my question for the panel but you can read it in this screenshot.[Exhibit 1]	This comment letter does not contain comments on the RDEIR/SDEIS; it is directed to the "California Water Commission Commissioners, Los Vaqueros Reservoir Joint Powers Authority, Staff and the Public." Please see Master Response 1, CEQA and NEPA Process, Regulatory

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		Requirements, and General Comments, regarding the California Water Commission.
51-5	[Exhibit 1: Screenshot of Zoom meeting window with comment provided by Leland Frayseth]: Manufacturing moved outside the USA and California in the 1990's. California's and the world's largest company Cupertino-based Apple makes iPhones in China. California Ag consumes so much water we do not have and it is highly subsidized. How do we get California Ag moved to the Mississippi river basin where there is an abundance of water. I like to fish Steelhead and Salmon in the Sacramento river basin.	This comment letter does not contain comments on the RDEIR/SDEIS; it is directed to the "California Water Commission Commissioners, Los Vaqueros Reservoir Joint Powers Authority, Staff and the Public." Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the California Water Commission.
52-1	I am writing in opposition to the proposed Sites Reservoir. I live in Salyer, CA, and believe that water in Northern California needs to stay in the rivers to support healthy fish populations and ecosystems. We already have 5X the water allocated than exists in the Sacramento and Trinity rivers, Sites Reservoir will exacerbate this dilema. This project would flood Three Creeks and degrade salmon runs that are already struggling.	Please see the discussion of the merits of the Project and alternatives in Master Response 2, Alternatives Description and Baseline, for information regarding the specific circumstances under which diversions to Sites Reservoir would occur. As described in Chapter 2, Project Description and Alternatives, the Project would not affect or result in changes in the operation of the CVP Trinity River Division facilities (including Clear Creek). The impact analysis in Chapter 11, Aquatic Biological Resources, includes actions to increase survival of anadromous fish populations. Additional discussion of the benefits to anadromous fish can be found in Master Response 5, Aquatic Biological Resources.
52-2	I am also concerned with the harm and disrespect this project would have towards many of our indigenous communities, including the flooding of cemeteries and ceremony sites.	Potential impacts on cultural and Tribal cultural resources are analyzed in Chapter 22, Cultural Resources, which acknowledges that impacts on archaeological resources would be significant and unavoidable under Alternatives 1, 2, and 3, and in Chapter 23, Tribal Cultural Resources, which acknowledges that impacts on Tribal cultural resources would be significant and unavoidable under Alternatives 1, 2, and 3. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the Authority's and Reclamation's consultation and engagement with Tribes, as well as Reclamation's fulfillment of federal trust obligations.

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52-3	Further, I think that the $816 million dollars of California taxpayer money should not be spent supporting dams that will be privately owned and degrade drinking water for those downstream. Sites Reservoir is not a solution, it is the continuation of historical policy blunders and water mismanagement and a project that should be denied.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
53-1	Hello, please don't allow sites reservoir to further damage the environment. California already has over 1400 reservoirs, or dams and 5 times more water is allocated than actually exists in the Sacramento and Trinity rivers.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
54-1	I am writing to provide a comment about the proposed Sites Reservoir off the Sacramento River. I am strongly opposed to this reservoir. This reservoir would divert water from the Sacramento River, water which the river urgently needs for the ecosystem to keep functioning. The reservoir would have significant negative impacts on salmon runs, which are important to both Native American tribes and commercial fishermen. Additionally, the reservoir would likely result in decreased drinking water quality for millions of Californians. California must place more emphasis on protecting the natural environment. Please stop Sites Reservoir.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives. The impact analysis in Chapter 11, Aquatic Biological Resources, includes actions to increase survival of anadromous fish populations. Additional discussion of the benefits to anadromous fish can be found in Master Response 5, Aquatic Biological Resources. Please see Master Response 4, Water Quality, regarding impact analyses related to water quality, as well as reservoir water quality management and operation of the I/O Works for reservoir releases to preserve downstream water quality.
55-1	As a non-indigenous, white resident of Southern California, I want to express my opposition to the Sites Reservoir off of the Sacramento River. I have a Masters in Environmental Science and Policy from Northeastern University, and this is an ecological disaster. California's water shortages are only exacerbated by new dams and reservoirs, especially when one of their main functional purposes is to support wasteful and water intensive agriculture.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
55-2	Additionally, the negative impact of this reservoir on indigenous land is both unconscionable, and highly disruptive to the state's goals of environmental sustainability. Indigenous communities and the salmon populations are incredibly important to regenerating the health of	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS and the Master Response 1 section titled Public Review and Outreach Process for the RDEIR/SDEIS

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	California's forests, which are suffering from poor management and years of fire suppression, aided by poor water management (which this reservoir would continue).	regarding public outreach. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, for information on the federal government and its relationship with Indian Trust Assets.
56-1	I do not support the creation of a new reservoir. It is not needed and it is not in the best interest of all Californians. Please stop privatizing public resources like water. Water is life	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
57-1	As water is rising in the oceans consider desalination: 1) solar 2)Evaporation distallation 3)Survival on line pervaporation Climate change could work to water solutions.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS.
58-1	To whom it may concern The Maxwell Fire Protection District serves the proposed site for the sites reservoir and will be the primary responding agency for all emergencies that accrue during construction of the facility and as well during the operation of the facility. Curranty the MFPD is only staffed from 7am to 5pm 7 days a week. Do to the increase of people and traffic that this project will create we will be seeing a significant increase in call volume. To handle the increased number of calls the MFPD will need to be staffed 24/7 with at least one person at the station at all times. This would require that we hire two more full time fire fighter/emt starting as soon as construction begins. During operation of the reservoir part time staff will be need as we are expecting our call volume to increase substantially based on the number of visitors stated in your report.	Chapter 26, Public Services and Utilities, Section 26.2.1.2, Fire Protection, describes the existing setting for fire protective services in the study area. The text has been updated in the Final EIR/EIS to reflect the newer information provided by the commenter. The text edits do not change the impact determinations or conclusions in the chapter. Emergency access for emergency responders is analyzed under Impact TRA-4 in Chapter 18, Navigation, Transportation, and Traffic, and emergency response is discussed in Chapter 26, Impact UTIL-1. The Authority will work with emergency service providers, including first responders, during construction and operations, as explained in Chapter 18, Impacts TRA-1 and TRA-4; Chapter 26, Impact UTIL-1; and Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. Appendix 2D describes the development and implementation of a construction equipment, truck, and traffic management plan (BMP-16, Development and Implementation of a Construction Equipment,

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		Truck, and Traffic Management Plan (TMP)) during construction. The Authority would develop the traffic management plan in coordination with the applicable jurisdictions, including local agencies for local roads, transit providers, and rail operators, where applicable. Construction notification procedures would be provided for Colusa, Glenn, Tehama, and Yolo Counties' services as needed (i.e., police, public works, fire departments). Chapter 26, Public Services and Utilities, Section 26.2.1.2, Fire Protection, describes the existing setting for fire protective services in the study area. The text has been updated in the Final EIR/EIS to reflect the newer information provided by the commenter. The text edits do not change the impact determinations or conclusions in the chapter. Emergency access for emergency responders is analyzed under Impact TRA-4 in Chapter 18, Navigation, Transportation, and Traffic, and emergency response is discussed in Chapter 26, Impact UTIL-1. The Authority will work with emergency service providers, including first responders, during construction and operations, as explained in Chapter 18, Impacts TRA-1 and TRA-4; Chapter 26, Impact UTIL-1; and Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. Appendix 2D describes the development and implementation of a construction equipment, truck, and traffic management plan (BMP-16) during construction. The Authority would develop the traffic management plan in coordination with the applicable jurisdictions, including local agencies for local roads, transit providers, and rail operators, where applicable. Construction notification procedures would be provided for Colusa, Glenn, Tehama, and Yolo Counties' services as needed (i.e., police, public works, fire departments).

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		Likewise, Appendix 2D describes the development and implementation of the Recreation Management Plan prior to and during operations. One of the purposes of the Recreation Management Plan is to …describe the coordination with Glenn and Colusa Counties to support emergency services at the recreational facilities and will describe requirements for fire suppression in the recreation areas." The Authority will be responsible for maintaining fire-suppression equipment (e.g., fire extinguishers, fire blankets) at recreational facilities, as well as in the administrative buildings and all Authority vehicles. In addition, Authority employees will be trained in fire-suppression techniques and use of all fire-suppression equipment at least once a year and in documenting the training. Text has been added to Section 26.3, Methods of Analysis, of the Final EIR/EIS acknowledging the implementation of the Recreation Management Plan and the Authority's support of emergency service providers, including first responders during operations. As noted, the text revisions do not change conclusions or impact determinations identified in the impact analysis.
59-1	I was hoping today I could the address where people might send their comments on the project. We have: Alicia Forsythe, Sites Project Authority, at 916-880-0676, aforsythe@sitesproject.org Wanted to make sure this was still accurate, and then also wanted to know if comments postmarked up to Jan. 28 would still be accepted past Jan. 28 or if no further mail be accepted?	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
61-1	I strongly oppose the proposed Sites Reservoir in Northern California. The project will flood a 13,200 acre area that contains valuable habitat and divert additional water out of the Sacramento River basin, without preserving sufficient flows for Salmon species and Delta smelt.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives. Please see Master Response 5, Aquatic Biological Resources, regarding the project benefits to fisheries, and flow and mitigation measures.

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	"It is horrifying that we have to fight our own government to save the environment." -- Ansel Adams	
61-2	The Sites Reservoir project would not produce much in the way of new water to meet the state's water demand. If built today, Sites Reservoir would increase California's water budget by a paltry 1%. But it will cost taxpayers billions of dollars, harm fish and wildlife habitat, and flood or degrade public lands that are visited by thousands of people.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
61-3	Once again, the government is proposing to allow the destruction of public land for private profit. The reservoir would be owned by the Sites Project Authority, an entity made up mainly of State Water Project (SWP) water contractors and irrigation districts. The authority is already offering new water rights in watersheds where five times more water is allocated than exists to powerful water districts, such as the Metropolitan Water District (MWD). A previously filed water rights application for the Sites project asked for 3 million acre feet of water a year.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
61-4	The proposal includes inundating four creeks and adding new diversion pumps from the Sacramento River in Red Bluff. It does not include protections for the Trinity River or Upper Sacramento River salmon, nor for the Tribes and fishermen that depend on 2658 them despite the fact it will lower flows and impact water quality during low-water years. Water rights held by Tribes and counties, and flows to advert fish kills in the Klamath River, are currently not protected in the Sites proposal.	Please see Master Response 8, Trinity River, regarding the Trinity River. Please see Master Response 5, Aquatic Biological Resources, regarding the Project benefits to fisheries, and flow and mitigation measures. Please also see Master Response 7, Tribal Coordination, Consultation, and Engagement.
61-5	For years, the Bay-Delta ecosystem has been severely depleted of freshwater flows that has led to the loss of natural habitat for species and reduced the livelihood of residents in Delta communities. This project will hasten the decline of the Delta. In theory, these dams are supposed to mainly divert and store "surplus" water in winter and summer months, but they would also increase diversions and warm river temperatures in other times of the year. There is no "extra" water in this part of California, where	Please see the discussion of the merits of the Project and alternatives in Master Response 2, Alternatives Description and Baseline, for information regarding the specific circumstances under which diversions to Sites Reservoir would occur. Please see Master Response 8, Trinity River, for responses to comments and questions related to the Project's effects on the Trinity River and its resources. As described in Chapter 2, Project Description and Alternatives, the

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	up to 75% of the salmon habitat has been blocked by dams. Fisheries science has now proven that high flows during winter and spring are needed if salmon are to survive in California. High flows have many benefits. Flushing flows in high-water years inundate floodplains, help out migrating salmon, scour out sediments and algae, move spawning gravel, and reduce fish diseases, all of which greatly increase salmon numbers. New flow science coupled with extremely low salmon returns has led the state water board to create plans to restore winter and spring flows in the Sacramento River. In the Klamath watershed, the Trinity Management Council—of which the Hoopa Valley and Yurok Tribes are members—is recommending higher winter flows in the Trinity River and a recent lawsuit has forced higher spring flows in the Klamath River to combat the Ceratonova shasta fish disease, which killed the majority of juvenile salmon in recent years. Steps have also been taken to use Trinity River reservoir water for fall cold water releases to prevent large scale adult fish kills in the Klamath River during droughts. Restoring flows are needed to bring back salmon. The Sites Proposal threatens all of these actions, and it could not come at a worse time. A recent report from U.C. Davis shows that over 45% of California salmon are facing extinction. Furthermore, the Klamath River is facing the worst salmon returns in history and wild Spring Chinook returns in the Klamath, Trinity and Sacramento Rivers last year numbered in the hundreds. "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." -- Aldo Leopold	Project would not affect or result in changes in the operation of the CVP Trinity River Division facilities (including Clear Creek). Reclamation would continue to operate the Trinity River Division consistent with all applicable statutory, legal and contractual obligations.

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61-6	California needs a water management system that is in accordance with the Delta Reform Act's policy of reducing reliance on the Delta and provides benefits and protections for California's native fish, wildlife species, and communities. Constructing the Sites Reservoir is at odds with that policy and must be rejected.	The Delta Reform Act states that "The policy of the State of California is to achieve the following objectives that the Legislature declares are inherent in the coequal goals for management of the Delta: (78) (a) Manage the Delta's water and environmental resources and the water resources of the state over the long term. (b) Protect and enhance the unique cultural, recreational, and agricultural values of the California Delta as an evolving place. (c) Restore the Delta ecosystem, including its fisheries and wildlife, as the heart of a healthy estuary and wetland ecosystem. (d) Promote statewide water conservation, water use efficiency, and sustainable water use. (e) Improve water quality to protect human health and the environment consistent with achieving water quality objectives in the Delta. (f) Improve the water conveyance system and expand statewide water storage. (g) Reduce risks to people, property, and state interests in the Delta by effective emergency preparedness, appropriate land uses, and investments in flood protection. (h) Establish a new governance structure with the authority, responsibility, accountability, scientific support, and adequate and secure funding to achieve these objectives." Since water storage is a

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		stated goal, the Project is not inherently inconsistent with Delta Reform Act. The Delta Reform Act requires that "state and local land use action identified as 'covered action' pursuant to Section 85057.5 be consistent with the Delta Plan." The Project meets the recommendations of WR.R12d, Promote Option for New or Expanded Water Storage, and WR.R12e, Design, Construct and Implement New or Expanded Surface Water Storage, of the Delta Plan (Delta Stewardship Council 2019). As described in Chapter 5, Surface Water Resources, a benefit of the Project is CVP operational flexibility which could include releases to improve Delta water quality, consistent with WR.R14, Identify Near-term Opportunities for Storage, Use, and Water Transfer Project, of the Delta Plan (Delta Stewardship Council 2019).
62-1	I am opposed to Sites Reservoir because of the topography. There are no fresh water sources of water, the valley is very shallow and the California summers are hotter and the winters are dryer. The evaporation from such a large, shallow lake would mean that a huge amount of north state river water would be lost up front. The remaining water would be misappropriated for use south of the river systems that need the water for fisheries and healthy conditions. It is just another misguided theft of water at huge tax payer expense and has nothing to recommend it. That is a beautiful valley and it should not be developed in this short-sighted exploitative way. There is no way to keep any water in it without draining off even greater amounts of Northstate river water.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
63-1	Where are the Environmental Benefits of this Project? "Environmental benefits" and "environmental purposes" of the Project used in part to justify the Project are vague and largely undefined – and in	The Project would work in conjunction with other reservoirs in the system (e.g., Shasta Lake), as described in Chapter 2, Project Description and Alternatives. As described in Section 2.5.2.1, Water Operations, subsection Coordination with CVP and SWP, this would

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	several instances (an noted in our other comments), illusory. Insofar as any of those benefits accrue to improve highly stressed in-river conditions (particularly high temperatures) and to benefit aquatic species (such as Chinook salmon and steelhead) in the Sacramento River, only Alternative 2 makes provisions for returning waters captured from the Sacramento in the winter directly back into the Sacramento (presumably in the summer and fall) to provide cold water benefits for ESA-listed winter run Chinook, spring-run Chinook and steelhead, and also non-listed but declining as well as economically valuable harvested fall-run Chinook in the river. Nowhere in the Project NEPA documents are these "environmental benefits" – particularly the use of stored Project water specifically for reduction of high-water temperatures in the summer that threaten anadromous fishes – spelled out or modeled in any detail.	allow other reservoirs to be operated such that they could release water for cold-water pool purposes (e.g., Shasta Lake). In other words, the cold-water pool source and potential benefit under Alternative 2 would not come directly from release into the Sacramento River but from the overall operation of Sites Reservoir in conjunction with the CVP and SWP. Please also refer to Master Response 5, Aquatic Biological Resources, regarding benefits to aquatic biological resources, including the benefits to the cold-water pool. Master Response 5, also provides a description of the methods and use of modeled results in the EIR/EIS.
63-2	It appears its history that this Project was conceived and created almost entirely to augment irrigation water supplies, not to actually help solve any of the many serious environmental problems that the CVP and other related water projects have created by way of water over-appropriation, groundwater depletion, and cascading Bay Delta ecosystem collapses that are the underlying causes of the multiple and synergistic ESA- and CESA-listed species crises that are mere symptoms. In short, the Project is designed almost entirely to benefit irrigation, not to store water to meet watershed ecosystem or species conservation needs. We [Pacific Coast Federation of Fishermen's Associations] believe that there may be great merit in the basic concept of setting aside winter water for storage when not needed for fish, so that those waters can then be used to augment summer flows with additional cold water that salmonids need for summer survival. Especially as a way to adapt river conditions to climate change, the basic concept of substitution flows does, in our view, have some merit. There will of course be some benefits to irrigation as well by	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the relationship with water-related plans, policies, and programs, as well as information regarding opposition or support of the Project. As described in Chapter 1, Introduction, the Project's objectives specifically identify ecosystem benefits and operational flexibility: OBJ-2: Provide public benefits consistent with Proposition 1 of 2014 and use WSIP funds to improve statewide surface water supply reliability and flexibility to enhance opportunities for habitat and fisheries management for the public benefit through a designated long-term average annual water supply. OBJ-3: Provide public benefits consistent with the WIIN Act by using federal funds, if available, provided by Reclamation to improve CVP operational flexibility in meeting CVP environmental and contractual

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	making it easier for fish to survive in the system, not only directly (through higher and colder summer flows) but also important benefits in increasing the overall flexibility of management for the whole system, once ecosystem balance is re-achieved. But so far, this Project is not serving that purpose. Instead of designing this Project almost exclusively around meeting irrigation needs, leaving environmental benefits as a mere public relations afterthought, the Project should be specifically redesigned to provide identifiable "environmental benefits" as a first priority, then modeling can determine ways of better meeting irrigation needs without compromising those basic environmental benefits, rather than vice versa as is now the case.	water supply needs and improving cold-water pool management in Shasta Lake to benefit anadromous fish. OBJ-4: Provide surface water to convey biomass from the floodplain to the Delta to enhance the Delta ecosystem for the benefit of pelagic fishes in the north Delta (e.g., Cache Slough). Reclamation identified the following ecosystem purposes of the Project: • Benefits to anadromous fish by improving CVP operations consistent with the laws, regulations, and requirements in effect at the time of operation; • Incremental Level 4 water supply for CVP Improvement Act refuges; and, • Delta ecosystem enhancement by providing water to convey food resources. Please see Master Response 3, Hydrology and Hydrologic Modeling, regarding the modeled representation of the operation of the Project. Master Response 3 describes the modifications to modeling for Shasta Lake operations and resulting benefits to cold-water pool management, fall flow stability, and spring pulse flow actions that would occur under the Authority's and Reclamation's preferred alternative. Also, please refer to Master Response 5, Aquatic Biological Resources, for an overview of Project benefits. Environmental benefits from the Project are achieved through a number of mechanisms, including exchanges and direct releases from Sites Reservoir, either through the Colusa Basin Drain and Yolo Bypass (all three alternatives) or directly into the Sacramento River.

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63-3	In any event, those "environmental purposes" and safeguards should be spelled out and designed into the system as "including providing cold water within the Sacramento River to help meet the needs of the Sacramento-Shasta Temperature Management Plans, D-1641 and WRO 90-5 and other relevant water quality plans and standards, and to prevent temperature-dependent mortalities for anadromous salmonids and other aquatic species as specified in those plans and in any later Biological Opinions for ESA and/or CESA-listed aquatic species." Targeting ways for meeting these ecosystem needs, and especially for meeting mandatory water quality and temperature standards designed to meet those ecosystem needs, should be written into the Project's purpose, design and management criteria. This new approach would generate a great deal more -- and much broader -- public support. Protecting ESA- and CESA-listed species is not optional, but rather is legally a higher priority for beneficial use of water throughout the hydrological system than any conceivable irrigation use, whether by contract or regular water right. Legally, the BOR and State must protect these species and abide by relevant Biological Opinions to their best ability of what is physically possible. Whether there are any actual "environmental benefits" for salmon in the Sacramento at all in the Project as currently designed is questionable in terms of providing more cold water for anadromous species during summer months. Additional water returned to the Sacramento from Sites Reservoir will likely be warmer water than the ambient temperatures of the river, not cold water, as it will have been sitting in a relatively shallow reservoir with considerable surface area through which to absorb solar energy through the summer. Exactly what will happen to that water, particularly in the	Please refer to Master Response 5, Aquatic Biological Resources, regarding benefits to aquatic biological resources, including the benefits to the cold-water pool. Please also refer to Master Response 5 regarding CEQA/NEPA analysis requirements and permitting/Endangered Species Act (ESA) requirements. Chapter 6, Surface Water Quality, describes the temperature modeling performed under the conditions of Alternatives 1 and 3. As discussed in Section 6.3.2.5, Water Temperature, water temperature in Sites Reservoir was modeled using CE-QUAL-W2. The output was used to evaluate temperature on receiving waterbodies in Impact WQ-2. Multiple tables in Chapter 6 show modeled water temperature in different months, including summer months (e.g., Table 6-12d). Under each species impact in Chapter 11, Aquatic Biological Resources, temperature is discussed as it affects fish. Specifically, Section 11.3.2, Operations, identifies that "For potential operational water temperature effects on fish in waterways upstream of the Delta, for each fish species and life stage, the analysis evaluated the frequency (and magnitude for salmonids and green sturgeon) of occurrence of daily or monthly water temperature model outputs above a specific water temperature index value or outside a specific water temperature index range during different times of year and in locations that overlap with the fish presence. Additional information and results are located in Appendix 11D, Fisheries Water Temperature Assessment." Summer months have been specifically modeled, and potential impacts on fish are disclosed. Note that the necessary permit approvals and authorizations for the Project clearly include compliance with the federal ESA and the

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	middle of the summer when most needed, has not been specifically nor adequately modeled in the RDEIR/SDEIS.	Authority's compliance with the California Endangered Species Act (CESA).
63-4	Only Alternative 2 would even be capable, as a matter of basic engineering, of returning any of those stored flows directly back to the Sacramento River, as opposed to the nearest irrigation ditch. If these Sites-origin flows are intended to free up other, colder waters (e.g., from Shasta reservoir) to use to maintain cold water fish-flows, this goal has not been specified nor quantified in the RDEIR/SDEIS analysis, and there is thus no guarantee that such mitigation measures would ever occur. In what is clearly an over-appropriated hydrological system, there is always pressure to use whatever water is available for irrigation, rather than for the protection of ESA- and CESA-listed species. Without some guarantees built into Project operations parameters for such fish-flow mitigation measures, they remain uncertain and speculative.	Project water would be held in storage in Sites Reservoir until requested for release by a Storage Partner. Water would be released from Sites Reservoir via the I/O Works back through the TRR PGP and into the TRR or back through Funks PGP back into Funks Reservoir. Water released could be used along the GCID Main Canal, along the TC Canal, or conveyed to the new Dunnigan Pipeline and discharged to the Colusa Basin Drain (CBD) under Alternative 1 or 3 or to the Sacramento River under Alternative 2. From the CBD, the water may be conveyed via the Sacramento River or the Yolo Bypass to a variety of locations in the Delta or south of the Delta. The Project would work in conjunction with other reservoirs in the system (e.g., Shasta Lake), as described in Chapter 2, Project Description and Alternatives. As described in Section 2.5.2.1, Water Operations, subsection Coordination with CVP and SWP, this would allow other reservoirs to be operated such that they could release water for cold-water pool purposes (e.g., Shasta Lake). In other words, the cold-water pool source and potential benefit under Alternative 2 would not be coming directly from release into the Sacramento River but from the overall operation of Sites Reservoir in conjunction with the CVP and SWP. In addition, the diversion criteria described in the Chapter 2, Diversion Criteria section are part of the Project. Operation of the Project, including the diversion criteria and the use of exchanges, is incorporated in the modeling as part of the Project and as described in Chapter 2. As such, operation of the Project is not a mitigation measure. Furthermore, exchanges are not speculative because they currently occur and because the Project would be integrated into the overall system of the State of California. Please also refer to Master Response 5, Aquatic Biological Resources, regarding benefits to

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		aquatic biological resources, including the benefits to the cold-water pool.
63-5	What is the net annual reduction of total water available, expected through: (a) ground seepage from the reservoir; (b) evaporation; (c) various conveyance losses? These types of water losses would all likely be increased by the process of diverting, storing and then channeling back waters stored in Sites Reservoir. Such water losses should be quantified at the very least so as to determine whether the Project as proposed would even be an effective or efficient way to manage water.	Please see Master Response 3, Hydrology and Hydrologic Modeling, regarding the various losses associated with ground seepage from the reservoir, evaporation, and conveyance.
63-6	Another question to ask is what will be the reduction of high winter-time "flushing flows" because of Project diversions, and how those reductions might affect natural high flow scouring mechanisms that reduce the incidence and spread of such fish pathogens as Ceratanova shasta, and that suppress the incidence of harmful algal blooms (HABs), both of which have become more prevalent throughout the hydrological system.	Potential changes in flow regime and geomorphic processes are analyzed in Chapter 7, Fluvial Geomorphology, under Impacts FLV-2 and FLV-3. There is some empirical and modeling evidence from other systems (e.g., Klamath/Trinity Rivers, where ceratomyxosis is more prevalent and which would be unaffected by Sites Reservoir, as described in Chapter 2, Project Description and Alternatives, Section 2.5.2.1, Water Operations, and Master Response 8, Trinity River) that high flows and high velocity can reduce the density of the intermediate polychaete host for the fish pathogen Ceratonova shasta and reduce infectious spores' concentrations. As identified in Chapter 7, Sites Reservoir operations would not lead to significant reduction in scouring due to high flows (Table 7-4). Diversions would primarily occur in high-flow conditions during which scouring and other geomorphic processes are anticipated to remain relatively unchanged compared to the No Project Alternative/No Action Alternative. Diversion would be limited in low-flow periods when flows at Wilkins Slough are above 10,700 cubic feet per second (cfs) during October 1 to June 14; as such, there would be no exacerbation of conditions favorable to the development of harmful algal blooms (HABs) or increases in pathogen concentrations in the Sacramento River, while nonetheless keeping

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		intact the flushing flows during high-flow periods under the flow protection criteria (Chapter 11, Aquatic Biological Resources, Impacts FISH-2 through FISH-5). In addition, as described in Chapter 2 and Master Response 2, Alternatives Description and Baseline, the operations have been refined such that the Wilkins Slough flow criterion is 10,700 cfs from October 1 to June 14, with no diversion from June 15 to August 31, and 5,000 cfs in September. The Bend Bridge pulse flow protection criteria have also been refined. These two Project refinements, which do not change the conclusions of the analyses, further preserve high winter flushing flows.
63-7	There are unacceptable high likely impacts on ESA-listed winter-run Chinook at Hamilton City and Red Bluff intakes: "All winter-run Chinook salmon spawning occurs upstream of Red Bluff (Azat 2019), so all juvenile winter-run migrating downstream would need to pass the two intake locations at Red Bluff and Hamilton City….. It is possible that a relatively large proportion of downstream-migrating juvenile salmonids could pass relatively close to the Red Bluff and Hamilton City intakes, particularly during nighttime periods when most migration occurs [citations omitted]….. "[I]t would be expected that approximately 10-30% of downstream-migrating juvenile salmonids approaching the river-oxbow split would enter the oxbow and have the potential to be exposed to the Hamilton City intake screen." [Pages 11-84 & 85] This is an unacceptable amount of "take" for an ESA-listed species (winter-run Chinook) already on the verge of extinction. At a minimum, these two intakes must be redesigned to absolutely minimize "take" of these fish, including repositioning them so that there are adequate natural sweeping	The commenter suggests that the possibility of relatively large proportions of juvenile winter-run Chinook salmon passing near the Red Bluff and Hamilton City intakes is an unacceptable amount of take. The potential for a relatively high proportion of fish to pass near the intakes and possibly be exposed to the fish screens does not equate to take (which in ESA terms is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct; please also see discussion of permitting regarding take in ESA terms vs. significance in CEQA terms in Master Response 5, Aquatic Biological Resources); the analysis in the subsequent paragraph then discusses in depth the potential for negative effects as a result of exposure to the fish screens. The commenter Implies that there are inadequate "natural sweeping flows" at the Red Bluff and Hamilton City fish screens and that the intakes require redesign. As described in Chapter 2, Project Description and Alternatives, Section 2.5.1.1, Sacramento River Diversion and Conveyance to Regulating Reservoirs, of the RDEIR/SDEIS, the fish screens at both facilities meet National Marine Fisheries Service (NMFS) and California Department of Fish and

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	flows sufficient to guide juvenile fish away from these intakes, and with screens positioned far enough from the intake current to keep juvenile fish from entrainment. These design elements need to be in place in the Plan. It is NOT sufficient to merely plan future studies on these issues, as currently stated: "Potential exposure of juvenile salmonids to the Red Bluff and Hamilton City fish screens would be addressed by technical studies focused on diversions at these locations during high winter flow conditions when Project diversions would occur (Appendix 2D)." [Page 11-86] Again, without an adequate and stable description of all aspects of the Project plan, its likely impacts simply cannot be analyzed, and this violates the very purposes of both CEQA and NEPA. It is simply not enough to state, as is done above, that all these issues would somehow be addressed later in time, i.e., long after the CEQA and NEPA comment stage has passed. This effort to indefinitely defer actual analysis of entrainment impacts simply begs the question: "What happens if entrainment at these intakes is found to be unacceptably high?" The current Project plan does not seem to answer this question, but rather it goes through a convoluted reasoning process (apges 11-91 to -97) to justify the largely still unsupported assertion that: "The Red Bluff and Hamilton City fish screens are designed to protective standards for Chinook salmon fry and so near-field effects would be expected to be limited. Impingement could be monitored at the Red Bluff and Hamilton City intakes during high winter flow conditions when Project diversions would occur (Appendix 2D)."	Wildlife (CDFW) criteria. These criteria include sweeping velocity. Note that the Hamilton City intake was subject to study and redesign as part of an earlier fish screen improvement project, part of which included construction of a rock training wall to enhance sweeping velocity past the screen (Vogel 2008:1). The commenter suggests that there is a "convoluted reasoning" process related to assessing near-field effects. The cited information (RDEIR/SDEIS Chapter 11, Aquatic Biological Resources, Section 11.4, Impact Analysis and Mitigation Measures, Impact FISH-2, subsections titled Alternatives 1, 2, and 3, Effects of Alternatives 1, 2, and 3, Sacramento River, Near-Field Effects, Impingement, Screen Contact, and Screen Passage) is a review of the available literature to inform the potential for negative near-field effects, which, in association with fish screens meeting fish agency criteria, informs the conclusion that near-field effects would be limited. The commenter does not provide any examples of information that would contradict the information provided for this conclusion. The commenter suggests there is an effort to indefinitely defer actual analysis of entrainment. The potential for near-field effects, including entrainment, is analyzed with best available information, indicating limited potential for effect at the two screened diversions. As noted in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, Section 2D.6, Fish Monitoring and Technical Studies Plan and Adaptive Management for Diversions, technical studies would verify the facilities' performance during high winter flow conditions under which the Project would be diverting in the future, a situation that currently does not occur. This would be part of adaptive management for the diversions. The technical studies will describe

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	This is more like simply taking these pre-existing intakes as they now are, rather than bringing them up to higher standards based on best available design criteria – and hoping for the best. At the least, if there is to be meaningful monitoring in accordance with Appendix 2D, there should be certain entrainment "triggers" and caps above which, if these levels are reached, the intakes will be redesigned or operated to minimize such problems.	factors such as juvenile salmonid migration survival in high flow conditions prior to Project operations, compliance with protective criteria for screen hydraulics in high flow conditions, and changes resulting from initial and continued Project operations in high flow conditions. These additional studies will provide data and reports to document compliance with NMFS and CDFW fish screen performance criteria in high flow conditions when Project diversions would occur; the studies will be submitted to NMFS, U.S. Fish and Wildlife Service, and CDFW for review and to inform adjustments or refinements in Project operations for the protection of fish species as part of adaptive management. An Adaptive Management Science Team (AMS Team) will use the results to determine if and what actions may be needed (e.g., adjustments in diversion operations timing). The commenter's suggestion that there be certain "triggers" and caps for entrainment would likely be similar in nature to the types of evaluation that may be considered by the AMS Team, should additional measures be necessary to meet the fish screen performance criteria.
63-8	Temperature Effects from Irrigation Diversions on Winter-run Chinook Must Be Considered Cumulatively, Not in Isolation Project analysis categorically dismisses most (but not quite all) increased temperature impacts on winter-run Chinook as (1) being less than 5% greater under the alternatives than under the NAA, and (2) the exceedance per day was generally less than 0.5° F. greater than under the NAA. The RDEIR/SDEIS then states: "Because these biologically meaningful effects occurred in only one month of one water year type, they are not expected to be persistent enough to affect winter-run Chinook salmon at a population level." [11-105].	Please see Master Response 5, Aquatic Biological Resources, for a discussion of CEQA and NEPA requirements as they pertain to special-status fish species and how these planning processes differ from the permitting ones (including those under the federal and state ESAs). Master Response 5 also addresses the uncertainty in interpreting modeling results, the use of the best available tools, and the adequacy of thresholds in evaluating potential Project impacts. The analysis in Chapter 11, Aquatic Biological Resources, Impact FISH-2, considers the information provided in the comment regarding temperatures near the index values, including 53.5°F. The analysis uses 53.5°F as an index value for analysis of Chinook salmon

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	And later: "Overall, effects of Alternatives 1, 2, and 3 on water temperature-related effects to winterrun Chinook salmon in the Sacramento River are expected to be biologically inconsequential due to the low frequency and small magnitude of differences between Alternatives 1, 2, and 3 and the NAA." [11-107] However, requiring "a population level" effect is not the appropriate standard here. The finding of a "take" of this ESA-listed species does not require "population level" impacts – and lack of population level effects does not excuse a "take" of an endangered species. The winter-run Chinook is a federally ESA-listed species that has been pushed extremely close to extinction already, and lays eggs which are also very temperature sensitive at ambient water temperature thresholds above 53.5° F. Temperature-dependent egg mortalities (TDM) do not change in a linear fashion with increased temperature; they are threshold-related. Water temperature increases above that particular biological threshold (now all too common in the Sacramento River system) can result in very large temperature-dependent egg mortalities even with very small increases in ambient water temperature above that key biological threshold. In that context even a 0.5° F. water temperature increase above that threshold can result in much larger egg mortalities on a non-linear basis! (See Figure 1). Generally speaking, the extent of TDM in a cohort of Chinook salmon eggs is a function of by how much river temperatures exceed 53.5°F at the location of the redds, and for how long these conditions persist. Egg mortality rates increase very rapidly at daily average temperatures above 53.5°F (11.94oC) (Martin et al. 2016), and TDM is above 70% when eggs are incubated at constant temperatures of 55oF (~12.8oC) and above (see	spawning and egg incubation. Further, the analysis utilizes the Martin and Anderson models, which use the 53.5°F value. In addition, an additional analysis was added to the winter-run Chinook salmon egg temperature analysis in the Final EIR/EIS that looks more closely into this temperature index value for salmonid temperature-dependent egg mortalities (TDM) related to summer cold-water pool management. Results from this analysis do not change the impact determination of less than significant with mitigation (CEQA) and findings of no adverse effect (NEPA). Please refer to response to comment 63-9 regarding Figure 1 [Exhibit 1].

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	Figure 1); this is likely an underestimate because river temperatures are not constant over the course of a day -- a 55oF average temperature means the eggs will be exposed to even higher temperature "spikes" during the hottest parts of each sunny day. Figure 1 [Exhibit 1] also illustrates neatly why the Project RDEIR/SDEIS's broad assumption that impacts that are less than 5% of NAA status quo can be categorically assumed to be "insignificant" is false, as well as in conflict with NEPA and CEQA standards. In this TMD instance, and in many other instances of "threshold" triggers, once that threshold has been reached, even very small additional impact increases above that threshold "tipping point" can result in major (even irrevocable) changes to a finely balanced ecosystem. In this case, changing ambient water temperatures for cold-adapted salmonid eggs from 53.5°F a mere 0.5 degree upwards to 54.0°F would result in TMD levels rocketing from zero to 30% or more.	
63-9	[Exhibit 1: Figure 1: Temperature-dependent mortality (% TDM) of winter-run Chinook Salmon eggs as a function of water temperatures, as modeled by NMFS based on research published by Martin et al. 2016. Note that eggs begin to die when exposed to constant temperatures above 53.5°F and mortality increases rapidly as temperatures increase. In particular, exposure to constant temperatures of 55°F corresponds to temperature-dependent mortality of greater than 70%. In the wild, temperatures are not constant; it is likely that TDM is higher at any given average temperature than it is at the corresponding constant temperature depicted here. (Source: Graph provided to parties by federal defendants October 21, 2021; reprinted from PCFFA, et al. vs. Raimondo, U.S. Dist. Court of Northern California, Case No. 1:20-cv-00431, Declaration of Dr. Jonathan A. Rosenfield, Dkt. 325 (12/16/21))]	There are no data points, measures of fit of the line, error, or statistics describing the relationship in the figure provided by the commenter, which precludes accurate interpretation and confirmation of the values cited. It does, however, show similar trends to Figure 1 published in Martin et al. (2017), albeit using the opposite metric of mortality (survival). Please refer to response to comment 63-8 for a discussion of thresholds and the 53.5°F value.
63-10	The RDEIR/SDEIS Must Take into Account the Cumulative Impacts from all other Sacramento River Diversions	Please refer to Chapter 31, Cumulative Impacts, for a discussion of cumulative impacts relating to aquatic biological resources, where it

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	Never in the Project's RDEIR/SDEIS documents does it discuss in any detail the cumulative effects on anadromous salmonids or other aquatic species of all the hundreds of individually small irrigation withdrawals throughout the hydrological system that already diminish Sacramento River flows within the Project area. Cumulative effects analysis is still a requirement of NEPA, and this requirement is being further bolstered by the Biden Administration (see 86 Fed. Regs. 55757 et seq. (Oct. 7, 2021)). CEQA also independently requires a cumulative effects analysis. Without such a cumulative impacts analysis it is impossible to assess the true potential water diversions resulting from the Project in terms of incremental or additional impacts the Project might create on ESA- or CESA-listed species already (by definition) near extinction. But consideration of cumulative effects is also crucial in determining whether this Project's additional impacts, on top of already existing cumulative other impacts, results in a "take" occurring or if there is "jeopardy" to ESA-listed species such as the winter-run Chinook, the spring-run Chinook and/or steelhead. The Federal Endangered Species Act (ESA) [16 U.S.C. §1538(a)(1)] generally prohibits any person, including both private persons and federal agencies, from "taking" any endangered species, such as in this case winter-run Chinook, spring-run Chinook or steelhead. And the term "take" is broadly defined to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." With the ESA, Congress intended endangered species to be afforded the highest of priorities. The ESA's purpose is "to provide a means whereby the ecosystems upon which endangered species and threatened species	states that negative effects of the operation on juvenile salmonids would be limited. Please refer to Master Response 3, Hydrology and Hydrologic Modeling, for further clarification regarding the modeled representation of diversions throughout the watershed. The CALSIM II model includes existing diversions in the simulations of the No Project Alternative and Alternatives 1, 2, and 3, and, as such, diversions are incorporated in the impact assessment presented in Chapter 11, Aquatic Biological Resources. Please refer to Master Response 5, Aquatic Biological Resources, regarding CEQA/NEPA analyses compared to permitting requirements under the ESA. Please also see response to comment 63-12 for a discussion of the difference between consideration of past projects versus consideration of potential future projects.

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	depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species." 16 U.S.C. § 1531(b). Under the ESA, conservation means "to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary." Id. § 1532(3). Section 7(a)(2), 16 U.S.C. § 1536(a)(2), is a critical component of the statutory and regulatory scheme to conserve endangered and threatened species. It requires that every federal agency must determine whether its actions "may affect" any endangered or threatened species. If so, the action agency must formally consult with the Fisheries Service as part of its duty to "insure that [its] action is . . . not likely to jeopardize the continued existence" of that species. Id. § 1536(a)(1), (2); 50 C.F.R. § 402.14 (2019). The term "jeopardize" is defined as an action that "reasonably would be expected . . . to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02 (2019). At the completion of formal consultation, the Fisheries Service will issue a Biological Opinion that determines if the agency action is likely to jeopardize the species. 16 U.S.C. §1536(b)(3)-(4); 50 C.F.R. § 402.14(h). In formulating its Biological Opinion, the Fisheries Service must use only "the best scientific and commercial data available." 16 U.S.C. § 1536(a)(2). The Biological Opinion must also include a summary of the information upon which the opinion is based, an evaluation of the "current status of the listed species," the "effects of the action," and the "cumulative effects." 50 C.F.R. § 402.14(g)(2), (g)(3). "Effects of the action" include both direct and	

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	indirect effects of an action "that will be added to the environmental baseline." Id. § 402.02. The "environmental baseline" includes "the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process." Id. "Cumulative effects" include "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area." Id. Thus, in issuing a Biological Opinion, the Fisheries Service must consider not just the isolated share of responsibility for impacts to the species traceable to the activity that is the subject of the Biological Opinion, but also the effects of that action when added to all other activities and influences that affect the status of that species. Thus for both NEPA and CEQA purposes, as well as for ESA incidental take coverage purpose and a Biological Opinion, a cumulative impacts analysis looking at the combined impacts of all other water diversions in addition to or prior to the Project's proposed water diversions ESA-listed or CEQA-listed aquatic species within the Project's area is necessary.	
63-11	Flow-Related Physical Impacts on ESA-listed Salmonids 66. 1. Redd Dewatering The RDEIR/SDEIS on page 11-109 notes that: "The results for winter-run Chinook salmon show few large changes in redd dewatering between the NAA and Alternatives 1, 2, and 3 (Table 11N-13)... Changes for most months and water year types under all Alternatives 1, 2,	No significant impacts related to redd dewatering were identified, so no mitigation is required. For a discussion of modeling used for redd dewatering and the treatment of outliers in the results, please refer to Master Response 5, Aquatic Biological Resources, which addresses the use of daily or monthly modeling results in the analyses, the adequacy of thresholds and criteria used in the analyses, the uncertainty in interpreting modeling results, and the use of means in reporting modeling results. Master Response 5 describes the determination of significant impacts on special-status fish species

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	and 3 are less than 2%. Overall, the effects of Alternatives 1, 2, and 3 on winter-run redd dewatering are minor." While this may be true on average, that average value is merely a mathematical construct, not a real event. In Table 11N-13 there is an outlier high number (highlighted in red) for the July- October period in a Below Normal water year, in which the percentage of redds dewatered under those conditions is projected to be 2%. In an extremely weak population baseline, such as that of the endangered winter-run Chinook salmon stocks, that 2% loss could well be deemed significant. Repeated such loss events could be even more so, especially on top of cumulative losses from other sources. Similar claims of insignificant impacts from redd dewatering for spring-run Chinook and fall-run Chinook could be made. However, in a related table (11N-14) showing percentage of ESA-listed spring-run Chinook redds likely to be dewatered, there are also data outliers in the Sept-Dec. time frame in Above Normal water years for Alt 1B (2.3% reduction), for Alt 3 (4.5% reduction), and during the Oct.-Jan. time period for Above Normal years under Alt 3 (2.2% reduction), and for Critically Dry water years for Alt 1A (4.5% reduction), Alt 1B (3.2% reduction, Alt 2 (3.2% reduction) and finally Alt 3 (3% reduction). There are also similar redd dewatering problems listed for fall-run Chinook in Table N-15 of between 2% and 4.1% in some time frames and water years for some Alternatives. These redd dewatering projects outliers are of some concern – please explain what, if any, mitigation measures you will take (e.g., reducing Project	under CEQA and NEPA, including baselines used for evaluating the effect on special-status fish species. Note that the highlighted results in the tables for the alternatives should not be considered statistical outliers; they are simply flags to help readers quickly locate the results with the largest differences from the No Project Alternative.

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	intakes in Critically Dry years during peak egg-laying season for salmonids) to mitigate these potential impacts on redds.	
63-12	There is no analysis about cumulative other impacts on river conditions that have already taken a high toll on the redds that are still typically present. Without that information on cumulative impacts, it is not possible to say whether up to an additional 5% loss of redds through dewatering - especially in light of the cumulative losses from all other impacts -- is a "significant" impact on the near-extinct population as a whole or not.	The effects of past projects are incorporated into the No Project Alternative and are therefore included in the impact analysis for each resource. Please see Master Response 5, Aquatic Biological Resources, regarding the baseline conditions of fishery resources. While the CEQA and NEPA regulations regarding analysis of cumulative impacts differ slightly, they both require analysis of the impacts of the proposed action together with past actions (or baseline) and reasonably foreseeable future actions. The baseline for aquatic biological resources is described in Chapter 11, Aquatic Biological Resources, and analyzed in that chapter to assess the effects of the project on aquatic resources. Chapter 31, Cumulative Impacts, assesses the cumulative impacts of the project, including impacts on aquatic species. Please also refer to Master Response 5, Aquatic Biological Resources, for a discussion regarding Thresholds and Criteria Used in Analyses, including those related to redd dewatering, spawning habitat, and rearing habitat. Note that the 5% or 10% values were used to assist the reader in locating the largest differences between Alternatives 1, 2, and 3 and the No Project Alternative, not to provide biological or statistical thresholds of significance. Impact determinations for a given species did not rely on a single threshold or a single analysis but were instead thoroughly evaluated using the judgement of fisheries experts by qualitatively weighing all relevant analysis results, including multiple processes, times, and locations.

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		The environmental setting of Chapter 11 describes current conditions for special-status fish species as already affected by past and current actions, including reservoir construction, diversions, and other hydrologic modifications. These current conditions and their effects on survival (such as effects on spawning area and entrainment) are part of the reason these fish are listed as special-status species. Dam construction has diminished upstream spawning area but provides some level of protection against dewatering as a result of controlled reservoir releases. These current conditions are represented in the No Project Alternative and are considered in the impact assessments in Chapter 11.
63-13	Spawning Habitat Loss At page 11-111, after earlier describing the WUA ("weighted usable area") method used in your analysis, you state: "Almost all spawning by winter-run occurs in the upper two segments (Segment 6 and 5) of the Sacramento River, between Keswick Dam and Cow Creek, with spawning density (redds per RM) especially high in Segment 6 (Table 11K-1)..... Mean winter-run spawning WUA differs by less than 5% for most months and water year types, but mean WUA in Segment 6 under Alternatives 1, 2, and 3 is 5% to 6% lower than WUA under the NAA in May of Critically Dry Water Years (Table 11K-2)." But then the draft goes on to say: "In general, Alternatives 1, 2, and 3 are not expected to substantially affect winter-run spawning WUA." This latter assurance is, on its face, contradicted by the fact that at least during May, in Critically Dry water years, RDEIR/SDEIS tables show that up	The changes in winter-run spawning conditions in Segment 6 of Critically Dry Water Years are acknowledged in the RDEIR/SDEIS, Chapter 11, Aquatic Biological Resources, Section 11.4, Impact Analysis and Mitigation Measures, Impact FISH-2: "These results indicate that in May of Critically Dry Water Years, Alternatives 1, 2, and 3 would result in reductions of spawning habitat in Segment 6 and increases of spawning habitat in Segment 4. Note that spawning habitat conditions are much more important for winter-run in Segment 6 than in Segment 4." However, the >5% reductions in Segment 6, which occur only in Critically Dry Water Years, range from 5% to 6%, depending on the alternative. Because this level of reduction is restricted to one water year type in 1 month, it is considered not to have a substantial effect on the overall availability of winter-run spawning habitat. For further explanation regarding determination of substantial effects, please refer to Master Response 5, Aquatic Biological Resources, for discussions of: (1) thresholds and criteria used in the analyses, and (2) use of means in reporting modeling results.

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	to 6.1 % percent of all the very small amount of still remaining winter-run Chinook spawning habitat is expected to be lost. This impact, even by the Project's own questionable ≥5% significance level definition, is thus a significant impact. There are similar spawning area Segment 5 habitat losses projected for river Segment 5 for spring-run Chinook (see Table 11K-6) for Above Normal water years for Alternative 3 of 9.4% spawning area losses. These relatively higher spawning area losses are of concern – please explain what, if any, mitigation measures Sites Authority will take (e.g., reducing Project intakes in Critically Dry years during peak egg-laying season for salmonids) to mitigate these significant impacts of spawning area losses.	
63-14	It is important to note that there should also be an analysis about cumulative other impacts on river conditions that have already taken a high toll on spawning areas that were once typically present. Without that information on cumulative impacts it is not possible to say whether up to an additional 5% loss of spawning habitat through dewatering is a "significant" impact on the population as a whole or not. Even a 5% loss of what may already be only a very small remnant of once abundant habitat could easily be "significant." And it would most certainly be a "take" as defined under the ESA!	Please see response to comment 63-12.
63-15	3. Rearing Habitat Loss At page 11-111, the RDEIR/SDEIS states: "These results indicate that Alternative 3 would have a moderate effect on rearing habitat for winter-run fry in the Sacramento River during October of Below Normal Water Years and the other alternatives would have no adverse effects."	There are inevitably some differences in rearing habitat weighted usable area between the No Project Alternative and Alternatives 1, 2, and 3, but for all four Chinook salmon races and life stages except winter-run fry, more of the largest (highlighted) differences show increases in habitat rather than decreases. As noted by the commenter, the reduction for winter-run fry is acknowledged in the EIR/EIS. As discussed in Master Response 5, Aquatic Biological Resources (see section identified below), impact conclusions

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	This is an over-simplification, at best. As noted in Table 11K-23 for Segment 6 of the upper Sacramento River (one of the two main areas in which the winter-run still spawn), in September there would be a 5.1% winter-run fry rearing area reduction under Alternative 3, and in October under Below Normal conditions there would be a 7.1% loss under Alternative 3 and a 5.1% loss in Critically Dry years. And remember, these losses are cumulative on top of other major winterrun Chinook spawning and rearing habitat losses over many decades, losses which are in large part the trigger for their current ESA-listing as "endangered." There are similar problems for loss of spring-run Chinook fry rearing habitat (see Table 11K-30 through 34) in Sacramento River Segments 4 and 5, and for fall-run Chinook as well under certain conditions (see Table 11K-46, looking at Sacramento River Segment 4). These rearing habitat area losses projected are of some concern – please explain what, if any, mitigation measures you will take (e.g., reducing Project intakes in Critically Dry years during peak fry rearing season for salmonids) to mitigate these potential additional impacts that will lead to yet more fry rearing-area habitat losses.	regarding effects of the Project on the populations of all fish species evaluated are arrived at by weighing effects of the alternatives on all important factors. Please refer to Master Response 5, Aquatic Biological Resources, for discussions of (1) thresholds and criteria used in the analyses, and (2) uncertainty in interpreting modeling results. These sections discuss the need to base conclusions regarding the effects of the alternatives on a fish species or race on the results of all potential factors analyzed, rather than limiting considerations to a single factor. Master Response 5 describes the determination of significant impacts on special-status fish species under CEQA and NEPA, including baselines used for evaluating the effects on special-status fish species.
63-16	There should also be an analysis about cumulative impacts on river conditions that have already taken a high toll on rearing habitat areas that were once typically occupied. Without that information on cumulative impacts, it is not possible to say whether up to an additional 5% loss of spawning habitat through dewatering is a "significant" impact on the population as a whole or not.	Please see response to comment 63-12.
63-17	Increases in Juvenile Salmonid Strandings There is an unfortunate dearth of analysis of salmonid juvenile stranding risk, as noted in Appendix 11-N (Other Flow-Related Upstream Analysis):	The lack of information for assessing juvenile stranding in the Feather and American Rivers is unfortunate. However, it would be problematic to assume that the effects of the Project on stranding in these rivers would be the same as those determined for the Sacramento River.

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	"11N.3.3 Juvenile Stranding. A juvenile stranding analysis for salmonids was conducted in the Sacramento River only. No information is available from the Feather and American Rivers for relating changes in flow to numbers of juvenile salmonids stranded. Furthermore, daily flow data are needed to reliably estimate juvenile stranding, and only monthly data are available for these rivers." [Footnote 1: RDEIR/SDEIS, pg. 11N-42.] One would then have to assume, as a precautionary measure, that juvenile stranding problems in these other rivers would be comparable to typical stranding problems in the Sacramento. You cannot just assume them away from lack of data, as apparently was done. "Absence of evidence is not evidence of absence." And it turns out there are also likely to be serious juvenile stranding problems within the Sacramento River: "The largest increases in juvenile stranding occur for the April cohort at all three locations [upper Sacramento River: Keswick Dam, Clear Creek, and Battle Creek], ranging as high as 30% in Dry Water Years under Alternative 1A, 1B, and 2 at the Keswick Dam location." [11-112] But then, remarkably, this very troubling and clearly significant impact is dismissed out of hand with the following justifications: "The principal period of stranding vulnerability for the winter-run is for cohorts emerging in July through October, when some large reductions and increases in juvenile stranding occur, but large reductions in juvenile stranding are more frequent than large increases. Therefore, Alternatives 1,	Not only are conditions that affect juvenile rearing habitat in these rivers different from those in the Sacramento River, but the effects of the alternatives on flow conditions in these rivers are very different. Uncertainty in the analysis of some environmental effects can be expected. Please see the discussion in Master Response 5, Aquatic Biological Resources, on use of best available tools and uncertainty. Regarding the balancing of increases and decreases in the juvenile stranding results, the commenter makes the following argument: "Stranding events and non-stranding events cannot be traded off against each other 'on average' because they are not biologically symmetrical. Once an individual juvenile fish is stranded, even once, it is dead—- it does not matter one bit if in other places at other earlier or later times, it would not been stranded at all or would have benefited in some way. It only takes a single event (not an "averaged sum") for a stranding to result in death. Once a fish is dead, it stays dead. It cannot benefit from later more benign events."

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	2, and 3 are not expected to affect winter-run juvenile stranding (Table 11N-28 through Table 11N-30).” [Page 11-112] “The results generally show little evidence of major overall effects of Alternatives 1-3. The redd dewatering and juvenile stranding analyses found many increases in potential negative effects balanced by many reductions in such effects.” [Appendix 11N-53] This is false, and at best, contradictory reasoning. Stranding events and non-stranding events cannot be traded off against each other “on average” because they are not biologically symmetrical. Once an individual juvenile fish is stranded, even once, it is dead – it does not matter one bit if in other places at other earlier or later times, it would not been stranded at all or would have benefited in some way. It only takes a single event (not an “averaged sum”) for a stranding to result in death. Once a fish is dead, it stays dead. It cannot benefit from later more benign events.[Footnote 2: This is comparable to in-river fish mortality events in response to summer daily hot water temperature spikes. Once a spike occurs at fatal spike temperatures, even once, the fish affected by that spike are dead. It does not matter thereafter what the “average daily temperature” was for that day. The “average daily temperature” is a mathematical construct while the high temperature spike is a real mortality event.] In short, its death cannot be averaged away. Removing large numbers of juvenile fish from the river, including by periodic mortality events like strandings, just means fewer fish to benefit from later improving conditions. Dead fish, from whatever the cause, are in fact removed from the population. Juvenile stranding events with mortalities of as high as 30% of the fish present (see Table 11N-28 through Table 11N-30) thus represent significant mortality events that have serious	

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	implications – particularly for already extremely weak and now geographically very limited populations like the endangered winter-run Chinook. Mitigation measures to prevent these mortality events should be incorporated into the Project Plan and into its permits.	
63-18	Migration Flow – Survival Relationships At page 11-119, we find the following correct summary of what is now the best available science with regard to the relationship between higher flows of water through the Delta and outmigrating salmon survival rates: "Diversions from the Sacramento River to Sites Reservoir under Alternatives 1, 2, and 3 have the potential to affect survival of juveniles salmonids, including winter-run Chinook salmon, based on flow-survival relationships. Several recent analyses provided evidence for positive correlations between Sacramento River flows and survival of Chinook salmon [citations omitted]." Later on that same page, the RDEIR/SDEIS also states: "The discussion in Section 11P.2 of Appendix 11P, Riverine Flow-Survival, illustrates that the Sites Reservoir diversion criteria generally minimizes diversions during the historical periods of fish movement … and application of the flow-threshold criteria … suggests that flow-survival effects on juvenile Chinook salmon (including winter-run Chinook salmon) would be greatly limited by the diversion criteria." Project proponents also claim: "As discussed in Chapter 6, the effects of Alternatives 1A, 1B, 2, and 3 on water temperatures at the Sites Reservoir release site in the Sacramento River would be relatively small with the releases generally tending to cause a slight reduction in water temperature (Tables 6-12a through 6-12d).	Water temperature in Sites Reservoir would be stratified except during the coldest times of year and, therefore, would not become a bathtub of warm water. Please see Master Response 4, Water Quality, for some examples of reservoir temperature profiles simulated by CE QUAL W2, including during low storage conditions. The temperature blending analysis considers the temperature of the water released from Sites Reservoir (as simulated by CE QUAL W2), mixing with water in downstream waterways (i.e., Funks Reservoir for all alternatives and CBD for all alternatives except Alternative 2), and warming along the lengths of the waterways before discharge to the Sacramento River. The reservoir would not be shaded. Based on CALSIM results for the entire analysis period, overall average depth in the reservoir would be 86 to 94 feet depending on alternative (calculated as overall average volume in acre-feet divided by overall average surface area in acres). As described in Chapter 6, Surface Water Quality, flexibility in reservoir release temperatures would be provided by selective use of the multiple tiers in the I/O tower (centerlines at 340, 370, 390, 410, 430, and 450 feet elevation, with an additional outlet at 470 feet for Alternatives 1 and 3) and at the low-level intake with centerline at 311 feet. The selection of release ports for water temperature modeling followed the protocols described in the Reservoir Management Plan (RMP) (Section 2D.3, Reservoir Management Plan, in Appendix 2D,

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	Therefore, temperature-related effects of Alternatives 1A, 1B, 2, and 3 on winter-run Chinook salmon at the Sacramento River release site would be minimal … For Alternatives 1A, 1B, 2, and 3, water temperatures at this location would either stay the same or be reduced due to Sites Reservoir releases." [11-120] Hypothetical reductions in Sacramento water temperatures due to Sites Reservoir timed inputs, of course, depends on two things: (a) whether those inputs are applied directly to the Sacramento River or not – which according to the description of the Project alternatives in the Executive Summary [Table ES-1 on pg. ES-8] could only be achieved under Alternative 2, and; (b) the initial temperature of the water originating at the Sites Reservoir at the upper end of the pipeline to the river. Left to itself the Sites Reservoir is simply going to absorb sunlight, especially during summer months, and heat up, collecting and spreading that solar energy broadly through its increased surface area like any other lake. Unless the reservoir becomes temperature stratified, it will become just like a bathtub of warm water – water that might well be warmer (not cooler) than the Sacramento River at the time of inflow. The RDEIR/SDEIS should explain in more detail any water temperature reduction measures, if any, that are planned for keeping the water temperatures of water delivered from Sites Reservoir to the Sacramento River as low-temperature as possible. For instance, is the reservoir expected to stratify in temperature, and if so, will there be temperature control devices sufficient to take water only from the lower-temperature level of that stratification? What will the average depth of the reservoir be? Will it be covered in some way – such as naturally with the introduction of floating	Best Management Practices, Management Plans, and Technical Studies), with tier selection based on meeting a reservoir release temperature objective of 65°F during the rice growing season. Please also see Master Response 4, Water Quality, for a discussion regarding use of the I/O tower to control water quality of releases. Release of cold water from Sites Reservoir would not be an objective for several reasons: the presence of warm-water fish in Funks Creek; the long distance between Sites Reservoir and the Sacramento River; the limited effect of Sites Reservoir releases on Sacramento River water due to dilution effects; and the downstream location of the discharge site on the Sacramento River, where river temperatures are warmer and fish are less dependent on cool temperatures.

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	water plants, or with floating solar collectors as some have proposed – in order to reduce initial water temperatures?	
63-19	What is the initial water temperature (i.e., or water coming from the reservoir) that is assumed and built into Table 11-15? An overly-optimistic assessment of the water temperature effects on the slack-water, completely exposed reservoir from (particularly summertime) solar heating would lead to nonsensical conclusions.	The water temperature releases from Sites Reservoir are calculated with the CE QUAL W2 model. Detailed description of the model is provided in Appendix 6D, Sites Reservoir Discharge Temperature Modeling.
63-20	Inadequate Mitigation Measures FISH-2.1 and FISH-3: Wilkins Slough Flow Protection Criteria: Problems with this mitigation as the Project's primary fish impacts mitigation measure is that this measure would be in place, by its own terms [11-131] only during March through May of each year. However, salmonid species like the ESA-listed winter-run and spring-run Chinook, and the non-listed but seriously depressed fall-run Chinook, are well known to be present and migrating through the system at other times of the year, during which times (according to your own analysis) these stocks would be more severely impacted. See for instance RDEIR/SDEIS at 11-130 to 11-131 that states: "Mitigation Measure FISH-2.1 will limit the potential for negative flow-survival effects to winter-run Chinook salmon during their dispersal to rearing habitat and/or migration downstream toward the Delta." However, as the RDEIR/SDEIS admits, winter-run Chinook salmon migrate past the diversion points for Sites Reservoir (at the Red Bluff Diversion Dam and at Hamilton City) and past Wilkins Slough well before the month of March, which is when the protections provided by FISH-2.1 would only begin, and they are generally migrating out of the Delta between December and May. See RDEIR/SDEIS at 11-79 to 11-80 (noting that half of the annual migration of juvenile winter-run Chinook salmon have passed the Red Bluff	In the Final EIR/EIS, the Project alternatives' operational criteria now include the Wilkins Slough bypass flow criterion of 10,700 cfs from October 1 to June 14, thereby addressing concerns that the juvenile salmonid migration period is not covered by the criteria. Please also see Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures.

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	Diversion Dam before late October and 90 percent before January 1; noting that winter-run Chinook salmon are caught in Knights Landing rotary screw traps between mid-September to mid-March, with the bulk of the run (90 percent) generally passing between early October to mid-March; noting that winter-run Chinook salmon are generally caught in the Chipps Island trawls between December 1 and May); see id. at 11-124 ("the main period of juvenile winter-run Chinook salmon occurrence in the Delta (i.e., December–April"). Indeed, most migrating juvenile Chinook salmon, including nearly all juveniles of the winter-run and late-fall run, will not be protected by this bypass flow requirement as most of these fish would have migrated downstream of Knights Landing before March. See RDEIR/SDEIS at 11-120 and citations therein. In short, mitigation measure FISH-2.1 will limit pumping that reduces flows in the Sacramento River below 10,700 cfs only after most winter-run Chinook salmon have already migrated downstream to the Delta, and as a result this mitigation measure wholly fails to protect juvenile winter-run Chinook salmon from the harmful effects of the proposed Project and alternatives as they migrate down the Sacramento River. The RDEIR/SDEIS's conclusion that the proposed Project and alternatives will not cause significant environmental impacts to winterrun Chinook salmon is simply unsupported by its own analysis, and is thus arbitrary and capricious, and the document must be revised to include adequate mitigation measures that apply when winter-run Chinook salmon are actually migrating down the Sacramento River. Similar timing problems for related flow bypass measures also invalidate mitigation measures proposed to protect spring-run (FISH-3) and fall-run Chinook, as well. Since all these species are present in the river outside the very limited March through May mitigation period, these essentially	

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	unmitigated additional impacts on already severely depressed salmonid stocks could not be "insignificant" in any sense of the word.	
63-21	COMMENTS ON SITES REVISED DRAFT ENVIRONMENTAL IMPACT REPORT/SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT REGARDING THE TRINITY RIVER The modeling for Sites RDEIR/SDEIS purports to show that the Project would not harm the Trinity River because it shows no changes in the current pattern of exports, river releases and storage for the Trinity River Division (TRD) of the Central Valley Project (CVP). However, since no operating plan for Sites has been released along with the RDEIR/SDEIS, it is impossible to ascertain if real time operations would impact the Trinity River. Furthermore, the Trinity River does not have temperature protection incorporated into the Bureau of Reclamation's (BOR) state water permits. Until the State Water Resources Control Board (SWRCB) updates BOR's Trinity River water permits, objections to Sites Reservoir are valid because impacts can and will occur. The Sites Project Authority claims that it has no authority to change TRD operations, which is true. However, it cannot say the same for one of its member agencies that controls the TRD -- the Bureau of Reclamation (BOR). Given that BOR owns, operates, and has full control of the TRD and will likely have a percentage ownership in Sites Reservoir, it's very clear that construction and operation of Sites could and likely would negatively impact the Trinity River. For instance, examination of the modeling for the 2017 Sites DEIR/DEIS found that during drier years, BOR would export more Trinity water to the Sacramento River in spring and late winter, while concurrently reducing	Please refer to Master Response 2, Alternatives Description and Baseline, which discusses coordination of Sites Reservoir operations with the SWP and CVP and exchanges. Master Response 2 also discusses the purpose and timing of development of a reservoir operations plan, and that development of the reservoir operations plan is not necessary to model Project operations and analyze the potential impacts of those operations for NEPA and CEQA purposes. Please also refer to Master Response 8, Trinity River, which explains that operation of the Project would not result in impacts on the Trinity River. Specifically, Master Response 8 discusses, with respect to the commenter's concerns around potential impacts on the Trinity River, the Project water right application, including the proposed term to ensure the Project will not divert or redivert water from the Trinity River or negatively affect Reclamation's Trinity River obligations; the ability to divert CVP water into Sites Reservoir; the protection of existing water rights; Reclamation's investment in the Project; water temperature impacts on the Trinity River; and the scope of analysis with regard to the Trinity River system. Trinity River origin water is water appropriated under Reclamation's CVP water rights and would not be stored in Sites Reservoir under the Project. The Project does not propose and would not result in any statutory, legal, contractual, or operational changes in the Trinity River system. Regarding temperature, Reclamation operates under State Water Resources Control Board Water Right Order 90-5, which includes not adversely affecting Trinity River temperatures for the benefit of the Sacramento River temperature. The specific language in Water Right

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	Trinity exports during critical fall spawning months when Lewiston Reservoir warms substantially. The modeling, if done adequately, should also have shown increased temperatures for spawning salmon in the Trinity River. This so-called "modeling error" has been corrected for the current RDEIR/SDEIS. However, without an operations plan, the modeling is meaningless, but the previous modeling exercise gives a clear example of how Sites could negatively impact the Trinity River through BOR operations. The issue is: "How can the Sites Project Authority be held responsible for BOR's actions related to the operation of Sites Reservoir?" There is a way to ensure that the Trinity River is not harmed by BOR's partial ownership of Sites, and that is through amendment of Reclamation's Trinity River water permits. The legislative and legal history of the TRD of the CVP is rife with requirements to "do no harm" to the Trinity River and its fishery. The proposed Sites Reservoir clarifies the need for BOR to have its state water permits amended to not harm the Trinity River because under the current regulatory scenario, harm to the Trinity River is inevitable. What Constitutes "Harm" to the Trinity River? State Water Resources Control Board Water Right Order 90-5 [footnote 3: Seew.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/1990/wro90-05.pdf] partly identifies what is "harm" to the Trinity River as it relates to the export of Trinity water for temperature control in the Sacramento River: "IT IS FURTHER ORDERED that Permits 11966, 11967, 11968, 11969, 11970, 11971, 11973, 12364, and 12365 and License 9957, on Applications 5627, 5628, 15374, 15375, 15376, 16767, 17374, 17376, 17375, and 15424, be amended to add a condition as follows:	Order 90-5 is provided by the commentor in the comment. As the Project is not proposing any statutory, legal, contractual, or operational changes in the Trinity River system, and CVP water would not be stored in Sites Reservoir under the Project, no impacts on Trinity River water temperatures would result from the Project.

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	"Permittee shall not operate its Trinity River Division for water temperature control on the Sacramento River in such a manner as to adversely affect salmonid spawning and egg incubation in the Trinity River. Adverse effects shall be deemed to occur when average daily water temperature exceeds 56°F at the Douglas City Bridge between September 15 and October 1, or at the confluence of the North Fork Trinity River between October 1 and December 31 due to factors which are (a) controllable by permittee and (b) are a result of modification of Trinity River operations for temperature control on the Sacramento River. "If the temperatures in the Trinity River exceed 56°F at the specified locations during the specified periods, Permittee shall immediately file with the Chief of the Division of Water Rights a report containing project operational data sufficient to demonstrate that the exceedance was not due to modifications of Trinity River operations for water temperature control on the Sacramento River. If, within fifteen days, the Chief of the Division of Water Rights does not advise Permittee that it is violating this condition of its water right, Permittee shall be deemed not to have caused the exceedance in order to control temperature on the Sacramento River. "This term is not to be construed as interfering with the U. S. Department of Interior Andrus Decision dated January 14, 1981, relative to Trinity River releases." The Trinity River protections found in WR 90-5 do not provide any protection from other projects or purposes such as diversions to Sites Reservoir, hydropower production or water supply. Water Right Order 90-5	

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	only limits BOR's export of Trinity River to do no harm to Trinity River salmon because of operations for temperature control on the Sacramento River. A more comprehensive definition of harm to the Trinity River can be found in the North Coast Regional Water Quality Control Board's "Water Quality Control Plan for the North Coast Region" (North Coast Basin Plan).[Footnote 4: Water Quality Control Plan for the North Coast Region" Footnote 5, Table 3-1, page 3-8.00: Accessed atw.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/083105- bp/04_water_quality_objectives.pdf Daily Average Not to Exceed Period River Reach 60°F July 1- Sept 15 Lewiston to Douglas City Bridge 56°F Sept 15-Oct 1 Lewiston to Douglas City Bridge 56°F Oct 1- Dec 31 Lewiston to North Fork Confluence] While the North Coast Basin Plan Trinity River 56° temperature objective is included in WR Order 90-5, the 60°F July 1- September 15 temperature objective is not. BOR has made it very clear that because the 60°F objective is not included in WR Order 90-5, that BOR is not required to meet it and clearly does not meet it in many years such as 2021. Therefore, Water Right Order 90-5 is not adequately protective of Trinity River salmon. In this case, the 60°F temperature objective is intended to protect holding adult spring Chinook salmon prior to spawning. Trinity River spring Chinook were recently listed as threatened under the California Endangered Species Act. The lack of full protection for the Trinity River from diversions for various uses other than temperature control on the Sacramento River leaves the	

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	Sites Project Authority vulnerable to criticism that the Project will harm the Trinity River and the Lower Klamath River below the Trinity confluence because BOR will have the ability to move Trinity water into Sites. How can this be fully mitigated? The answer lies with the history of Water Right Order 90-5 dating back to 1989 and the need for promises to be kept, not broken. In 1989, State Water Resources Control Board Water Quality Order 89-18 [Footnote 5: Seew.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/1989/wq1989_18.pdf] directed that meeting Central Valley Basin Plan temperature objectives for the Sacramento River would be met through the water rights process, not Waste Discharge Requirements. It directed that the water right hearing for Water Right Order 90-5 be initiated to amend BOR's CVP water rights to include temperature protection for Sacramento River salmon. The County of Trinity participated in the hearing, concerned that protections for Sacramento salmon might harm the Trinity River. As a result, the SWRCB made the following finding (page 17): "The State Board should conduct water right proceedings to consider whether the Bureau's permits should be modified to establish temperature limitations or other conditions to assure adequate water quality for protection of the fishery in the Trinity River." The SWRCB directed that a water right hearing on Trinity River temperatures be held (page 18): "IT IS FURTHER ORDERED that the Division of Water Rights shall initiate proceedings for the State Board to consider modifying the Bureau's permits for the Trinity River Unit of the Central Valley Project to set appropriate	

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	conditions to maintain water quality in the Trinity River. The State Board may review Trinity River water quality in the same water rights proceedings as it reviews upper Sacramento River water quality, or in subsequent proceedings to the extent that the issues may properly be considered separately." The commitment to protect the Trinity River water quality in Water Quality Order 89-18 was also carried into Water Right Order 90-5 (page 31): "We have already announced our intention to conduct a water right proceeding to consider whether the Bureau's Trinity River water rights should be modified to establish temperature limitations and other controls on water quality to protect the fishery in the Trinity River. See Order No. WQ 89-18. The proceedings on the Bureau's Trinity River water rights are expected to be commenced late this year. Our hearing record -for this decision is not adequate to set fishery protections for the Trinity River." Unfortunately, the water right hearing to consider a full range of temperature protection measures for amendment of BOR's water permits has yet to be scheduled thirty-three years later. The BOR has expressed opposition to imposing any additional terms and conditions on its Trinity River water rights, calling it "unnecessary and ill-advised." BOR's objection to conforming its Trinity River water permits to the North Coast Basin Plan water quality objectives stands as a roadblock in assuring that Sites Reservoir will not harm the Trinity River's fishery resources. If BOR opposes updating its Trinity River water permits, objections to Sites are valid and will be the basis of water right protests. A mitigation measure must therefore be added to the approvals for the Record of Decision,	

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	Notice of Determination, water rights and operating plan for the proposed Sites Reservoir as follows: "Sites Reservoir operations by the Sites Project Authority and its members do not cause harm to the Trinity River, as defined by violation the Trinity River Temperature Objectives contained in the 'Water Quality Control Plan for the North Coast Region' [Footnote 6: Ibid]. Construction permits shall not be issued, and construction shall not commence until the State Water Resources Control Board amends the Bureau of Reclamation's Trinity River Water Permits to implement North Coast Basin Plan temperature objectives for the Trinity River."	
64-1	Office of Environmental Health Hazard Assessment's (OEHHA) review focused on potential freshwater (cyanobacterial) harmful algal blooms (HABs). OEHHA's Fish, Ecotoxicology, and Water Section staff contribute time and expertise to HABs statewide through the California Cyanobacterial and HAB (CCHAB) Network and the Interagency HAB-related Illness Workgroup as well as other regional and interstate technical efforts.	This comment, which provides a brief summary of the scope of review by the Office of Environmental Health Hazard Assessment (OEHHA), is noted. Revisions to the EIR/EIS were made in response to OEHHA's comments as noted in our responses to comments below (64-2 to 64-25). OEHHA's regulatory role is included in the EIR/EIS in Appendix 4A, Regulatory Requirements, and Chapter 6, Surface Water Quality.
64-2	Chapter 2: Project Description and Alternatives Section 2.5.2.4. Operations and Management Plans We[Office of Environmental Health Hazard Assessment] recommend that Recreation and Reservoir Management Plans explicitly include the following: - Monitoring for both planktonic and benthic HABs including: (1) frequent visual assessments (such as weekly year-round) and (2) sampling for cyanobacteria and cyanotoxins (such as every two weeks during recreational season and monthly during winter) as well as any time year-round when visual indicators of HABs are present, with samples collected from shore at shoreline recreational sites and in open water areas likely used for boating or fishing.	In addition to water quality monitoring and implementation of the Reservoir Management Plan (RMP) harmful algal blooms (HABs) action plan, a measure for general informational signage on HABs has been added to the RMP in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, of the Final EIR/EIS. Under this measure, general informational signage on HABs will be placed in visible locations around the reservoir, as well as at Peninsula Hills Recreation Area, Stone Corral Creek Recreation Area, boating kiosks, the day-use boat ramp, and/or parking areas. The signage will include basic information regarding what HABs are, how to recognize a bloom, the potential health effects of cyanotoxins, the common signs and symptoms of exposure to cyanotoxins, how to avoid exposure to cyanotoxins during recreation, and information about the potential

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	- Actions necessary to address potential HAB-related human and animal impacts such as through posting general awareness or potential advisory signage for HABs at recreational areas, education on Healthy Water Habits, and the use of personal protective equipment (as needed) for Reservoir personnel.	health risks to pets. All reservoir personnel will be made aware of the potential health risks of cyanotoxins and will be provided with the appropriate personal protective equipment, as needed, to reduce the potential for exposure to cyanotoxins. This text revision does not change any impact determinations or conclusions. As noted in Appendix 2D of the Final EIR/EIS, the RMP is, and will continue to be, revised throughout the operation of the reservoir. Revisions to the RMP will account for changes to operations, site-specific conditions, adaptive management actions and decisions, and future changes to regulations or methodologies for evaluating water quality constituents. Refinement of the RMP may occur during consultation with agencies. The monitoring period for HABs was revised in Appendix 2D of the Final EIR/EIS from April 15 through October to April through November. Visual monitoring for HABs will occur monthly, at minimum, April through November—a period which would likely provide the highest benefit and when blooms would be most likely to occur. Water quality monitoring for cyanobacteria and cyanotoxins will also occur during that period, as appropriate, to confirm the presence of toxic cyanobacteria and to inform posting of planktonic and benthic advisory signage. Although it is acknowledged that HABs could occur outside of the April through November period, they are most likely to occur in spring through early-/mid-fall given variables conducive to blooms (e.g., water temperature, reservoir stratification). Monitoring during this 8-month period is also important because this is when recreational exposure to cyanotoxins would be most likely as more recreationists would be expected during these months of the year relative to any other. Further, although releases from Sites

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		Reservoir could occur at any time of year, most releases would be made in Dry and Critically Dry Water Years from May to November. Therefore, monitoring for HABs would be of most benefit during this period to help inform I/O tower port selection to avoid releasing high concentrations of cyanobacteria and cyanotoxins. Appendix 2D, Section 2.D.3.1, Harmful Algal Blooms, of the Final EIR/EIS was revised to make it clear that once toxic cyanobacteria are confirmed in a suspected bloom, visual and water quality monitoring will continue weekly until the Caution action trigger level is reached, at which point monitoring and sampling frequency will increase to two times per week or as advised based on coordination with the State Water Resources Control Board (State Water Board) and/or Central Valley RWQCB. The increase in monitoring frequency was made to better take into account the potential for rapid cyanobacterial population growth rates during the warmer months.
64-3	Chapter 6: Surface Water Quality Section 6.2.2.3. Nutrients, Organic Carbon, and Dissolved Oxygen The text states, "The initial filling of a new reservoir results in the release of nutrients from newly flooded soil and decomposing flooded vegetation. This release declines somewhat as the reservoir ages (Gunnison et al., 1984; Maavara et al., 2020:108)." This influx of nutrients into water that is being held in a reservoir, where increased light availability, reduced flow, and increased temperatures are likely, may overall enhance opportunities for HABs to occur.	It is acknowledged in Chapter 6, Surface Water Quality, Section 6.4, Impact Analysis and Mitigation Measures, that nutrients in the reservoir would be available in non-limiting concentrations sufficient for the formation and sustainment of HABs both during the initial filling of the reservoir (see Impact WQ-1) and in the long term (see Impact WQ-2). It is also identified in Section 6.2.2.6, Harmful Algal Blooms, that nutrient availability is an important environmental factor that contributes to the formation of HABs.
64-4	Section 6.2.2.6. Harmful Algal Blooms	Text has been added to Chapter 6, Surface Water Quality, Section 6.2.2.6, Harmful Algal Blooms, of the Final EIR/EIS to note that there are species differences with regard to tolerance of cooler water

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	The description of environmental factors that influence HABs does not account for the wide variety of planktonic and benthic cyanobacteria that can occur in California waters. While many planktonic species do favor the temperature, light, and flow conditions noted, there are planktonic (such as Planktothrix) and benthic taxa (such as Microcoleus, Phormidium, and Anabaena) that occur in lower water temperatures, lower light, or higher flow than noted (see Section 3.3; ITRC 2021) [ATTMT 1 has reference entry].	temperatures, lower light levels, and water flow. In addition, text was added to Section 6.2.2.6 to generally describe that cyanobacterial blooms may be planktonic or benthic and to note common genera of each bloom type. This modification is in the environmental setting and clarifies information already contained in the document regarding HABs. This modification does not change conclusions or impact determinations identified in the analysis.
64-5	Section 6.2.2.6. Harmful Algal Blooms The description of cyanobacteria focuses on characteristics related to planktonic cyanobacteria, particularly Microcystis. As noted above, numerous planktonic and benthic cyanobacteria may occur, including some that grow attached to benthic substrates, aquatic plants, and natural or artificial structures within the water column as well as some that are present in sub-surface layers with lake stratification. This variety should be addressed when considering potential HAB occurrence and necessary monitoring, management, and public heath actions.	The analysis in Chapter 6, Surface Water Quality, is focused on planktonic cyanobacteria as they have been well-researched and may be more likely to occur near and be drawn into the I/O tower given that benthic cyanobacteria generally require a substrate for attachment. Further, the proliferation of benthic cyanobacteria requires greater water transparency for light to penetrate to benthic areas and thus is more common in oligotrophic surface waters. The Authority and Reclamation understand that blooms of both planktonic and benthic cyanobacteria (and associated toxins) could proliferate in Sites Reservoir. As discussed in Chapter 6, conditions in Sites Reservoir favorable to the proliferation of HABs would likely occur. If cyanobacteria/cyanotoxins were present in reservoir releases, potential downstream effects on water quality would not be expected because concentrations of cyanobacteria and cyanotoxins would be greatly diluted when eventually discharged into the Sacramento River, and cyanotoxins would undergo biodegradation and, to some degree, photodegradation, as well as adsorb to sediment. Furthermore, the RMP, described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, includes monitoring for planktonic as well as benthic HABs and coordination with the State Water Board and the Central Valley Regional Water Board for posting benthic HABs signage. In addition, text has been added to Appendix 2D of the Final EIR/EIS to clarify that the RMP will be modified over

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		time through adaptive management. The RMP is and will continue to be revised throughout the operation of the reservoir. Text has also been added to Section 2D.3.1, Harmful Algal Blooms, in Appendix 2D noting that if there are HABs near the I/O tower, water samples will be taken at multiple depths and locations in the vicinity of the tower and downstream to assess cyanobacteria and cyanotoxin concentrations. These revisions do not change conclusions or the less-than-significant impact determination identified in the analysis for HABs. Please see response to comment 64-4 regarding text added to Chapter 6 related to planktonic and benthic cyanobacteria.
64-6	Section 6.2.2.6. Harmful Algal Blooms We [Office of Environmental Health Hazard Assessment] recommend noting that [we have] developed Notification Level Recommendations for Four Cyanotoxins in Drinking Water as well a.ca.gov/water/crnr/notice-availability-notification-levelrecommendations- four-cyanotoxins-drinking-water).	A reference to California Office of Environmental Health Hazard Assessment's Notification Level Recommendations for Four Cyanotoxins in Drinking Water has been added to Chapter 6, Surface Water Quality, Section 6.2.2.6, Harmful Algal Blooms, of the Final EIR/EIS, and the recommendations have been added to Appendix 4A, Regulatory Requirements. This modification is in the environmental setting and clarifies information already contained in the document regarding HABs. This modification does not change conclusions or impact determinations identified in the analysis.
64-7	Section 6.3.2.2. Temporal Shift The temporal shift between time of diversion and time of release could also contribute to release of water with a higher likelihood of HABs.	The temporal shift discussed in Section 6.3.2.2, Temporal Shift, of Chapter 6, Surface Water Quality, is addressing the issue of the potential for higher concentrations of specific water quality constituents (i.e., electrical conductivity, pesticides, nutrients, and metals) in the Sacramento River at the time of diversion to Sites Reservoir relative to concentrations in the Sacramento River at the time of release from Sites Reservoir. Accordingly, this discussion is not applicable to cyanobacteria, cyanotoxins, or HABs because concentrations of cyanobacteria and cyanotoxins in the Sacramento

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		River diversions at the time of diversion are not expected to be higher than the potential concentrations in Sites Reservoir releases.
64-8	Section 6.3.2.8. Harmful Algal Blooms It is unclear how the likelihood of HABs occurring within Sites Reservoir during operations is assessed based on the information presented in this section. Please provide more rationale for what the comparison of intake and water surface elevations is expected to show. Cyanobacteria and cyanotoxins can be found in deeper sub-surface waters depending on type, genus, water conditions, etc. See Section 9.1 Optimizing The Location And Depth For The Offtake (Chorus and Welker, 2021 [ATTMT 1 has reference entry]; Chapter 9) for context of vertical distribution and consideration of discharge depth. This variability is also shown with real-time profiling to a maximum of 75-90 meters in Detroit Lake, a drinking water source for Salem, Oregon r.water.usgs.gov/projs_dir/habs/lakeprofiler.html?site=444306122144600). Department of Water Resources' Pacheco Pumping Plant monitoring data also provides a useful example of monitoring for HABs at depth for water intake management c4gov.water.ca.gov/dynamicapp/QueryF?s=PPP).	As described in the Chapter 6, Surface Water Quality, Section 6.3.2.8, Harmful Algal Blooms, the assessment for the potential for (or likelihood of) HABs to occur in Sites Reservoir during operations considered environmental drivers of bloom formation, including water temperature (modeled monthly average water temperatures), nutrients, and water column stability. The comparison of approximate intake elevation and reservoir water surface elevations was used to generally assess the potential for potentially high concentrations of cyanobacteria and cyanotoxins to be released from Sites Reservoir if HABs were to occur in the vicinity of the I/O tower and low-level intake in Dry and Critically Dry Water Years and when releases are made from operational dead pool. Text indicating this has been added to the Chapter 6, Section 6.3.2.8, Harmful Algal Blooms, of the Final EIR/EIS to provide clarification. Text has also been added to Chapter 6, Section 6.2.2.6, Harmful Algal Blooms, providing examples of species of cyanobacteria that compete well with other phytoplankton at lower light intensities and thus can grow relatively well deeper in the water column. However, planktonic cyanobacteria are generally concentrated closer to the water's surface in the epilimnion where there is more light. If benthic HABs occur in Sites Reservoir, they are expected to be more concentrated near the shoreline. I/O tower tier selection for releases from Sites Reservoir would be made to avoid releasing high concentrations of cyanobacteria and cyanotoxins. Tier selection would be informed by water quality monitoring for cyanobacteria and cyanotoxins at multiple depths and locations in the vicinity of the I/O tower as well as downstream if HABs appear to be present there based on visual monitoring, as part of the HABs Action Plan (Appendix 2D, Best

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		Management Practices, Management Plans, and Technical Studies, Section 2D.3.1, Harmful Algal Blooms). Please see Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower. Releases from the I/O tower to Stone Corral Creek and from Golden Gate Dam to Funks Creek, which would not undergo dilution of cyanobacteria and cyanotoxins like other downstream locations, would be informed by monitoring for cyanobacteria and cyanotoxins in those creeks as part of the Stone Corral Creek and Funks Creek Aquatic Study Plan (Aquatic Study Plan) (Appendix 2D, Section 2D.4, Stone Corral Creek and Funks Creek Aquatic Study Plan and Adaptive Management). The monitoring and adaptative management for those creeks is designed to maintain fish in good condition consistent with California Fish and Game Code 5937. It is anticipated that the flows to these creeks will be managed to reflect the historical hydrograph and seasonal conditions as characterized by the aquatic studies. Sites Reservoir releases will thus likely occur in late fall, winter, and early spring at times when HABs are less likely to occur in the reservoir. Releases to the creeks could be curtailed if, relative to baseline conditions in the creeks, high concentrations of cyanobacteria or cyanotoxins were present in the reservoir release. Additional detail was added to the analysis under Impact WQ-2 with regard to potential effects on beneficial uses/water quality in the TC Canal, GCID Main Canal, and Colusa Basin Drain (CBD) from reservoir HABs. In TC Canal, GCID Main Canal, and CBD, where there would be less dilution of Sites Reservoir releases relative to the Sacramento River, cyanobacteria and cyanotoxins are expected to have limited effect due to controlled releases from the I/O tower, aquatic algaecides routinely used by Tehama Colusa Canal Authority and

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		GCID, lack of HAB-conducive conditions in CBD, and biotic and abiotic processes (i.e., biodegradation, adsorption to sediment, and, to some degree, photodegradation), which will reduce the concentration of cyanotoxins in the water column. The impact analysis does not maintain that no cyanobacteria or cyanotoxins would be released from the reservoir. Please refer to response to comment 64-5 regarding revisions to the RMP and HABs monitoring.
64-9	Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation The discussion about cyanotoxin degradation is primarily applicable for extracellular cyanotoxins, while most cyanotoxins (with the exception of cylindrospermopsin) are primarily intracellular while the cell is intact. As shown with the Klamath River, long-distance transport of cyanobacterial cells and intracellular cyanotoxin can occur following planktonic HABs in reservoirs (Otten et al., 2015 [ATTMT 1 has reference entry]). As far as the statement about dilution of discharges, these are living organisms that grow, reproduce, can act as source population, and for some taxa, change their buoyancy, not chemicals that can equally distribute within the water column.	Chapter 6, Surface Water Quality, Section 6.2.2.6, Harmful Algal Blooms, explains that cyanotoxins typically remain within cyanobacteria until the cells die or rupture. The comment seems to object to the HABs impact analysis indicating that if cyanobacteria and cyanotoxins were released from the reservoir they would be diluted when eventually discharged to the Sacramento River. This is a valid description of the fate of cyanobacteria and cyanotoxins if they are ever released, regardless of the fact that cyanobacteria grow, reproduce, alter their buoyancy, or may be transported long distances. It is valid because once releases are made, the releases would enter different receiving waters (e.g., TC Canal, CBD, Sacramento River) and experience dilution. Text has been added to Section 6.2.2.6, Harmful Algal Blooms, of Chapter 6 regarding overwintering of cyanobacteria and potential "seed" populations. This text addition does not change conclusions or impact determinations identified in the analysis.
64-10	Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation Occurrence of HABs with elevated cyanotoxins (including Danger advisory levels) have occurred in California water bodies during winter (see.y.ca.gov/habs/where/freshwater_events.html) and cells/toxins may occur in deeper waters.	Section 6.2.2.6, Harmful Algal Blooms, of Chapter 6, Surface Water Quality, notes that, in the Central Valley, most HABs occur in late spring through early fall but that HABs can also begin earlier in the year or continue year-round in some locations. Text in the impact analysis is consistent with this text.

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64-11	Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation Native and invasive aquatic plants can compete with cyanobacteria for light and nutrients. Actions to address aquatic plants should consider potential to alter conditions for cyanobacterial blooms as well.	Aquatic plant control as part of the RMP will be focused on nonnative invasive species, as discussed in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. Control of these species is important because they can outcompete native species, have adverse effects on aquatic habitats, obstruct waterways and navigational channels, and block agricultural and municipal water intakes. Native aquatic plant species will not be targeted.
64-12	Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation In addition to HAB advisory signage (when warranted), ongoing outreach efforts about potential HABs through general awareness signage and other communication media (e.g., social media, newsletters) would be helpful in increasing public awareness and potentially reducing HAB exposure.	In addition to water quality monitoring and implementation of the HABs Action Plan, a measure for general informational signage on HABs has been added to the RMP in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, of the Final EIR/EIS. Under this measure, general informational signage on HABs will be placed in visible locations around the reservoir, as well as at Peninsula Hills Recreation Area, Stone Corral Creek Recreation Area, boating kiosks, the day-use boat ramp, and/or parking areas. The signage will include basic information regarding what HABs are; how to recognize a bloom; the potential health effects of cyanotoxins; the common signs and symptoms of exposure to cyanotoxins; how to avoid recreational exposure to cyanotoxins; information about the potential health risks to pets; and where to find additional resources regarding HABs. All reservoir personnel will be made aware of the potential health risks of cyanotoxins and will be provided with the appropriate personal protective equipment, as needed, to reduce the potential for exposure to cyanotoxins. This text revision does not change any impact determinations or conclusions. Please refer to the response to comment 64-5 regarding adaptive management of the RMP and the associated text addition to Appendix 2D of the Final EIR/EIS.
64-13	Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation	This comment makes a statement regarding vertical bloom location and movement of some cyanobacteria taxa within a waterbody. The

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	Some cyanobacteria taxa bloom in sub-surface layers during water body stratification and can then move to the surface with water body turnover.	Authority and Reclamation acknowledge that cyanobacteria can form surface scums or accumulate below the water's surface. Text was added to Section 2D.3.1, Harmful Algal Blooms, in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, for the incorporation of water sampling at multiple depths and locations in the vicinity of the I/O tower to assess cyanobacteria and cyanotoxin concentrations. This text addition does not change the conclusion or impact determination identified in the analysis.
64-14	Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation Cyanobacterial cells can senesce and die-off with associated drop in dissolved oxygen at times other than late fall. There can be a seasonal succession as different taxa become dominant (Nwosu et al., 2021 [ATTMT 1 has reference entry]).	This comment makes a general statement regarding the timing of cyanobacterial senesce and die-off and seasonal succession and dominance. Clarifying text has been added to the discussion in Chapter 6, Surface Water Quality, for Impact WQ-2 indicating that a reduction of dissolved oxygen levels in the reservoir may be expected in late fall generally due to die-off of cyanobacteria and/or algae. This text addition does not change the conclusion or impact determination identified in the analysis.
64-15	Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation Some cyanobacteria taxa grow in water at cooler temperatures (including under ice) so, the 66°F minimum noted is not applicable across all water bodies and all cyanobacteria taxa.	Section 6.2.2.6, Harmful Algal Blooms, in Chapter 6, Surface Water Quality, has been revised in the Final EIR/EIS to note that some cyanobacterial species can tolerate cooler water temperatures. This text addition does not change the conclusion or impact determination identified in the analysis.
64-16	Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation Potential transport of cyanobacterial cells or cyanotoxins in aerosols and human nasal exposure as shown in Florida (Schaefer et al., 2020 [ATTMT 1 has reference to entry]) could extend potential HAB impacts beyond the reservoir.	The commenter indicates that cyanobacteria/cyanotoxins could have impacts beyond the reservoir via aerosolization. Human exposure to cyanotoxins via aerosol, as well as other potential exposure pathways, is discussed in Chapter 27, Public Health and Environmental Hazards.
64-17	Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation Response of cyanobacteria to water flow increases are specific to type (planktonic or benthic) and taxa of cyanobacteria. In addition, increased	The comment is not clear what text is being referenced in the HABs impact analysis regarding flow. It is assumed the reference is to the discussion for the Yolo Bypass and the Delta, where text indicates that habitat releases from Sites Reservoir to Yolo Bypass would not be

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	flow could flush cyanobacteria cells into downstream areas where potential impacts could occur.	expected to result in increases in HABs in the Delta, in part because existing flows in the northern Delta would be high enough to prevent the formation of HABs. The response of cyanobacteria to water flow increases is specific to the type of cyanobacteria (planktonic or benthic) and taxa. Microcystis are the most common cyanobacteria found in blooms in the Delta, and generally low flows (low turbulence) and long hydraulic residence times are two of the primary environmental variables favoring Microcystis blooms in the Delta (Lehman et al. 2013, Berg and Sutula 2015). Generally, benthic mats occur under lower flow conditions (California North Coast Regional Water Quality Control Board 2022). While increased flow could flush cyanobacterial cells into downstream areas, it would be speculative to say that this would result in increased blooms in those downstream areas, given the multiple variables that influence HABs (e.g., higher water temperatures, greatly reduced flows) to create conditions conducive to blooms can be site-specific.
64-18	Section 6.4, sub-section on HABs and Invasive Aquatic Vegetation The HAB portal incident map only provides voluntarily reported HABs. Absence of reported HABs from Yolo Bypass to that map should not be interpreted as a lack of HAB occurrence. Direct contact with CDFW Wildlife Area or Yolo Basin Foundation staff about observations or monitoring for HABs would be potentially helpful in clarifying this.	Text was added to Chapter 6, Surface Water Quality, of the Final EIR/EIS noting that, as part of the Yolo Bypass Fish Monitoring Program, Microcystis has been observed in the Yolo Bypass, but no bloom sightings were reported (Interagency Ecological Program et al. 2021). This text does not change the conclusion or impact determination identified in the analysis. The text in Chapter 6 acknowledges that that per the voluntary reports database of HABs there are no reports of HABs in Yolo Bypass.
64-19	Chapter 27, Public Health and Environmental Hazards Sections 27.2.3.2 and 27.3.4, Harmful Algal Blooms The environmental conditions identified for HABs do not address the variety of cyanobacterial types and taxa found in California water bodies that could occur in the future reservoir.	Chapter 6, Surface Water Quality, Section 6.2.2.6, Harmful Algal Blooms, provides more detail on cyanobacteria, including identification of the most commonly occurring genera and the most commonly found cyanotoxins in the United States. Also, please see responses to comments 64-4 and 64-5 regarding additional description of cyanobacteria and planktonic and benthic HABs added

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		to Chapter 6. Text has been added to Chapter 27, Public Health and Environmental Hazards, Section 27.2.3.2, Harmful Algal Blooms, to clarify. The additional description does not change or modify the impact determinations or conclusions of Chapter 6 or Chapter 27.
64-20	Impact HAZ-7: Result in an impact on public health due to an increase in harmful algal blooms Water depth, dilution, and toxin degradation may not be sufficient to prevent discharge of cyanobacteria and cyanotoxins given changes in buoyancy or presence of benthic cyanobacteria, the potential to act as a seed population, and the presence of more stable intracellular toxin (as well as other factors).	The analysis in Chapter 27, Public Health and Environmental Hazards, Impact HAZ-7 does not conclude that potential releases of cyanobacteria and cyanotoxins could be prevented altogether, as the commenter seems to imply. Rather, it is acknowledged that cyanobacteria and cyanotoxins from Sites Reservoir may be present in the releases but that the reservoir depth from which releases could occur would be informed through water quality monitoring as part of the RMP and that releases from lower in the water column would generally contain lower concentrations of cyanobacteria and cyanotoxins. Further, the risk to public health from potential exposure to cyanotoxins would be reduced through posted public warnings, as necessary.
64-21	Impact HAZ-7: Result in an impact on public health due to an increase in harmful algal blooms We [Office of Environmental Health Hazard Assessment] recommend that the recreational HAB monitoring plan include HAB monitoring year-round although the frequency could be reduced (such as changing from bi-weekly to monthly) for the winter period. Monitoring should consider the potential for benthic cyanobacteria, which may not be detected with surface water grab samples. Identification of cyanobacteria taxa present by microscopy can inform what toxins may be produced, and also help understand the overall dynamics in the system, such as cyanobacterial succession over time.	Please refer to response to comment 64-2 regarding the RMP text changes and HABs monitoring. Also, note that the RMP (Appendix 2D, Best Management Practices, Management Plans, and Technical Studies) includes monitoring for benthic HABs and coordination with the State Water Board and the Central Valley Regional Water Quality Control Board for posting benthic HABs signage. The RMP will continue to be revised throughout the operation of the reservoir. Revisions to the RMP will account for changes to operations, site-specific conditions, adaptive management actions and decisions, and future changes to regulations or methodologies for evaluating water quality.
64-22	Impact HAZ-7: Result in an impact on public health due to an increase in harmful algal blooms	While the proposed elements of the RMP noted in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies,

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	Real time monitoring for cyanobacteria at multiple depths from which water may be released has been successfully implemented at other West Coast reservoirs r.water.usgs.gov/projs_dir/habs/lakeprofiler.html?site=444306122144600;c4 gov.water.ca.gov/dynamicapp/QueryF?s=PPP). The assumption that the release of deeper water is sufficient to prevent discharge of cyanobacteria and cyanotoxins is inconsistent with data from these other locations and published research on potential cyanobacterial occurrence at depth (see Section 9.1 Optimizing The Location And Depth For The Offtake in Chorus and Welker, 2021[ATTMT 1 has reference entry]).	Section 2D.3, Reservoir Management Plan, of the Final EIR/EIS do not currently include real-time monitoring, the RMP will continue to be revised throughout the operation of the reservoir. Future revisions to the RMP will account for changes to operations, site-specific conditions, adaptive management actions and decisions, and future changes to regulations or methodologies for evaluating water quality constituents. Refinement of the RMP may also occur during consultation with agencies. Please see response to comment 64-20 regarding the commenter's assertion that the HAB analysis indicates that the release of cyanobacteria and cyanotoxins from Sites Reservoir can be prevented by releasing from deeper in the water column. In addition, text was added to the HAB action plan component of the RMP (Appendix 2D) indicating that if there are HABs near the I/O tower, water sampling will occur at multiple depths and locations in the vicinity of the I/O tower and downstream, including Stone Corral Creek and Funks Creek (per the Aquatic Study Plan) to assess cyanobacteria and cyanotoxin concentrations.
64-23	Impact HAZ-7: Result in an impact on public health due to an increase in harmful algal blooms Given our [OEHHA's] experience with HABs and HAB-related human and animal illnesses at other California reservoirs, it is unclear that the proposed monitoring and management actions are sufficient to prevent potential human or animal impacts from HABs. We recommend that potential HAB occurrence across a much broader range of environmental conditions and deeper water depths should be considered. A more robust monitoring and outreach program for HABs should be incorporated for any reservoir recreational use. Assessment of cyanobacteria and cyanotoxins at the	Please see response to comment 64-22 regarding changes made to the HAB monitoring component of the RMP in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. HABs-related public health analysis in Chapter 27, Public Health and Environmental Hazards, takes into consideration human health. Section 2D.3, Reservoir Management Plan, identifies multiple locations where advisory warning signs would be placed should "trigger levels" of cyanobacteria or cyanotoxins be reached, based on water quality monitoring. In addition to water quality monitoring and implementation of the HABs action plan, general informational signage on HABs will be placed in visible locations around the

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	appropriate water depths prior to discharge (or via ongoing real-time instrumentation data) would allow for more informed evaluation of potential downstream impacts.	reservoir, as well as at Peninsula Hills Recreation Area, Stone Corral Creek Recreation Area, boating kiosks, the day-use boat ramp, and/or parking areas. The signage will include basic information regarding what HABs are; how to recognize a bloom; the potential health effects of cyanotoxins; the common signs and symptoms of exposure to cyanotoxins; how to avoid recreational exposure to cyanotoxins; and information about the potential health risks to pets. All reservoir personnel will be made aware of the potential health risks of cyanotoxins and will be provided with the appropriate personal protective equipment, as needed, to reduce the potential for exposure to cyanotoxins. This text revision does not change any impact determinations or conclusions.
64-24	Impact HAZ-8 mentions potential impacts to Reservoir personnel from mosquitos, but those staff are not identified in the evaluation of potential HAB impacts under HAZ-7. We [OEHHA] recommend you consider potential occupational exposure to cyanobacteria/cyanotoxins for Reservoir personnel with direct water contact as well as those working nearby that could be exposed to HAB-related aerosols. HAB outreach and education, appropriate personal protective equipment (when needed), and advisory signage should be provided to Reservoir personnel, in addition to the recreating public.	Text has been added to Chapter 27, Public Health and Environmental Hazards, Impact HAZ-7 indicating that Sites Reservoir personnel may also be subject to exposure to cyanotoxins at the reservoir. Text has also been added to the HAB requirements for the RMP in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, Section 2D.3.1, Harmful Algal Blooms, indicating that all reservoir personnel will be made aware of the potential health risks of cyanotoxins and will be provided with the appropriate personal protective equipment, as needed, to reduce the potential for exposure to cyanotoxins. These text revisions do not change any impact determinations or conclusions. Please also see response to comment 64-23 regarding additional general advisory signage that will be posted as part of the RMP.
64-25	[Attachment 1: List of Referenced Cited by OEHHA]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
65-1	Our [Northern California Water Association] comments, rather than discussing potential impacts, encourages a look at Sites Reservoir through a	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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	lens where the significant environmental benefits are fully seen and acknowledged. Through this lens, Sites Reservoir offers a new and modern approach for the environment by developing a water asset that can be used in a flexible manner for the benefit of fish and wildlife in the Sacramento Valley and the Delta. For this reason, there is strong support from every part of the Sacramento River Basin. As Sacramento River Basin water resources managers look to serve multiple benefits in the future, including fish and wildlife, farms, cities and rural communities, the importance and need for Sites Reservoir becomes clear. Sites Reservoir is an innovative 21st century water project: an off-stream regulating reservoir that can store water for the future by capturing it during high runoff periods, and then releasing water for various beneficial uses at a later time. With its location upstream of the Delta and near the Sacramento River, water in Sites Reservoir would serve multiple benefits in the Sacramento River Basin, as well as the Delta and the rest of the state. Recent dry years have shown the value that similar off-stream reservoirs, such as Diamond Valley and Los Vaqueros, provide California communities and regional water management.	
65-2	Sites Reservoir would be a dramatic enhancement to California's water system and the first storage project in California with a dedicated supply for the environment. This facility would provide multiple benefits to improve aquatic habitat conditions and withstand dry year conditions. This reservoir would be operated to accommodate and address the uncertainties created by a changing climate and improve environmental and water supply system resilience. Sites Reservoir can provide a freshwater ecosystem water budget that would help provide flexibility and make water available during drier years--which would help ensure water availability for the ecosystem. Most importantly, Sites Reservoir would significantly improve the state's water	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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	management system in drier periods and restore much needed flexibility and reliability that have been lost in the system.	
65-3	Recent climate studies have shown that California's winter runoff is likely to remain similar in volume but come in fewer months of the year, concentrating runoff and increasing flood risks. Adapting to this challenge requires infrastructure that can store surplus water when it is available and deploy it for the ecosystem and human uses when water is not available. Sites Reservoir is one of the best opportunities to re-imagine our water system in the 21st century, prepare for future climate variability, and add value to our current water system by providing high-quality water to enhance the environment, natural infrastructure, public safety, the economy, and quality of life for Californians.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
66-1	I would appreciate confirmation that you have received the comments and exhibits.	The Authority and Reclamation received all comments and exhibits associated with comment letter 66.
66-2	Unfortunately, our review of the RDEIR/SDEIS demonstrates that the document fails to comply with the requirements of the California Environmental Quality Act ("CEQA") and National Environmental Policy Act ("NEPA"). In particular, the RDEIR/SDEIS fails to consider a reasonable range of alternatives, fails to use a stable and accurate project description, uses an inaccurate environmental baseline, and fails to adequately account for and assess impacts of the project in light of climate change. Equally important, the RDEIR/SDEIS also fails to adequately analyze impacts to aquatic species like Chinook salmon, Delta Smelt, and Longfin Smelt, and to terrestrial wildlife including giant garter snake and migratory birds, fails to disclose significant environmental impacts of the project to these and other species, inappropriately defers the formulation of mitigation measures, and proposes inadequate mitigation measures. Despite the fact that state agencies and other commenters raised many of these issues in comments on the August 2017 Draft Environmental Impact Report/Environmental Impact Statement ("DEIR/DEIS"), the RDEIR/SDEIS fails to correct these	Appendix 2A, Alternatives Screening and Evaluation, and Appendix 2B, Additional Alternatives Screening and Evaluation, provide information regarding the development of the reasonable range of feasible alternatives evaluated in the EIR/EIS. Master Response 9, Alternatives Development, provides further information. Chapter 11, Aquatic Biological Resources, analyzes impacts on aquatic species including Chinook salmon, delta smelt, and longfin smelt, in Impacts FISH-2 through FISH-4, FISH-8, and FISH-9. These impact discussions use multiple lines of evidence and quantitative and qualitative evaluations, as described in Section 11.3, Methods of Analysis, including Table 11-4. Please refer to Master Response 5, Aquatic Biological Resources, regarding best available tools and methodologies and the use of modeled results for the impact analysis of effects on aquatic biological resources and the development of

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	errors. Because the RDEIR/SDEIS is riddled with significant errors, inadequacies, and omissions, the lead agencies must make substantial revisions to the document and recirculate the revised document for public review and comment.	mitigation measures. Master Response 5 also discusses the analyses and mitigation measures for longfin smelt and delta smelt. Chapter 10, Wildlife Resources, evaluates impacts on giant gartersnake under Impact WILD-1i and migratory birds in Impacts WILD-1j and WILD-2. Regarding mitigation measures for vegetation, wetland, and wildlife resources, please see Master Response 6, Vegetation, Wetland, and Wildlife Resources. Chapter 10 and Master Response 6 explain how mitigation measures reduce impacts to a less-than-significant level. State agencies and commenters raised issues related to different alternatives evaluated in the 2017 Draft EIR/EIS. As identified in Chapter 1, Introduction, and Appendix 2B, Additional Alternatives Screening and Evaluation, the alternatives evaluated in the 2021 RDEIR/SDEIS and the Final EIR/EIS are different alternatives than those evaluated in the 2017 Draft EIR/EIS, and most of the previously commented issues are no longer applicable, given the refinements to the alternatives. Furthermore, the Authority and Reclamation modified and refined the alternatives as a result of public comments on the 2017 Draft EIR/EIS, as described in Appendix 2B. Finally, Volume 3, Appendix 4A, Reclamation Responses to 2017 Draft EIS Comments, provides responses to the 2017 comments. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the 2017 Draft EIR/EIS.
66-3	78. I. The RDEIR/SDEIS Fails to Consider a Reasonable Range of Alternatives CEQA and NEPA require that the RDEIR/SDEIS consider a reasonable range of alternatives. Cal. Pub. Res. Code §§ 21002, 21061, 21100; tit. 14, Cal. Code	The Authority and Reclamation considered multiple operational scenarios over the course of the Project development that were designed to meet the Project objectives, purpose, and need; enhance Project benefits; and reduce or avoid impacts. The features of

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	Regs. ("CEQA Guidelines") § 15126.6; 42 U.S.C. § 4332; 40 C.F.R. §§ 1502.1, 1502.14, 1508.25(b). However, the RDEIR/SDEIS fails to consider a reasonable range of alternatives because it only considers a single operational alternative, whereas other operational alternatives could reduce or avoid adverse environmental impacts. The failure to include any operational alternatives that could reduce or avoid adverse environmental impacts violates NEPA and CEQA. See, e.g., Citizens of Goleta Valley v. Board of Supervisors, 52 Cal.3d 553, 566 (1990) (EIR must consider a reasonable range of alternatives that offer substantial environmental benefits and may feasibly be accomplished); Muckleshoot Indian Tribe v. U.S. Forest Serv., 177 F.3d 800, 813 (9th Cir. 1999) (NEPA analysis failed to consider reasonable range of alternatives where it "considered only a no action alternative along with two virtually identical alternatives"); Natural Res. Def. Council v. U.S. Forest Serv., 421 F.3d 797, 813 (9th Cir. 2005).	alternatives, including Sites Reservoir capacity, conveyance systems, and operational scenarios, were conceptually developed and refined over time to maximize the achievement of the objectives. This process is described in Appendix 2A, Alternatives Screening and Evaluation, and Appendix 2B, Additional Alternatives Screening and Evaluation. Please see Master Response 9, Alternatives Development, regarding operational criteria development.
66-4	State agencies and members of the public, including many signatories to this letter, have repeatedly emphasized the need to analyze more than one operational alternative, first in scoping comments prior to release of the DEIR/DEIS, and subsequently in comments that the DEIR/DEIS failed to consider a reasonable range of alternatives because it only included a single operational alternative. For instance, the California Department of Fish and Wildlife ("CDFW") previously wrote that, ...the DEIR/DEIS does not include potentially feasible alternatives that would avoid or substantially lessen the Project's significant environmental impacts. CDFW continues to recommend that the DEIR/DEIS should include a more robust range of operational alternatives, as discussed in its comments to the NOP, provided on March 21, 2017. Of the five alternatives in the DEIR/DEIS, many of them are similar with respect to water operations (e.g. diversions, bypass criteria, deliveries are the same across alternatives.) CDFW	This comment references the 2017 Draft EIR/EIS. The RDEIR/SDEIS evaluates a different operational scenario than previously described and evaluated in the 2017 Draft EIR/EIS. Please see Master Response 9, Alternatives Development, and response to comment 66-3 regarding consideration of operational scenarios and development of operational criteria for the Project.

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	recommends that alternatives should be split into two or more alternatives that encompass the entire range of possible water operations scenarios, including an alternative that minimizes operational impacts through more restrictive bypass flows and diversion criteria. Letter from CDFW to the Sites Project Authority dated January 12, 2018 ("CDFW Comment Letter"). Despite the prior comments on the need to analyze multiple operational alternatives, the RDEIR/SDEIS analyzes only a single set of operational criteria that is common to all the alternatives. See, e.g., RDEIR/SDEIS at ES-10, 2-6, 2-8, 2-28 to 2-33. Yet as discussed in more detail below, the proposed bypass flows and other operational criteria result in significant environmental impacts that are not disclosed in the RDEIR/SDEIS.	
66-5	State agencies and public commentors previously highlighted the need to analyze more than one operational alternative because the DEIR/DEIS failed to disclose significant environmental impacts, which could be mitigated through alternative operational criteria such as increased bypass flows. See, e.g., CDFW Comment Letter at 2 (noting that the DEIR/DEIS failed to adequately analyze and disclose environmental impacts and stating that "CDFW does not consider proposed bypass flows identified in the DEIR/DEIS to sufficiently minimize or offset these impacts."). The RDEIR/SDEIS now admits that the operational criteria that were included in the DEIR/DEIS, and that are modeled in the RDEIR/SDEIS, would result in significant environmental impacts requiring mitigation. See RDEIR/SDEIS at ES-26, 11-131. As discussed infra, even with the proposed mitigation measure (Wilkins Slough Flow Protection Criteria), all of the alternatives result in significant environmental impacts to several fish species. The RDEIR/SDEIS does not include the full range of bypass flows and other operational criteria proposed by CDFW or other commentators to mitigate these significant impacts as alternatives in the RDEIR/SDEIS.	The RDEIR/SDEIS evaluates different alternatives as compared to those evaluated in the 2017 Draft EIR/EIS. Please see Master Response 9, Alternatives Development, and response to comment 66-3 regarding consideration of operational scenarios and development of operational criteria for the Project. The commenter appears to be referring to Mitigation Measure FISH-2.1: Wilkins Slough Flow Protection Criteria, in Chapter 11 of the RDEIR/SDEIS, and discussed on page ES-26 of the RDEIR/SDEIS Executive Summary. In the Final EIR/EIS, the refinements include modification to the minimum bypass Wilkins Slough flow criteria, which now requires that diversions to Sites Reservoir may not cause flow at Wilkins Slough to decline below 10,700 cfs from October 1 to June. Also, the minimum flow requirements have been increased to 10,700 cfs for October 1 through June 14 and 5,000 cfs for September (there will be no diversion from June 15 to August 31 because the Sacramento River is fully appropriated). This incorporation of higher flow requirements as an integral component of the Project

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		description eliminates the need for Mitigation Measure FISH-2.1 as mitigation, and new modeling results indicate the corresponding impacts for Impacts FISH-2, FISH-3, FISH-4, and FISH-5 remain less than significant. Please refer to Master Response 2, Alternatives Description and Baseline, regarding refinements to Project operations, such as refinements to the Wilkins Slough bypass criteria. Please refer to Master Response 5, Aquatic Biological Resources, for a description of the development of mitigation measures regarding flow and the use of best available science and data to evaluate bypass flows. Please see Master Response 9, Alternatives Development, regarding the reasonable range of feasible alternatives and the operational criteria considered and evaluated over the years.
66-6	Similarly, as discussed infra, the State Water Resources Control Board ("SWRCB") began the regulatory process to update the Bay-Delta Water Quality Control Plan in 2008, issued a Framework in 2018 for completing the update of the Water Quality Control Plan, [Footnote 1: See State Water Resources Control Board, July 2018 Framework for the Sacramento/Delta Update to the Bay-Delta Plan, available online at:w.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/sed/sac_delta_framework_070618%20.pdf. This document is incorporated by reference.] and has announced that it anticipates adopting new water quality standards for the Sacramento River and Delta as part of the updated Water Quality Control Plan in 2023. [Footnote 2: See State Water Resources Control Board, Upcoming Actions to Update and Implement the Bay-Delta Plan, December 8, 2021, available online at: www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/doc	Chapter 31, Cumulative Impacts, qualitatively considers amendments to the 2006 Bay-Delta Water Quality Control Plan, as amended in 2018 (Bay-Delta Plan) (State Water Resources Control Board 2006, 2018), and potential cumulative effects, as the amendments have not been approved by the State Water Resources Control Board (State Water Board). Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the Project water rights and the consideration of the Water Quality Control Plan updates related to the water rights process. Please see Master Response 2, Alternatives Description and Baseline, which describes the baseline, and Master Response 9, Alternatives Development, describes the reasonable range of feasible alternatives and the operational criteria considered and evaluated over the years, including bypass flows. Please see Master Response 9, Alternatives Development, and response to comment 66-3 regarding

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	s/20211207-slides-for-12-08-bay-delta-plan-inform-item_accessible.pdf. This document is incorporated by reference.] The RDEIR/SDEIS fails to provide a reasoned explanation why it does not consider alternative operational criteria that would be consistent with the 2018 Framework for completing the update of the Bay-Delta Water Quality Control Plan, particularly since the final CEQA/NEPA document is intended to be used by the SWRCB in consideration of water rights permits. The RDEIR/SDEIS violates CEQA and NEPA because it fails to consider more than one operational alternative that could reduce or avoid significant environmental impacts of the proposed project and alternatives.	consideration of operational scenarios and development of operational criteria for the Project.
66-7	II. The RDEIR/SDEIS Fails to Use an Accurate and Stable Project Description (66) (A) The RDEIR/SDEIS Fails to Use an Accurate and Stable Project Description Because the Project that the RDEIS/SDEIR Analyzes is Inconsistent with the Project Description The RDEIR/SDEIS violates CEQA because the document fails to use an accurate and stable project description. In particular, the modeling of operations in the RDEIR/SDEIS, which is the basis for the analysis of potential environmental impacts throughout the document, does not include the proposed mitigation measure FISH-2 (Wilkins Slough Flow Protection Criteria). As a result, the quantitative analysis and modeling in the RDEIR/SDEIS does not analyze the project that is proposed in the RDEIR/SDEIS.	Please see Master Response 2, Alternatives Description and Baseline, regarding a stable Project description and Mitigation Measure FISH-2.1. Mitigation measures can be incorporated into the Project, eliminating the mitigation measure but retaining the substance of the requirement. Mitigation Measure FISH-2.1 was required to reduce potential life stage effects on salmonids by increasing the bypass flow requirement at Wilkins Slough based on peer-reviewed scientific information. The Final EIR/EIS Project description now incorporates the requirements of Mitigation Measure FISH-2.1, which have been refined and made more restrictive. Please see the discussion of Flow and Mitigation Measures in Master Response 5, Aquatic Biological Resources, for a discussion of the updated Wilkins Slough flow protection criteria. The bypass flow requirement at Wilkins Slough is an element of the Project because it is an integral component of Project operations in terms of its water diversion criteria, rather than a separate measure distinct from Project operations and diversion criteria. Please see Master Response 3, Hydrology and Hydrologic Modeling, regarding the modeled representation of Project operations. The impact analyses contained in the resource chapters evaluate the descriptions of Alternatives 1 through 3 contained in

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		Chapter 2, Project Description and Alternatives. The exchanges and diversion criteria described in Chapter 2 are part of the alternatives. Operation of the alternatives, including diversion criteria and the use of exchanges, is incorporated in the modeling of the alternatives. Chapter 2 is supported by Appendices 2C, Construction Means, Methods, and Assumptions, and 2D, Best Management Practices, Management Plans, and Technical Studies, as well as the modeled representation of the alternatives, described in Appendices 5A, Surface Water Resources Modeling of Alternatives, through 5C, Upper Sacramento River Daily River Flow and Operations Model.
66-8	It is black letter law that "[a]n accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR." County of Inyo v. City of Los Angeles, 71 Cal. App. 3d 185, 193 (1977). CEQA requires a clear explanation of the nature and scope of the proposed project, otherwise it "is fundamentally inadequate and misleading." See Communities for a Better Environment v. City of Richmond, 184 Cal.App.4th 70, 84-85 (2010). In this case, the RDEIR/SDEIS includes inconsistent bypass flow criteria that limit diversions from the Sacramento River in the operational criteria common to all the alternatives. Compare RDEIR/SDEIS at 2-31 to 2-33 (identifying bypass flow criteria of 8,000 cfs at Wilkins Slough in April and May, and 5,000 cfs in other Months) with id. at 11-131 (describing the proposed Wilkins Slough Fish Protection Criteria mitigation measure, which requires a 10,700 cfs bypass flow at Wilkins Slough during the months of March through May). Buried deep in the appendices, the RDEIR/SDEIS indicates that the proposed mitigation measure FISH-2 (Wilkins Slough Flow Protection Criteria) is not included in the modeling of the proposed project and alternatives. See, e.g., RDEIR/SDEIS Appendices at 5A1-29, 5A2-28 to 5A2-33.	Please see response to comment 66-7 regarding the Project description and Mitigation Measure FISH-2.1.

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	As a result, all of the modeling of proposed operations in the RDEIR/SDEIS common to all of the alternatives -- including modeling and analysis of environmental impacts on surface water supplies, on fish and wildlife, and on water quality -- does not actually model or analyze the effects of the proposed project or alternatives, and instead the analyses and modeling in the RDEIR/SDEIS are inconsistent with the actual proposed project (which includes this proposed mitigation measure). The document fails to analyze the likely environmental impacts of the proposed project and alternatives because, in light of the document's failure to articulate a stable project description, it fails to analyze the proposed project at all.	
66-9	The inconsistent descriptions of the proposed project are grossly misleading to the public and decisionmakers in violation of CEQA. See, e.g., San Joaquin Raptor Rescue Center v. County of Merced, 149 Cal.App.4th 645, 655-56 (2007) (holding that the project description was inconsistent as to whether the project would increase mining production and violated CEQA, in part based on statements in public hearings on the CEQA document that demonstrated such inconsistencies); Communities for a Better Environment, 184 Cal.App.4th at 83-84 (holding project description violated CEQA because of inconsistent statements regarding the objectives of the project).	Please see response to comment 66-7 regarding the Project description and Mitigation Measure FISH-2.1.
66-10	The RDEIR/SDEIS uses different modeling assumptions for project operations and alternatives in other chapters, which also do not reflect the proposed project or alternatives. For instance, in the analysis of the effects of diversions on salmon survival in the Sacramento River (Appendix 11P), the RDEIR/SDEIS states that it uses different modeling assumptions that are not reflected in the proposed project, including a requirement that Delta outflow is greater than 44,500 cfs in the months of April to May and that there are 7 days of surplus conditions in the Delta in order for the project to divert water. RDEIR/SDEIS at 11P-2 to 11P-3. These operational criteria are not currently part of the proposed Project, see id. at 2-31, nor are they part	The EIR/EIS uses appropriate models and assumptions depending on the tool used and the availability of information. All models and assumptions reflect the contents in Chapter 2, Project Description and Alternatives, and the description of Project operations. The quantitative analysis in Appendix 11P, Riverine Flow-Survival, relies on results from the Sites Reservoir Daily Divertible & Storable Flow Tool (DDSFT), not CALSIM II. The DDSFT estimated the volume of water available for diversion under recent hydrologic conditions, whereas CALSIM II is an operations model that assesses and operates to conditions in the CVP/SWP system. As the DDSFT does not actively

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	of the CalSim modeling used in body of the RDEIr/SDEIS, see id. at 5A2-23. As a result, the modeling in Appendix 11P and the analysis of the effects of reduced flows on salmon survival in the Sacramento River fails to analyze the proposed project and alternatives.	simulate operations of the CVP/SWP system, it relies on results of operational actions to understand system conditions. The DDSFT consideration of 44,500 cubic feet per second (cfs) of Delta outflow in April and May reflects an operation within which CALSIM II operates as noted in Appendix 11P, Riverine Flow-Survival, Table 11P-2. As such, despite variances in methodology and modeled assumptions, both tools appropriately analyze the operation of the Project. DDSFT is used in conjunction with the CALSIM II model and other modeling tools to present a comprehensive evaluation.
66-11	The RDEIR/SDEIS assumes that there will be water exchanges with Shasta and Oroville reservoirs in certain years, which affects operations of those reservoirs and temperature-dependent mortality of salmon. RDEIR/SDEIS at ES-12, 2-35 to 2-37, 5A-2-30 to 5A-2-33. However, there are no proposed agreements for such exchanges between the CVP or SWP and Sites, and this element of the project is speculative. See id. at ES-10 ("exchanges of water may occur with the CVP and SWP") (emphasis added); id. At 2-35 (acknowledging that the Sites Reservoir Authority is in discussions with the U.S. Bureau of Reclamation ("Reclamation") and the California Department of Water Resources ("DWR") regarding potential exchanges). Equally important, the RDEIR/SDEIS does not analyze the potential adverse effects that would result from such exchanges, including potential changes in river flows, redd dewatering, or reductions in juvenile salmon survival, and completely ignores the effects of exchanges with Folsom Reservoir. See RDEIR/SDEIS at 5-27; id. At 11-103 (admitting that the RDEIR/SDEIS needs to "better reflect the exchanges in the model," that these exchanges are difficult to model, and that the RDEIR/SDEIS underestimates the extent of potential exchanges that could occur under the proposed project). [Footnote 4: The RDEIR/SDEIS also admits that Sites Reservoir cannot release water to GCID and other participants located between the Hamilton City Pump Station and Knights	Please see response to comment 66-7 regarding the Project description. The Project would work in conjunction with other reservoirs in the system (e.g., Shasta Lake), as described in Chapter 2, Project Description and Alternatives. As described in Section 2.5.2.1, Water Operations, subsection Coordination with CVP and SWP, this would allow other reservoirs to be operated such that they could release water for cold-water pool purposes (e.g., Shasta Lake). In addition, the diversion criteria described in the Chapter 2, Diversion Criteria section are part of the Project. Operation of the Project, including diversion criteria and the use of exchanges, was incorporated in the modeling as part of the Project for the RDEIR/SDEIS and as described in Chapter 2. Exchanges have the potential to assist the CVP and SWP in meeting their regulatory obligations and their authorized purposes, including to protect, restore, and enhance fish, wildlife, and associated habitats; provide water supply; and generate power. Exchanges are not speculative because they currently occur and because the Project would be integrated into the overall system of the State of California. The CVP and SWP each have responsibility for meeting objectives as defined in the Coordinated Operations Agreement, but they collaboratively decide the timing for each project to contribute to meeting

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	Landing, and that deliveries of water to those participants would be made by GCID and Reclamation. RDEIR/SDEIS at 2-34. The RDEIR/SDEIS does not appear to analyze the effects of additional Shasta Dam releases by Reclamation to fulfill such exchanges, which could be particularly impactful to the environment in drier years.] Because the RDEIR/SDEIS fails to provide an accurate and stable project description, the document fails to model and analyze the environmental impacts of the proposed project and alternatives, in violation of CEQA and NEPA.	objectives. Therefore, there are times when releases from Shasta Lake may be prioritized over Folsom Lake and vice versa. Sites Reservoir exchanges with Folsom Lake were considered in the RDEIR/SDEIS as a potential benefit but were not included in the CALSIM modeling. Therefore, they are no longer included as part of Project operations in the Final EIR/EIS, and modeling results have not changed. Please refer to Master Response 3, Hydrology and Hydrologic Modeling, for further descriptions of Shasta Lake and Lake Oroville exchanges. The modeling has been refined for the Final EIR/EIS and is reflected in the impact analysis throughout the document. Chapter 5, Surface Water Resources, Section 5.4.1, CALSIM, summarizes some of the modeling results and assumptions related to exchanges. The impacts related to changes in flow, redd dewatering, or reductions in juvenile salmon survival as a result of exchanges are addressed using modeling results and multiple lines of evidence in Chapter 11, Aquatic Biological Resources, including how Folsom Lake is currently operated to meet requirements, which would remain in place under operation of the Project. Please refer to Master Response 5, Aquatic Biological Resources, regarding benefits to aquatic biological resources, including the benefits to the cold-water pool.
66-12	Because these exchanges [between Shasta and Oroville Reservoirs] would be intended to "assist the CVP and SWP in meeting their regulatory obligations," RDEIR/SDEIS at 2-35, these exchanges do not provide public benefits that justify public taxpayer expenditures for this project. These exchanges are effectively water supply benefits to the contractors of the CVP and SWP who are obligated to pay for meeting regulatory requirements of the CVP and SWP.	Please see response to comment 66-11 regarding exchanges. Please see Master Response 2, Alternatives Description and Baseline, and Master Response 3, Hydrology and Hydrologic Modeling, regarding exchanges. Sites Reservoir exchanges with Shasta Lake would improve Reclamation's ability to preserve cold water later in the summer. The modeling of Project exchanges with Shasta Lake were adjusted in the Final EIR/EIS to increase spring flow pulses and improve fall flows consistent with the operational criteria. Cold-water pool management continues to be an objective of exchanges that may occur under Project conditions.

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66-13	(B) The RDEIR/SDEIS Fails to Use an Accurate and Stable Project Description Because the Overall Project Design is Not Final and Major Project Components Have Not Been Designed at All The RDEIR/SDEIS also fails to provide an accurate and stable project description because the overall project design is not yet final and major project components that will have significant environmental impacts have not been designed at all. The RDEIR/SDEIS states that, "[a]s with any large infrastructure project, the Project must and will continue toward final design. Project components will be refined as the Project moves toward final design and as parcels become accessible to survey." RDEIR/SDEIS at 3-7; see also id. At 9-20 (explaining that estimates of acreage of impacts to plant habitats and wetlands is based on "preliminary engineering design"). While the RDEIR/SDEIS acknowledges that the overall project design is not yet final, it does not clearly describe what project components could change and how. It is impossible for the public to understand the environmental impacts of the project and to meaningfully comment when it is not yet clear what the project is.	Please see Master Response 2, Alternatives Description and Baseline, regarding the appropriate level of detail in the Project description. The alternatives have been described to an appropriate level of detail to allow decision makers and the public to understand the nature and magnitude of impacts on the environment for each resource topic, to compare the different options available for accomplishing the Project, to identify feasible mitigation for potentially significant impacts, and to make a decision about whether, and if so how, to approve the Project.
66-14	In addition to vague statements about the lack of finality of the project's design, the RDEIR/SDEIS highlights particular project components that have not been designed at all. For example, it appears that the locations for major sections of the project's 46 miles of new paved and unpaved roads have not yet been determined. See, e.g., RDEIR/SDEIS at 9-15 ("The exact locations of the realigned Huffmaster Road, new Comm Road South, and new South Road are not yet finalized."); 9-44 ("exact locations of construction-related activities are not known for the new roads"). As the RDEIR/SDEIS acknowledges, these roadways could cause significant impacts to waterways, wetlands, and wildlife:	Please see Master Response 2, Alternatives Description and Baseline, regarding the appropriate level of detail in the Project description. The EIR/EIS includes specific information and data on the location, design, schedule, and operation for all Project components for each of the alternatives evaluated based on the current level of design detail. Where design detail was not available for specific facilities, such as the transmission corridors and roads, broader corridors were used to capture the maximum envelope of potential impacts. This corridor approach also is intended to provide flexibility to avoid resources as the design is refined. As described further in Chapter 9, Vegetation and Wetland Resources, Section 9.4.1, Construction,

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	New roadways would create physical barriers or impediments for some wildlife, including amphibians and reptiles, which may have a difficult time crossing the roadways. There are numerous waterways and wetlands in the study area, and new or larger roadways could disrupt existing connections between aquatic and upland habitats, and result in increased habitat fragmentation, which could affect seasonal movements of amphibians and reptiles. Roadways may deter some larger animals from moving through those areas, even if they are able to physically cross the roadways. In addition, some of the roadways may be fenced, which would create a greater impediment to large animals attempting to cross the road. New roadways would also increase the potential for wildlife to be struck by vehicles of workers traveling to operations facilities or visitors traveling to recreation areas, and the presence of fences could trap animals in the roadway and make them more prone to being struck by vehicles. RDEIR/SDEIS at 10-139. Yet there is no meaningful discussion of the impacts of specific roads to specific resources and no exploration of alternative routes that could minimize impacts because specific road locations have not been proposed.	because the exact corridor of the roads is not finalized, the analysis includes a wider corridor than expected for roads, such that the roads would be built within the corridor evaluated. As stated in Chapter 9, "The exact locations of the realigned Huffmaster Road, new Comm Road South, and new South Road are not yet finalized. Therefore, corridors have been used to identify potential direct and indirect impacts. For example, on the South Road a 400-foot-wide conceptual road alignment plus a 300-foot-wide buffer has been identified to allow for design flexibility. Because the final South Road corridor is unknown, the entire corridor was assumed to be permanently affected for the purposes of the impact analysis. Within the corridors, the actual permanent impact area would be only the footprint of roads and shoulders with additional temporarily affected areas for construction staging and equipment movement." The use of corridors for linear features, such as roads or pipelines, in CEQA/NEPA documents is typical and appropriate because it allows the public and decision makers to understand resources that may exist within a corridor and the potential impacts. This corridor approach allows identification and evaluation of a maximum envelope of impact resulting from the roadways, such that the impacts from any particular road alignment and configuration within the corridor are appropriately captured by the environmental analysis. Chapter 9 includes the potential impacts on vegetation and wetland resources associated with the corridors, as appropriate.
66-15	The RDEIR/SDEIS suggests that the lack of information about roadway locations is not a problem because the lead agencies have estimated the maximum extent of impacts by assuming that resources within the broader "road alignment corridor" will be impacted and because "roads ...will be designed, to the extent practicable, to avoid direct and indirect impacts.." RDEIR/SDEIS at 9-45 to 9-46. This approach undermines core purposes of	Please see response to comment 66-14 regarding the appropriate level of detail in the Project description and the road corridors evaluated in the EIR/EIS. Please also see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the CEQA/NEPA process. The identification of a road alignment corridor does not undermine CEQA or NEPA. It allows a

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	CEQA and NEPA. First, it fails to provide the public with an accurate assessment of the project's impacts, and instead provides only an unrealistic overestimate of impacts that is not reflective of the actual project. Second, it deprives the public of an opportunity to comment on alternative alignments or approaches that could reduce the roadways' environmental impacts, deferring the process of selecting roadway locations to an unspecified future date when there will be no opportunity for public input and review pursuant to the procedures set forth in NEPA and CEQA.	conservative impact approach that appropriately captures the types and magnitude of impacts from potential roadway configurations.
66-16	Basic details about other key project components that could significantly impact the environment are also unknown. Large recreation areas are not yet designed, depriving the public of an opportunity to understand a realistic picture of their impacts and comment on alternative designs that could reduce those impacts. RDEIR/SDEIS at 9-24 ("The permanent footprint of these recreation areas is currently at a conceptual design stage, and the actual location of facilities is not yet known."). For electrical transmission lines, the RDEIR/SDEIS indicates that "[o]nly one of the two north-south transmission line alignments described in Chapter 2 would be constructed, and specific locations for the transmission line towers are currently unknown." RDEIR/SDEIS at 9-14. Transmission line can have serious impacts to birds and the towers can destroy vernal pool wetlands and other important landscape features. Yet the RDEIR/SDEIS does not provide the public with an opportunity to understand the project's impacts or suggest alternatives because it lacks basic information like the locations of transmission line towers. Similarly, the RDEIR/SDEIS discusses the need for upgrades to the GCID canal but indicates that the details will be worked out in the future. RDEIR/SDEIS at 2-9 ("The GCID system may require several upgrades to support the operation of Sites Reservoir. The specific details of these upgrades would be confirmed during future hydraulic modeling and assessment of system conditions."). There are likely threatened giant garter snakes in the GCID system, and the location, timing, and method of	Please see response to comment 66-14 regarding the appropriate level of detail for the Project description. The Project would include construction of two primary recreation areas (the Peninsula Hills Recreation Area and the Stone Corral Creek Recreation Area), and a day-use boat ramp area, as described in Chapter 16, Recreation Resources. Chapter 10, Wildlife Resources, evaluates impacts associated with construction and operation of recreation areas and transmission lines, including mitigation measures. For example, Impact WILD-1j describes the potential impacts and provides mitigation measures to reduce impacts associated with transmission lines (e.g., Mitigation Measure WILD-1.27). Many impacts and mitigation measures in Chapter 10 address construction and operation of the Project, including recreation areas. Therefore, the public and decision makers have had an opportunity to understand the types of impacts on birds associated with the Project, including recreation areas, transmission lines, and the mitigation measure(s) needed to reduce impacts. Regarding the GCID system upgrades, Chapter 2, Project Description and Alternatives, describes upgrades that would result in potential environmental impacts associated with construction or operations: "…for purposes of assessing environmental impacts for this

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	construction matters greatly for avoiding and minimizing impacts to this sensitive species. Once again, the RDEIR/SDEIS fails to provide the public with a meaningful opportunity to understand those impacts and suggest alternative approaches because the document omits the most basic planning details.	document, it is conservatively assumed that upgrades would be constructed at various locations along the GCID Main Canal, as described below. GCID would manage the facility upgrades using an approach consistent with its existing management practices." The upgrades described include replacing siphons and canal upgrades. Chapter 2 and Appendix 2C, Construction Means, Methods, and Assumptions, describe construction timeframes and means and methods. Therefore, the EIR/EIS identifies and describes construction and operations details of upgrades and analyzes the potential environmental effects associated with those upgrades throughout the document. Specifically, please see Impact WILD-1i for a discussion of potential impacts on giant gartersnake as a result of construction in or near the GCID Main Canal. To address these impacts, Mitigation Measure WILD-1.20 provides protective measures, such as timing of construction and preconstruction surveys, to avoid causing giant gartersnake injury and mortality.
66-17	The RDEIR/SDEIS makes clear that the project's design is not yet complete, and that major, impactful decisions related to roads, recreation areas, transmission lines, canal modifications, and other project components will occur in the future. Shielding these decisions from public review deprives the public of a meaningful opportunity to understand the project's impacts and comment in violation of CEQA and NEPA. Accordingly, a revised draft EIS/EIR must once again be recirculated for public comment when project design is complete.	Please see Master Response 2, Alternatives Description and Baseline, regarding the adequacy of the project description. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding requirements for recirculation and disclosure of significant impacts.
66-18	III. The RDEIR/SDEIS Fails to Accurately Analyze the Environmental Impacts of the Project in Light of the Effects of Climate Change that have Already Occurred and the Effects of Climate Change Over the Life of the Project	Chapter 28, Climate Change, evaluates Project operations using a 2035 Central Tendency (CT) scenario, the climate period of which is defined in Chapter 28 as "centered around 2035 (2020–2049)." The projection values presented (i.e., the 2035 mean values) were calculated based on averaging around the 30-year period of 2020—-2049 projections from CALSIM output. In addition, the Final EIR/EIS

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	CEQA and NEPA require that the analysis of potential environmental impacts address the full duration of the project, not just the environmental impacts at the very beginning of the project. The CEQA Guidelines explicitly require the consideration of "both the short-term and long-term effects." 14 Cal. Code Regs. § 15126.2(a). In Neighbors for Smart Rail, the California Supreme Court reiterated that an EIR must evaluate both the near-term and long-term environmental impacts of a proposed project. 57 Cal. 4th at 455. The RDEIR/SDEIS violates CEQA and NEPA because it fails to accurately assess the environmental impacts of the proposed project in the short term in light of the already observed effects of climate change, and because it wholly fails to consider the environmental impacts in the long term in light of the increasing effects of climate change.	presents Water Storage Investment Program (WSIP) 2070 modeling results in Appendix 28A, Climate Change, the climate period for which is 2056—- 2085 for Alternatives 1 through 3. This information has been incorporated where appropriate in Chapter 28. These updates add new analyses for variables under climate change by 2070 but do not change conclusions presented in Chapter 28 of the RDEIR/SDEIS. A discussion of CEQA and NEPA requirements as they relate to climate change is provided below. Chapter 28 summarizes modeling results associated with climate change and climate change effects. The modeling results and the modeling used for analyzing climate change are provided in Appendix 28A, which includes the effects of climate change on future precipitation as reflected in the revised 2035 CT results and the modeled WSIP 2070 results (provided as part of the Final EIR/EIS). Section 28.3, Methods of Analysis, describes the methods used to evaluate potential effects associated with climate change. The analysis is based on the Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, released by CEQ on August 5, 2016 (Council on Environmental Quality 2016). The 2016 guidance indicates that NEPA analyses should identify climate change effects on a proposed action and the potential effects of the proposed action on climate change by assessing GHG emissions. Estimated GHG emissions for the Project are included in Chapter 21, Greenhouse Gas Emissions. Additional information on how climate change was considered in the hydrologic modeling and hydrology analysis can be found in Master Response 3, Hydrology and Hydrologic Modeling.

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		Under CEQA, the analysis must evaluate the impacts from the Project on the environment. An analysis of impacts of the environment on a project is not required under CEQA. Chapter 28 discusses how the Project's impacts could be affected by climate change. In accordance with NEPA, it also discusses how climate change conditions could affect the Project.
66-19	The RDEIR/SDEIS fails to accurately assess the short-term effects of the project because the analysis of environmental impacts uses observed hydrology from 1922 to 2003 without considering the effects of climate change. See, e.g., RDEIR/SDEIS at 3-5, 5A1-2. However, that historic hydrologic data do not account for the effects of climate change that have significantly altered hydrology from the historic baseline as observed over the past several decades. Inexplicably, the RDEIR/SDEIS fails to use hydrologic modeling data that have already been developed by DWR and Reclamation for CalSim II (and for CalSim III) which incorporate the near-term effects of climate change on hydrology and water temperatures. [Footnote 5: This modeling data is used in the Climate Change appendix, but it is not used in the body of the RDEIR/SDEIS, making the analysis of environmental impacts in the RDEIR/SDEIS plainly inaccurate.] As a result, the analysis of environmental impacts in the RDEIR/SDEIS uses outdated information that significantly underestimates the environmental impacts of the proposed project in combination with the effects of climate change.	Please refer to Master Response 3, Hydrology and Hydrologic Modeling, regarding the planning simulation period, historical hydrology and climate change, and the use of CALSIM II. When the Notice of Preparation was published for the RDEIR/SDEIS (2017) and, in 2020, when the modeling analysis was conducted for the RDEIR/SDEIS, CALSIM II was the only systems operation model that was jointly supported by California Department of Water Resources (DWR) and Reclamation. As such, at the time of analysis, CALSIM II was the best tool available to evaluate Sites Reservoir operations in the CVP and SWP systems. Since publication of the RDEIR/SDEIS, a jointly supported CALSIM 3 model has become available. For a discussion of the selection of CALSIM II and the modeling assumptions and baseline, please refer to Chapter 3, Environmental Analysis. Please refer to Chapter 28, Climate Change, for the climate change modeling performed for each alternative under 2035 CT and WSIP 2070 conditions and a discussion of Project effects with climate change. As described in Chapter 28, the anticipated effects of climate change have already begun to occur in the 82-year CALSIM II historical hydrology. Although existing conditions only reflect changes incurred during the simulation period, those changes are representative of the range and variability of hydrology observed in the 1922 through 2014 period. As such, the resource impact analyses

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		in Chapters 5 through 27 use 82 years of hydrologic conditions that provide a robust representation of the wide variability observed in California between 1922 and 2003. While future climate change effects are not included in the full sequence of existing conditions, attempting to modify this historical hydrologic record to mimic recent hydrologic variability would not change the conclusions described in the resource chapters.
66-20	Because the Sites Reservoir RDEIR/SDEIS excludes the observed effects of climate change in recent years, the environmental analysis estimates that temperature-dependent mortality of winter-run Chinook salmon in the Sacramento River under the No Action Alternative is 24.4 percent in critically dry years. RDEIR/SDEIS at 11O-6. In contrast, the Trump Administration's final 2020 EIR on the long-term operations of the Central Valley Project and State Water Project concludes that temperature-dependent mortality of winter-run Chinook salmon in the Sacramento River under the biological opinions (the No Action Alternative in the Sites Reservoir RDEIR/SDEIS) is 61 percent. [Footnote 6: See Final EIS, Appendix F, Attachment 3-8, Table 1-1, available online at:w.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=41744. As the table notes, "[a]ll scenarios are simulated at ELT (Early Long-Term) Q5 with 2025 climate change and 15 cm sea level rise." Id. This document is incorporated by reference.]	The main effects analysis for the RDEIR/SDEIS assumes historical climate conditions as the Project baseline. The Final EIR/EIS includes a sensitivity-level analysis of the Project at 2035 CT and WSIP 2070 climates. Providing a comparison of conditions with and without climate change allows a comparison of Project impacts. Please see Master Response 2, Alternatives Description and Baseline, for information regarding conditions under the No Project Alternative. The modeling for the Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project Final EIS (Bureau of Reclamation 2019a) assumed an Early Long-Term (ELT) Q5 with 2025 climate change and 15 centimeters of sea level rise. Therefore, the increased warming observed in the Coordinated Long-Term Operation ELT Q5 climate increases the Sacramento River water temperature and increases the calculated temperature-dependent mortality of early life stage winter-run Chinook (observed in Appendix F, Attachment 3-8, Table 1-1 of Bureau of Reclamation 2019a). Climate change effects on Project operations and on the long-term interactions between Project operations and study area resources, including aquatic resources, are analyzed and discussed in Chapter 28, Climate Change.
66-21	Chapter 28 of the RDEIR/SDEIS shows that the effects of climate change with the proposed project and alternatives would cause greater reductions	With respect to Wilkins Slough effects, the commenter has misinterpreted the information in the table showing Sacramento River

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	in Sacramento River flow at Wilkins Slough in critically dry years than when climate change is excluded. RDEIR/SDEIS at 28-16 (reductions in December flow at Wilkins Slough from the alternatives increase from 5-6 percent without climate change to 6-7 percent with climate change). And when the effects of climate change are included, the proposed project and alternatives result in much larger reductions in December Delta outflow. See id. at 28-24 to 28-25 (reductions in December Delta outflow in critically dry years are 4-5 percent excluding climate change and 7-8 percent when climate change is considered). Yet the impacts of the proposed project's reduction in flow on fish and other resources in the lower river and the Bay-Delta, in light of the effects of climate change, are not analyzed--the cursory discussion about aquatic biological resources in section 28.5.5 focuses on benefits in spawning areas from "temperature exchanges" (which are entirely speculative and solely a mitigation measure); describes a benefit to fish from increased Delta outflow in October (while ignoring flow reductions in other months); and suggests that reduced groundwater pumping due to the additional surface storage would benefit fish by protecting riparian trees (without acknowledging that the project changes the hydrograph in ways that may harm native riparian trees). None of these supposed benefits are adequately documented, analyzed, or likely to materialize and no mitigations are offered for the likely negative effects (e.g., of reduced flows and harm to native riparian trees) that the RDEIR/SDEIS glosses over. See id. At 28-31.	flow near Wilkins Slough of the RDEIR/SDEIS. While the percent reduction of flow increased in the winter months (December through March) under the "with climate change" scenarios, the absolute rate of flow is higher at Wilkins Slough with climate change as opposed to without climate change (i.e., subtracting the highest rate of reduction for December from the NAA flow yields a flow of 7,520 cfs in the "without climate change" scenario and a flow of 7,856 cfs in the "with climate change" scenario). This is due to the projected change in precipitation from spring snowmelts to winter rain events. Nevertheless, the Wilkins Slough diversion criterion has been modified to require the Project diversion not to reduce flow at Wilkins Slough below 10,700 cfs, consistent with current published flow survival relationships for emigrating juvenile Chinook salmon. This higher standard will diminish opportunities for the Project to divert flows in Critically Dry Water Years, although some variability in flows persists due to exchanges between Reclamation and the Project for the purpose of cold-water pool conservation in Shasta Lake. The same misinterpretation was made with respect to Delta outflow. While the percent reduction in outflow from the NAA outflow is higher in the "with climate change" scenario than in the "without climate change" scenario, Delta outflow is higher in all months except October in the "with climate change" scenario than "without climate change" scenario, due to the projected changes in the pattern of precipitation under the climate change scenario. However, as with the Wilkins Slough case, these tables have been recalculated based on the revised Wilkins Slough standard. The new tables are presented in a revised Chapter 28, Climate Change, in the Final EIR/EIS. In addition, a climate change analysis for the WSIP 2070 climate change scenario has been added to the analysis, and it continues to show higher Delta

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		outflow in the No Project Alternative in all months due to predicted changes in precipitation patterns. Please see response to comment 66-18 regarding the modeling performed for climate change under 2035 CT and WSIP 2070, which is now incorporated into Chapter 28. Chapter 28 has been reorganized to better disclose the effects of climate change and Project operations, and the fish discussion in Section 28.5.5, Aquatic Biological Resources, has been updated to reflect the refined modeling results and to focus more concisely on areas analyzed in the chapter regarding the effect of climate change on the Project and its operation under a changing climate. The discussion of benefits to riparian species has been removed from Section 28.5.5 because changes to riparian habitat due to climate change are not analyzed in the chapter. The modified Wilkins Slough requirement will maintain higher flows (particularly in Critically Dry Water Years), and diversions are not expected to affect the water table or riparian habitats near the Sacramento River (see Chapter 8, Groundwater Resources, regarding effects on groundwater). Also see Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis, for an analysis of the Project's effects on inundated floodplain habitat in the Yolo and Sutter bypasses and inundated side-channel habitat in the Sacramento River.
66-22	The exclusion of the effects of climate change from the RDEIR/SDEIS also results in inaccurate modeling of the temperature of water released from the proposed project, given the current effects of climate change, as well as the effects anticipated in the coming decades. See id. at 28-4 (estimating that air temperatures in California could increase by 5.8°F by 2050 and up to 8.8°F by 2100, and that air temperatures in the Sacramento Valley in the months of July through September are likely to increase by 2.7°F to 10.8°F, as a result of climate change); id. at 28-27 (admitting that climate change is	Climate change was not excluded from the RDEIR/SDEIS, and an analysis of potential climate change effects can be found in Chapter 28, Climate Change. It is true that air temperatures in California are increasing, and that, combined with the effects of drought, may affect water temperatures, water quality, and the development of harmful algal blooms, as noted in Section 28.5.2, Surface Water Quality. Variables selected for analyzing modeling results include those that indicate ability to meet water temperature targets, preservation of

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	likely to increase occurrence of harmful algal blooms in the proposed reservoir).	cold-water pool, salmonid temperature targets, and storage targets so that cold-water releases under Project operations could be used to adjust water temperatures during warmer months. Section 28.3.1, Indicators, explains the linkages between variables selected for analysis and their benefits to meeting performance metrics associated with water temperature.
66-23	The RDEIR/SDEIS entirely fails to evaluate the long-term environmental impacts of the proposed project because it only analyzes environmental impacts based on anticipated conditions in the year 2020, 2021 or 2030, depending upon which part of the document is reviewed. Compare RDEIR/SDEIS at ES-7 (describing conditions in 2030) and id. at 3-5 ("Operations is assumed to begin in 2030 and would continue for the life of the Project.") with id. at 5A-2-2 ("Planning Horizon" defined as the Year 2021) with id. at 3-2 ("the existing conditions baseline under CEQA has been updated to capture conditions through 2020."). Despite the clear mandate of CEQA to evaluate long-term impacts of the project, the RDEIR/SDEIS does not do so.	The EIR/EIS evaluates long-term impacts of the Project and identifies potential long-term impacts where appropriate throughout the document. For example, Chapter 9, Vegetation and Wetland Resources, evaluates the long-term loss of riparian and oak savanna habitat under Impact VEG-2 and long-term impacts on mature blue oak trees under Impact VEG-4. Another example is Chapter 10, Wildlife Resources, which evaluates long-term impacts on golden eagle under Impact WILD-1k. A third example is Chapter 11, Aquatic Biological Resources, which evaluates the long-term effects of Project operations on winter-run Chinook salmon under Impact FISH-2. The hydrologic modeling results assume existing or near-term future infrastructure, regulations, and demands. However, the use of 1922-2003 historical hydrology as input to CALSIM allows the impact assessment to capture future long-term variation in environmental effects. Furthermore, long-term effects associated with climate change are considered in Chapter 28, Climate Change.
66-24	Excluding the effects of climate change in assessing environmental impacts [Footnote 7: While the RDEIR/SDEIS includes a separate chapter that includes some modeling of the proposed project and alternatives with climate change, the document excludes the effects of climate change in determining what constitutes an environmental impact under NEPA and CEQA, and thus fails to consider the near-term and long-term effects of the project under a lawful baseline.] is particularly egregious and unlawful because: (1) analysis of the impacts of climate change was required in the	Please see response to comment 66-18 regarding the climate change analysis included in Chapter 28, Climate Change, of the EIR/EIS and near-term and longer-term effects. Details on climate change impacts on hydrology are discussed in Section 28.4, Surface Water Resources, the Project, and Climate Change. Please see response to comment 66-22 regarding climate change modeling for air and water temperatures. The Master Response 3, Hydrology and Hydrologic Modeling, section titled Hydrology Used for Modeling of Alternatives

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	quantification of public benefits of water storage projects under Proposition 1, as well as to comply with Executive Order B-30-15 (2015) and Assembly Bill 1482 (2015), which require state agencies to account for climate change in project planning and investment decisions; and (2) the longer-term effects of climate change are likely to have more severe impacts in terms of hydrological modification and increased air and water temperatures. Moreover, the RDEIR/SDEIS erroneously describes the 1922-2003 CalSim modeling as "current climate conditions," see RDEIR/SDEIS at 5A-2, but state and federal agencies have repeatedly concluded that the 1922-2003 historical hydrologic information does not adequately represent current climate conditions given the change in the climate that has been observed in recent decades. Because the RDEIR/SDEIS fails to consider the effects of climate change in the near term in determining the potential environmental impacts of the proposed project and alternatives, and because the RDEIR/SDEIS wholly fails to consider the long-term environmental impacts in a future with climate change, the document violates NEPA and CEQA.	describes historical hydrology variability, which includes prolonged dry periods, and climate change, explaining that "the range of hydrology observed at the proposed upstream diversion location on the Sacramento River during the 1922 through 2003 period is representative of the range and variability of hydrology observed in the 1922 through 2014 period" and "attempting to modify this historical [1922—- 2003 CALSIM] hydrologic record to mimic recent hydrologic variability would not change the conclusions described in the resource chapters." Baseline existing conditions and the No Project Alternative are described in Chapter 3, Environmental Analysis. Please refer to the response to comment 66-18 for a discussion of CEQA and NEPA requirements as they relate to climate change. Please refer to the Master Response 2, Alternatives Description and Baseline, section titled Why Climate Change Is Analyzed Separately from the No Project Alternative regarding baseline conditions in relation to climate change. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for more information regarding California Water Commission and the WSIP (Proposition 1). The Proposition 1 process is separate from the CEQA/NEPA process. The Authority and Reclamation are complying with all requirements stipulated by the Proposition 1 process. The Authority submitted analyses of public benefits, including information under climate change conditions over the past several years. Modeling was provided to the California Water Commission initially in September 2017 as part of the Project's WSIP application. Follow-up information was provided by the Authority in 2018. At the time, all analyses and

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		materials were posted on the California Water Commission website. The original application/executive summary is linked on the Authority's website (Sites Project Authority 2017a). The 2021 Feasibility Study submitted to the California Water Commission included output and analysis based on the climate change modeling. The public benefits were calculated based on modeling output that used the WSIP climate hydrology (WSIP 2030 and WSIP 2070 climate conditions). Results from the modeling are included throughout the Feasibility Study and appendices and focus on deliveries for public benefit (to the Yolo Bypass and to wildlife refuges north and south of the Delta). In particular, results from the modeling are included in Section 5 and Appendix B. The California Water Commission did not request the CALSIM model itself as part of the Feasibility Study submittal. Analysis was included in the California Water Commission's staff report (California Water Commission 2021) and discusses results from the modeling. As explained in response to comment 66-18, all modeling and results include the climate change hydrology as required by the California Water Commission.
66-25	IV. The RDEIR/SDEIS Fails to Use an Accurate Environmental Baseline and Fails to Accurately Describe the Environmental Setting (66) (A) The RDEIR/SDEIS Fails to Use an Accurate Environmental Baseline The RDEIR/SDEIS also violates CEQA and NEPA because it fails to use an accurate environmental baseline. The environmental baseline is typically the conditions that exist when the Notice of Preparation is issued. Cal. Code Regs., tit. 14, § 15125(a). Here, however, the RDEIR/SDEIS improperly uses the following baseline that differ from conditions that existed when the Notice of Preparation was issued, including: (1) it uses the Trump Administration's 2019 Biological Opinions for operations of the Central	Please refer to Master Response 2, Alternatives Description and Baseline, regarding the baseline and information regarding the biological opinions and the Bay-Delta Plan (State Water Resources Control Board 2006, 2018).

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	Valley Project and State Water Project as part of the baseline; (2) it omits the SWRCB's 2018 Update of the Bay-Delta Water Quality Control Plan; and (3) it ignores the pending revision of water quality standards for the Sacramento River and flows into, through and from the Delta to San Francisco Bay as the final part of the SWRCB's forthcoming update of the Bay-Delta Water Quality Control Plan. Instead the RDEIR/SDEIS assumes that other regulatory requirements would be identical in the future even as species spiral towards extinction because of unsustainable water diversions.	
66-26	The RDEIR/SDEIS proposes to use the 2019 biological opinions for operations of the CVP and SWP as part of the environmental baseline, claiming that because these biological opinions were issued after the Notice of Preparation, they are anticipated to be implemented "into the future," and thus "an updated baseline is necessary to provide the most accurate picture of the Project's impacts." RDEIR/SDEIS at 3-2 to 3-3. However, even before the RDEIR/SDEIS was released to the public on November 12, 2021, the federal government formally reinitiated consultation on the long-term operations of the CVP and SWP on October 1, 2021, beginning the process to develop new biological opinions. In addition, the Biden Administration has agreed to not defend these biological opinions in court, and the state and federal administrations have proposed interim operations that would modify and not fully implement the biological opinions in 2022. As a result, at the time the RDEIR/SDEIS was released to the public, the federal government had agreed that the 2019 Biological Opinions were "not an accurate picture" of how the CVP and SWP would be operated in the near term, let alone "into the future," and it is arbitrary and capricious to conclude otherwise. Including these blatantly unlawful biological opinions in the environmental baseline of the RDEIR/SDEIS violates CEQA and NEPA because this environmental baseline is not an accurate reflection of environmental conditions that would be affected by the proposed project and alternatives, and the document must be revised to analyze operations	Please refer to Master Response 2, Alternatives Description and Baseline, regarding the environmental baseline and information regarding the biological opinions and the Bay-Delta Plan (State Water Resources Control Board 2006, 2018).

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	with a lawful environmental baseline that accurately reflects how the CVP and SWP could lawfully be operated.	
66-27	The environmental baseline used in the RDEIR/SDEIS violates CEQA and NEPA because it does not include existing water quality standards adopted by the SWRCB in 2018. While the RDEIR/SDEIS's environmental baseline selectively updated some regulatory requirements to include the 2019 biological opinions, the document excludes the regulatory requirements adopted by the SWRCB in 2018 regarding water quality standards for Delta salinity and freshwater inflow from the Stanislaus, Tuolumne, Merced, and lower San Joaquin Rivers. See RDEIR/SDEIS at 5A2-20 to 5A2-22. The RDEIR/SDEIS fails to provide any reasoned explanation for excluding these regulatory requirements from the environmental baseline.	The Project would not affect operations on the Stanislaus, Tuolumne, Merced, and lower San Joaquin Rivers or salinity at Vernalis because it would not affect inflow to or diversions from the San Joaquin River watershed. Therefore, there is no need to include the water quality standards for freshwater inflow from these rivers. Inclusion of the modifications to the southern Delta salinity standards associated with the Bay-Delta Plan (State Water Resources Control Board 2006, 2018) would not affect the Delta water quality evaluation because the amendments increased the salinity objectives and because the evaluation in Chapter 6, Surface Water Quality (Impact WQ-2), includes consideration of change in salinity regardless of salinity objective. Please refer to Master Response 2, Alternatives Description and Baseline, regarding the baseline used.
66-28	The environmental baseline is unlawful because it assumes that regulatory obligations that affect diversions from the Bay-Delta will not change in the future, even as fish species continue to spiral towards extinction and regulatory processes to update standards are underway. The RDEIR/SDEIS asserts that "[t]he reasonably foreseeable future conditions under the No Project Alternative would not be materially different from the conditions under the CEQA existing conditions baseline" because existing regulatory requirements, including the 2019 Biological Opinions, "would reasonably be anticipated to continue to be implemented into the future." RDEIR/SDEIS at 3-2 to 3-3. The SWRCB began its process of updating the Bay- Delta Water Quality Control Plan in 2008, adopted new regulatory requirements for Phase 1 of the updated Water Quality Control Plan in 2018, issued a framework in 2018 for completing the update of the Water Quality Control Plan, [Footnote 8: See supra note 1.] and has announced that it anticipates adopting new water quality standards for the Sacramento River and the	Please refer to Master Response 2, Alternatives Description and Baseline, regarding the environmental baseline and information regarding the biological opinions and the Bay-Delta Plan (State Water Resources Control Board 2006, 2018). The document considers the forthcoming updates to the Bay-Delta Plan in the discussion of cumulative projects in Chapter 31, Cumulative Impacts. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the water rights process and the authority of the State Water Board.

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	Bay-Delta estuary as part of the updated Water Quality Control Plan in 2023. [Footnote 9: See State Water Resources Control Board, Upcoming Actions to Update and Implement the Bay-Delta Plan, December 8, 2021, available online at:w.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/20211207-slides-for-12-08-bay-delta-plan-inform-item_accessible.pdf. This document is incorporated by reference.] There is no justification for entirely excluding consideration of the forthcoming updates to the Bay-Delta Water Quality Control Plan in the RDEIR/SDEIS, particularly since the document will purportedly be used by the SWRCB.	
66-29	(B) The RDEIR/SDEIS Fails to Accurately Describe the Environmental Setting In addition to the above-described inaccuracies in the environmental baseline, the RDEIR/SDEIS fails to provide basic information regarding the environmental setting, which makes it impossible for the public to understand and meaningfully comment on the project's impacts. This is particularly true for the RDEIR/SDEIS's discussion of vegetation, wetland, and wildlife resources. For these resources, the RDEIR/SDEIS relied on outdated, unreliable, and inaccurate habitat and species distribution information even though it was feasible to provide more accurate information, in violation of CEQA. See Save Agoura Cornell Knoll v. City of Agoura Hills, 46 Cal.App.5th 665, 692-94 (2020).	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of using modeling and past survey results to define the 2020 baseline conditions for vegetation, wetlands, and wildlife. Master Response 6 also describes the basis of the environmental setting for vegetation and wildlife impacts. Also please see Appendix 9B, Vegetation and Wetland Methods and Information, for the methods of land cover type mapping, which was the basis for the environmental setting for vegetation, wetland, and wildlife resources.
66-30	No new on-the-ground surveys regarding vegetation, wetland, or wildlife resources were conducted for preparation of the RDEIR/SDEIS. Rather, the RDEIR/SDEIS relies primarily on desktop modeling of land-cover types based on areal imagery to describe the location of plant communities and wetlands. RDEIR/SDEIS at 9-8. For wildlife resources, [a]vailable literature was reviewed to identify known habitat associations and habitat requirements for each species. Habitat requirements were then compared with the existing land cover types mapped in the study area, and	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of the use of past surveys in conjunction with habitat modeling to develop the 2020 baseline conditions. As stated in the master response, it was infeasible to conduct new surveys due to the lack of access to privately held land.

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	a series of assumptions were made regarding which land cover types could provide potentially suitable habitat for each species based on its habitat requirements. RDEIR/SDEIS at 10-8. The RDEIR/SDEIS emphasizes multiple times that "[a]ll land cover type acreages are preliminary and subject to revision based on pedestrian surveys once access has been granted to the study area." RDEIR/SDEIS at 10-8; see also DEIS.DEIR at 9-8 (same), 9-9 ("The acreages of wetlands and non-wetland waters presented are preliminary, as the aquatic resources delineation has not been completed with onsite surveys or jurisdictional review by the USACE and State Water Board."); 9-18 ("All land cover type acreages are preliminary and subject to revision based on pedestrian surveys once access has been granted to the study area, particularly for the wetland and non-wetland water types, which are subject to change pending field review and verification by the USACE and State Water Board.").	
66-31	Not only are the land cover type estimates that form the basis for the RDEIR/SDEIS's analysis of impacts to vegetation, wetlands, and wildlife "preliminary" and seemingly subject to radical revisions based on future field survey, the RDEIR/SDEIS admits they are unreliable. Appendix 10-B provides information about the models and methods used for defining wildlife habitats in the project area. It describes "habitat model limitations" for each species or species group analyzed and explains that "[t]he model is limited primarily by the accuracy of aerial imagery interpretation and the inability to ground truth the land cover mapping." RDEIR/SDEIS at 10B-3. For each species group, it then provides further details about the model's limitations. For example, for vernal pool branchiopods, it explains: Vernal pool habitat must be inundated sufficiently by rainfall at the appropriate time of year to allow vernal pool branchiopods to reach maturity and reproduce; if the availability of aerial imagery is limited or the	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the reliability of available special-status species surveys and habitat models. The RDEIR/SDEIS does not characterize the species habitat models as unreliable, but rather acknowledges that there are limitations due to the use of aerial imagery interpretation and the species habitat requirements. Per Mitigation Measure WILD-1.1, suitable habitat for vernal pool branchiopods will be assessed once property access is granted and prior to the start of construction.

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	resolution is poor, it may not be possible to accurately determine the sufficiency of ponding. Additionally, very small seasonal wetlands that could provide suitable habitat may not be visible on aerial imagery. Other parameters that affect the habitat suitability for vernal pool branchiopods that are not measurable using aerial imagery review include water quality, ponding depth, and water temperature (U.S. Fish and Wildlife Service 2005:xiii, xiv). RDEIR/SDEIS at 10B-3. In combination, the descriptions of the modeling limitations make clear that the RDEIR/SDEIS's modeling of vegetation, wetlands, and wildlife is extremely coarse, inaccurate, unreliable, and not verified with any on-the-ground survey information. Yet this modeling is the basis for the RDEIR/SDEIS's description of the environmental setting and the basis for its analysis of impacts for these resource areas.	
66-32	The coarse nature of the models used in the RDEIR/SDEIS obscures the existence, extent, and location of particularly sensitive habitats, denying the public the opportunity to understand and comment on the project's true impacts. For example, the RDEIR/SDEIS groups vernal pools and alkali wetlands along with several other wetland types under a category called "seasonal wetlands" in the description of the environmental setting and associated maps. Vernal pools and alkali wetlands are special types of seasonal wetlands that are a high priority for conservation because so few remain. But the RDEIR/SDEIS only provides location information for the broader category of "seasonal wetlands" and does not show the specific locations of vernal pools or alkali wetlands. Instead, it notes that "[a]dditional refinement of the mapping, including the resource boundaries and types (e.g., seasonal wetlands that are vernal pools or alkali wetlands) will be developed in coordination with agencies and with onsite surveys during the permitting process." RDEIR/SDEIS at 9B-10. Deferring mapping of habitat types that are of critical conservation concern until after the NEPA	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of the wetland and non-wetland water survey data and the adequacy of mitigation under NEPA. As mentioned in Master Response 6, the desktop delineation methods are accepted by the U.S. Army Corps of Engineers (USACE), and they provide preliminary delineation data sufficient for CEQA and NEPA analyses. Field verification of wetland and non-wetland water features will occur during the Clean Water Act permitting process with USACE. Please see Impact VEG-3 for the description of impacts on seasonal wetlands.

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	and CEQA process makes it impossible for the public to understand and meaningfully comment on the project's impacts.	
66-33	The RDEIR/SDEIS indicates that, in addition to the modeling based on areal imagery, information on the extent and location of vegetation, wetland, and wildlife resources is also based on surveys conducted in 1998 and 2003. See, e.g., RDEIR/SDEIS at 9-3. However, we are unable to discern how the old survey data are integrated into the description of the environmental setting or the impacts analysis, and it is not clear that they are integrated at all. See, e.g., RDEIR/SDEIS at 10-7 (suggesting that the previous surveys were too old and therefore not used). To the extent the old survey data were used, reliance on them is problematic for all of the reasons discussed in our comments on the 2017 DEIR/DEIS, including because climate change is altering temperature and hydrologic patterns in the Sacramento Valley in a manner that impacts wildlife habitat suitability. See also CDFW Comments on 2017 DEIR/DEIS at 19 ("Botanical surveys were conducted in 1998 and 1999 within the reservoir footprint, and in 2000 through 2003 for potential conveyance routes, recreation areas, and road relocations. These surveys are out of date. CDFW recommends resurveying all areas associated within the Project area that would be impacted.").	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the special-status species survey data that were used in the evaluation of 2020 baseline conditions for special-status plants and animals in conjunction with extensive habitat modeling. This response also describes the mitigation measures that require preconstruction surveys to confirm the accuracy of prior surveys and the modeling efforts.
66-34	The RDEIR/SDEIS's reliance on coarse and inaccurate habitat modeling (and potentially also on old survey data) is particularly problematic because more accurate approaches were available. For example, the lead agencies could have conducted on-the-ground surveys. The RDEIR/SDEIS explains that the lead agencies had to rely on coarse modeling based on areal imagery because "[p]roperty access restrictions to most of the Project area precluded field investigations of vegetation and wetland resources in the study area." RDEIR/SDEIS at 9-8. However, project proponents were able to gain access to survey 75 percent of the study area between 1998 and 2003, and the RDEIR/SDEIS indicates that they did so by seeking court orders to access properties. RDEIR/SDEIS at 9-8, 3-4. The lead agencies also "pursued	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of habitat modeling and the current lack of property access needed to conduct additional surveys. The Authority and Reclamation made a concerted effort to obtain access to these parcels in recent years and were unable to do so. The proposed mitigation measures, which include extensive preconstruction surveys, will confirm the accuracy of the modeling effort.

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	targeted access in recent years to support environmental clearance for geotechnical investigations." RDEIR/SDEIS at 3-4 to 3-5. It seems that the lead agencies could have found a way to access the project area to conduct meaningful surveys for vegetation, wetlands, and wildlife--as they have in the past and did recently for geotechnical investigations--but chose not to prioritize access to the project area for these surveys. See City of Agoura Hills, 46 Cal.App.5th at 692-93 (use of outdated plant surveys violated CEQA, where document discussed future surveys but there was no showing that it was infeasible to perform these surveys prior to project approval so that the document could provide an accurate assessment of impacts).	
66-35	The proponents also failed to consider other approaches that could have yielded more accurate information about the environmental setting, in order to accurately assess the environmental impacts of the proposed project and alternatives. For example, the RDEIR/SDEIS discusses conducting helicopter surveys to assess nest occupancy for golden eagles in the future. RDEIR/SDEIS at 10-97 to 10-98. The lead agencies could have, but did not, conduct helicopter surveys to inform the analysis in the RDEIR/SDEIS for golden eagles and perhaps other species as well. There are also detailed habitat suitability maps for some species that overlap with the project area and that do not appear to have been considered in the RDEIR/SDEIS. For example, Attachment A to the 2015 Programmatic Formal Consultation for Bureau of Reclamation's Proposed Central Valley Project Long Term Water Transfers (2015-2024) with Potential Effects on the Giant Garter Snake within Sacramento Valley, California includes a habitat suitability map and maps of priority habitat areas for giant garter snakes. Inclusion of relevant information from these maps--and similar information for other species--in the description of the environmental setting would have helped to provide a more meaningful understanding of the project's likely impacts to giant garter snakes and other sensitive wildlife.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the various surveying and modeling techniques used to provide information about the environmental setting. Both helicopter and ground-based surveys for bald and golden eagles were conducted in 2022. Data from these surveys will be used by the Authority and regulatory agencies to inform the permitting process. While the 2015 Programmatic Formal Consultation for Bureau of Reclamation's Proposed Central Valley Project Long Term Water Transfers (2015-2024) with Potential Effects on the Giant Garter Snake within Sacramento Valley, California is available online, the attachment to this document is unavailable. The habitat model for giant gartersnake was based on scientific literature, was reviewed by USFWS and California Department of Fish and Wildlife (CDFW), and provides sufficient baseline habitat information that was used to assess potential habitat impacts on giant gartersnake habitat.

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66-36	The coarse and inaccurate discussion of the presence and location of vegetation, wetlands, and wildlife in the project area render the discussion of the project's environmental setting unreliable. As discussed further below, this undermines the analysis of impacts for these resource areas in a manner that makes it impossible for the public to understand the nature and extent of the project's impacts and deprives the public of an opportunity to meaningfully comment on alternatives. For these reasons, the RDEIR/SDEIS violates CEQA and NEPA, and the lead agencies must recirculate a revised draft EIS/EIR for public comment after conducting accurate surveys of vegetation, wetlands, and wildlife in the project area.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses how the 2020 baseline conditions for vegetation, wetlands, wildlife were determined, special-status species survey data, and the habitat models that were used as the basis for CEQA/NEPA impact analysis and the adequacy of mitigation. Also please see Appendix 9B, Vegetation and Wetland Methods and Information, for the methods of land cover type mapping, which was the basis for the habitat models. Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the legal basis for recirculation of the RDEIR/SDEIS, which is not required.
66-37	V. The CALSIM Modeling Used in the RDEIR/SDEIS to Analyze Potential Environmental Impacts Appears to be Significantly Flawed, Making all of the Analyses Questionable It appears that the CALSIM modeling that is used in the RDEIR/SDEIS is significantly corrupted and flawed, raising serious questions about the accuracy of the analyses in the RDEIR/SDEIS. For instance, the modeling shows that, as compared to the No Action Alternative, Alternative 1A results in diversions of Sacramento River flows greater than 1,000 cfs on average in January (in Wet and Above Normal water years), February (in Wet, Above Normal, and Below Normal water years), and March (in Wet, Above Normal, Below Normal, and Dry water years). RDEIR/SDEIS at Table 5B1-3-1c. Similarly, the modeling shows that these diversions for Sites Reservoir under Alternative 1A would reduce flows in the Sacramento River at Hamilton City by more than 1,000 cfs in January (in Wet and Above Normal water years), February (in Wet, Above Normal, and Below Normal water years) and March (in Wet, Above Normal, Below Normal, and Dry water years). RDEIR/SDEIS at Table 5B2-13-1c. Yet inexplicably, the modeling in the RDEIR/SDEIS shows that diversions to Sites under Alternative 1A would cause substantially less reduction in flows in the Sacramento River at Wilkins Slough, with	The CALSIM II modeling is not significantly flawed. Please see Master Response 3, Hydrology and Hydrologic Modeling, regarding the use of CALSIM II for the purposes of representing the existing system and conditions under Project operations. The model accurately represents water routed through the Sacramento River and various other locations within the system, including spills over multiple weirs, depending on multiple variables, including hydrologic conditions and diversions. The model results show the change in flow along the Sacramento River varies, depending on location. The model results show Project diversions have the greatest in-river change to flow immediately downstream of the two diversion facilities (Red Bluff and Hamilton City), which would be expected under Project conditions. Downstream of Hamilton City, there are several weirs, allowing flow to enter the Sutter Bypass and Yolo Bypass, depending on conditions. Between Hamilton City and Wilkins Slough, there are four weirs over which Sacramento River water may spill: Ord Ferry, Moulton Weir, Colusa Weir, and Tisdale Weir. When Sacramento River flow is lower, less water is spilled into Sutter Bypass (through any one of the weirs listed above). As such, the reduction in differences in flow between

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	reductions in flow greater than 1,000 cfs only in March (Above Normal and Below Normal water years). Id. At Table 5B2-14-1c. Similarly, there is much less of a reduction in flow in the Sacramento River at Freeport under Alternative 1A. Id. At Table 5B3-1-1c (showing flow reduction is greater than 1,000 cfs only in March (in Above Normal, Below Normal, and Dry water years). But Alternative 1A results in reductions in Delta outflow that are greater than 1,000 cfs in January (in Wet and Above Normal water years), February (in Wet, Above Normal, and Below Normal water years), and March (in Wet, Above Normal, Below Normal, and Dry water years). Id. At Table 5B3-5-1c. The modeling indicates that Alternative 1 reduces flows in the Sacramento River at Hamilton City and Delta outflow by similar amounts, but causes far lesser reductions in flow between these points. The modeling also shows that flows through the Yolo Bypass are reduced as a result of the proposed project and do not account for the change in flow between Freeport and Delta outflow. RDEIR/SDEIS at Table 5B3-3-1c. These results do not appear to be credible, and the RDEIR/SDEIS does not provide any explanation why the reduction in flow upstream caused by diversions under the proposed project and alternatives would not result in similar reductions in flow at other locations downstream. [Footnote 10: The RDEIR/SDEIS shows that this is not the result of releases from Sites, as there is on average only 1 cfs of releases from Sites in January, 0 cfs in February, and 2 cfs in March. See RDEIR/SDEIS at Table 5B1-6-1c.]	Hamilton City and Wilkins Slough under Project operations is associated with a reduction in spills into Sutter Bypass. Furthermore, the same phenomenon occurs with spills over the Fremont Weir, based on the combination of Sacramento River, Feather River, and Sutter Bypass flow, and over the Sacramento Weir into the Yolo Bypass. These spills change the difference in flow observed in the modeled results for Project operations and the No Project Alternative between Wilkins Slough and Freeport. CALSIM II weir spill results are included in Appendix 5B2, River Operations, in the Final EIR/EIS.
66-38	[Exhibit 1: Table showing Diversions - data taken from multiple tables in RDEIR/SDEIS]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
66-39	In addition, the RDEIR/SDEIS provides entirely inconsistent results of the effects of diversions to Sites under Alternative 1A on flows in the Sacramento River at Wilkins Slough. Compare RDEIR/SDEIS at Table 5B2-14-1c with id. at Table 5C-9-1c. These two tables [Exhibits 2 & 3] should show	The results presented in Appendix 5B2, River Operations, Table 5B2-14-1c, are from the CALSIM II model. The results presented in Appendix 5C, Upper Sacramento River Daily River Flow and Operations Model, Table 5C-9-1c, are from USRDOM. Although

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	identical results because they are comparing the same alternatives, but they do not.	USRDOM utilizes the operations modeled in CALSIM II, differences in results are expected. Please review Appendix 5C, Sections 5C.1, Introduction, and 5C.2, Methods, for more information on the differences between the models.
66-40	[Exhibit 2: Table 5C-9-1c. Sacramento River Flow at Wilkins Slough, Alternative 1A 011221 minus No Action Alternative 011221, Monthly Flow (cfs)]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
66-41	[Exhibit 3 - Table 5B2-14-1c. Sacramento River at Wilkins Slough Flow, Alternative 1A 011221 minus No Action Alternative 011221, Monthly Flow (cfs)]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
66-42	The Daily Divertible and Storable Flow Tool fails to include any Above Normal years, which results in a failure to adequately analyze potential impacts to salmon. RDEIR/SDEIS Attachment 11P-1 (describing Daily Divertible Flow Tool). This tool uses 2009-2018 hydrology, a period which contains no Above Normal years. There are only two Wet years during this period, and the tool identified significant impacts to salmon in both of these years. RDEIR/SDEIS at 11P-4. While the RDEIR/SDEIS suggests that mitigation Measure FISH-2.1 could reduce impacts to salmon from the project diversions, it shows that the project's impacts are not fully mitigated in one of those two years (2011) and would still result in reduced salmon survival through the Delta. Id. at 11P-8. In addition, because hydrologic conditions in 2011 are similar to that of Above Normal years, it indicates that unmitigated impacts are likely to occur in Above Normal years and other years similar to 2011. The decision to exclude Above Normal years from the analysis means that possible significant impacts in Above Normal years are unknown, and the RDEIR/SDEIS fails to analyze the effectiveness of Project Mitigation Measure FISH-2.1 in Above Normal years. Therefore, the RDEIR/SDEIS must be revised to include analysis of Above Normal years, such as 2000, 2003, and 2005.	Please see Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures. Above Normal Water Years were not excluded from the analysis as suggested by the comment; rather, such data were simply not available for that particular analysis. The analysis has been revised in the Final EIR/EIS to reflect bypass flows at Wilkins Slough at 10,700 cfs from October 1 to June 14 and shows essentially 0% difference in survival, which would remain true for Above Normal Water Years due to the nature of the flow threshold relationship and the bypass flow threshold being based on this relationship (i.e., no diversions below the threshold). In addition, note that the impact determination does not solely rely on this analysis based on the Sites Reservoir Daily Divertible and Storable Flow Tool. Flow-survival is also analyzed through a different form of statistical relationship based on the IOS model, which includes explicit assessment of Above Normal Water Years, and confirms little or no difference (0%–1%) between the Project alternatives and the No Project Alternative.

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66-43	The CALSIM modeling in the RDEIR/SDEIS is internally inconsistent and limited, and appears to be flawed and corrupted. All analyses in the RDEIR/SDEIS that use CALSIM to assess the effects of the project are unreliable.	Please see responses to comments 66-10 and 66-37 regarding the accuracy and reliability of the modeling. Please also see Master Response 3, Hydrology and Hydrologic Modeling, which discusses the adequacy and reliability of CALSIM II in evaluating Sites operations in the CVP and SWP systems.
66-44	VI. The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts and Fails to Disclose Significant Adverse Environmental Impacts of the Proposed Project and Alternatives (66) (A) The RDEIR/SDEIS Fails to Accurately Assess Environmental Impacts Because it Ignores Changes in Flow or Storage Less Than 5 or 10 Percent The RDEIR/SDEIS' analysis of significant environmental impacts violates NEPA and CEQA because it assumes that changes in flow or storage less than 5 percent and/or 10 percent are insignificant. However, changes in flow and/or storage less than 5 percent or 10 percent frequently results in these levels dropping below key thresholds relating to the survival of native fish species, including species listed under the California Endangered Species Act ("CESA") and the federal Endangered Species Act ("ESA"). As a result, even changes in flow or storage levels that are a less than 5 percent change from the baseline clearly can and do cause significant adverse impacts to native fish species. Moreover, for salmon and other species, reductions in flow less than 5 percent have synergistic impacts that can be devastating for these species, as reduced flows reduce survival in multiple reaches of the Sacramento River and through the Delta, resulting in cumulatively significant reductions in survival. As a result, the RDEIR/SDEIS fails to disclose significant impacts of the proposed project and alternatives to species listed under CESA and the ESA, for which mandatory findings of significance are warranted. The RDEIR/SDEIS must be revised to eliminate	The 5% or 10% values are not used as thresholds in making impact determinations in the EIR/EIS. Please refer to Master Response 5, Aquatic Biological Resources, for discussions of: (1) thresholds and criteria used in the analyses, and (2) treatment of special-status fish species with respect to CEQA and NEPA requirements, including baseline conditions.

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	the assumption that changes in flow or storage less than 5 percent and less than 10 percent are insignificant.	
66-45	The RDEIR/SDEIS claims that the CALSIM model is not accurate enough to assess changes in flow or storage less than 5 percent, stating that, Incremental flow and storage changes of 5% or less in modeled results are generally considered within the standard range of uncertainty associated with model processing. Therefore, for the purposes of the impact analysis, flow changes of 5% or less were considered to be similar to the NAA for comparative purposes. Changes in flow exceeding 10% were considered to represent a potentially meaningful difference. RDEIR/SDEIS at 11-57. These 5 percent and 10 percent thresholds of significance are arbitrary, inconsistent with other NEPA/CEQA documents prepared by Reclamation, and not supported by substantial evidence. Moreover, to the extent that CALSIM 2 fails to accurately assess impacts, the RDEIR/SDEIS fails to explain why it does not use the CALSIM 3 model, which has been publicly released by DWR and incorporates more recent hydrological data.	The 5% or 10% values are not used as thresholds in making impact determinations in the EIR/EIS. Please see Master Response 5, Aquatic Biological Resources, for discussions of thresholds and criteria used in analyses, as well as uncertainty. In addition, please refer to Master Response 3, Hydrology and Hydrologic Modeling, for more information on the use of CALSIM II.
66-46	The RDEIR/SDEIS provides no justification for why changes in flow less than the 10 percent threshold would not be considered a potentially meaningful difference. The lack of any explanation for this assumption regarding the 10 percent threshold makes it plainly arbitrary and capricious.	The 10% value is not used in making impact determinations in the EIR/EIS. Please refer to Master Response 5, Aquatic Biological Resources, which addresses the adequacy of thresholds and criteria used in the analyses.
66-47	The justification for the 5 percent threshold is also irrational and not supported by substantial evidence. Because CALSIM modeling is used in a comparative manner (meaning that it is used to model conditions under both the environmental baseline and action alternatives), there is no need for the 5 percent or 10 percent thresholds. Importantly, there is no basis to conclude that Sacramento River flow reductions due to diversions to storage under the proposed project are an illusory modeling artifact; instead, reduced flow in the Sacramento River is an inevitable and necessary	The 5% or 10% values are not used as thresholds in making impact determinations in the EIR/EIS. Please see Master Response 5, Aquatic Biological Resources, for a discussion of thresholds and criteria used in analyses.

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	consequence of diverting water from the Sacramento River to fill Sites Reservoir. While the CALSIM model does have significant flaws, failing to disclose changes in flow that are 5 percent (or 10 percent) or less as a significant impact misleads the public and decisionmakers. In fact, other CEQA/NEPA documents that use CALSIM modeling do not use a 5 percent or 10 percent thresholds for determining whether changes in flow or storage constitute a significant impact. For instance, the final CEQA/NEPA documents for the California WaterFix project did not use these thresholds, and the RDEIR/SDEIS provides no reasoned explanation why these assumptions are necessary since they have been omitted from other CEQA/NEPA analyses where CALSIM is used.	
66-48	The RDEIR/SDEIS does not consistently employ these [5 and 10 percent] thresholds. If a 5 percent change is significant, then to avoid impacts the project could simply limit diversions to levels that produce a less than 5 percent change in flow, yet it fails to do this. In addition, changes in Delta outflow from the proposed project are generally less than 5 percent, see RDEIR/SDEIS at Table 5B3-5- 1a, yet as the RDEIR/SDEIS admits, the reduction in abundance of Longfin Smelt that results from reduced Delta outflow would be a significant impact requiring Mitigation, see id. at 11-271.	The 5% or 10% values are not used as thresholds in making impact determinations. Please refer to Master Response 5, Aquatic Biological Resources, which addresses the adequacy of thresholds and criteria used in the analyses. Master Response 5 also addresses the longfin smelt impact analyses and associated mitigation measures.
66-49	Using these 5 percent and 10 percent thresholds results in the RDEIR/SDEIS failing to disclose significant environmental impacts for which mitigation is required. For instance, the RDEIR/SDEIS claims that the project and alternatives would cause a significant impact to winter-run Chinook salmon if diversions by the proposed project or alternatives caused flows in the Sacramento River to drop below 10,700 cfs. RDEIR/SDEIS at 11-130 to 11-131. However, because the RDEIR/SDEIS assumes that a 5 percent reduction in flows in the Sacramento River is simply a modeling artifact and not a real change, the RDEIR/SDEIS would not identify operations that reduce flows by 4 percent, but drop below 10,700 cfs, as a significant effect. Similarly,	The 5% or 10% values are not used as thresholds in making impact determinations in the EIR/EIS. Please refer to Master Response 5, Aquatic Biological Resources, which addresses the adequacy of thresholds and criteria used in the analyses.

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	although the IOS life cycle model used in the RDEIR/SDEIS finds that on average, winter-run Chinook salmon escapement is 3 percent lower under Alternative 1A and 4 percent lower under Alternative 1B, with greater reductions in escapement in wetter water year types, see RDEIR/SDEIS at 11-128, the RDEIR/SDEIS wrongly concludes this is a less than significant effect.	
66-50	The use of arbitrary thresholds for identifying significant impacts is inconsistent with the CEQA guidelines, which require a mandatory finding of significance if a project would "cause a fish or wildlife population to drop below self-sustaining levels" or "substantially reduce the number or restrict the range of an endangered, rare or threatened species." Cal. Code Regs., tit. 14, § 15065(a)(1). Where, as here, populations of winter-run Chinook salmon, Longfin Smelt, Delta Smelt, and other species are below self-sustaining levels, any further impacts that causes those populations to further drop below self-sustaining levels is a per se significant impact under CEQA requiring mitigation. [Footnote 12: In addition, we note that CESA requires that the impacts of the project on listed species be fully mitigated and not jeopardize the continued existence of the species, see Cal. Fish and Game Code § 2081, regardless of whether those impacts are designated as significant under CEQA.] As one example, the RDEIR/SDEIS finds, using the IOS life cycle model, that Alternative 1A would reduce the long-term abundance of winter-run Chinook salmon by 3 percent on average, as a result of reducing survival through the Sacramento River by 1 percent and through the Delta by 1-2 percent. RDEIR/SDEIS at 11-128 to 11-129. The population of winter-run Chinook salmon is not self-sustaining under baseline conditions, and the impact of Alternative 1A is therefore per se a significant impact requiring mitigation. Cal. Code Regs., tit. 14, § 15065(a)(1). The RDEIR/SDEIS fails to accurately analyze environmental effects and disclose significant environmental impacts because of the use of these arbitrary 5 percent and 10 percent thresholds. The RDEIR/SDEIS must be	The 5% or 10% values are not used as thresholds in making impact determinations in the EIR/EIS. Please refer to Master Response 5, Aquatic Biological Resources, which addresses the adequacy of thresholds and criteria used in the analyses. Please also see Master Response 5 for a discussion of CEQA and NEPA requirements as they pertain to special-status fish species and how these planning processes differ from the permitting ones (including under the federal and state Endangered Species Act).

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	revised to exclude these improper assumptions regarding the effects of the proposed project and alternatives.	
66-51	As the RDEIR/SDEIS admits, the OBAN model does not account for the flow:survival relationship in the Sacramento River, RDEIR/SDEIS at 11-129 to 11-130, and therefore the OBAN model does not provide an accurate assessment of the effects of the proposed project and alternatives on salmon. Similarly, the SALMOD model does not accurately assess the effects of the proposed project and alternatives, including because it does not account for the flow:survival relationships in the Sacramento River and through the Delta; SALMOD is an outdated and discredited model should not be relied upon.	For the Final EIR/EIS, the OBAN model has been updated to adjust for flow-survival relationships. This update does not change any impact determinations or conclusions. The OBAN model provides only one of several pieces of evidence representing the best available science and forming the weight of evidence to support impact conclusions. SALMOD assesses potential effects of water temperature and flows on annual juvenile Chinook salmon production, which is calculated as the number of juveniles at the location of the RBDD. As such, and as characterized in the EIR/EIS, SALMOD ends at the location of the RBDD and makes no claim to assess effects in the Sacramento River downstream of this location or in the Delta. SALMOD has been used in several analyses of changing water infrastructure and operations projects. It has not been discredited or characterized as outdated in these documents. As with OBAN, it is one of several analyses representing the best available science used to form the weight of evidence approach to the impact analysis.
66-52	(B) The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Winter-Run Chinook salmon and Fails to Disclose Significant Impacts of the Proposed Project The RDEIR/SDEIS erroneously claims that the proposed project and alternatives will not cause significant environmental impacts to winter-run Chinook salmon; however, this conclusion is based on flawed and internally inconsistent analyses that fail to accurately assess the likely impacts of the proposed project and alternatives. The proposed mitigation measure FISH-2 fails to mitigate impacts to winter-run Chinook salmon, and the proposed project and alternatives will cause reduced survival and abundance of winter-run Chinook salmon, which is a significant impact in light of the fact	The Wilkins Slough diversion criteria have been refined in the Final EIR/EIS to higher minimum flow standard of 10,700 cfs October 1 to June 14, as described in Master Response 2, Alternatives Description and Baseline. See Master Response 5, Aquatic Biological Resources, regarding the adequacy of the tools, thresholds, and criteria used in the analysis of Project effects on salmonid habitat that supports the determination of no significant impact. The models supporting the impact analyses reflect these changes, and the results presented in Chapter 11, Aquatic Biological Resources, do not support the commenter's assertion that the Project will cause significant impacts on winter-run Chinook salmon. With the revision of the Wilkins Slough minimum bypass flow, now part of the operation criteria, and

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	that the species is declining and is not self-sustaining under baseline conditions. Cal. Code Regs., tit. 14, § 15065(a)(1). The RDEIR/SDEIS must be revised to accurately characterize impacts to winter-run Chinook salmon and to identify adequate mitigation measures that eliminate significant impacts to winter-run Chinook salmon.	the revised pulse flow protection criteria, operations of Alternative 1, 2, or 3 would not result in adverse effects on winter-run Chinook salmon and would not require mitigation. Please refer to Chapter 11 for more details regarding the results of the migration flow-survival analyses and life-cycle models supporting these conclusions. Please also refer to Master Response 5 for a discussion of the proper application of California Code of Regulations, Title 14, Section 15065(a)(a) as it relates to baseline conditions and special-status species and of differences between the planning requirements (CEQA/NEPA) and permitting processes (including under the federal and state Endangered Species Act).
66-53	(66) (i) The RDEIR/SDEIS Fails to Disclose Significant Environmental Impacts to Winter-Run Chinook Salmon Caused by Reduced Flows in the Sacramento River Due to Incorrect Assumptions Regarding Migration Timing Although the RDEIR/SDEIS acknowledges the scientific evidence demonstrating that reduced flows in the Sacramento River as a result of diversions to fill Sites Reservoir will reduce the survival of migrating juvenile salmon, the RDEIR/SDEIS concludes that mitigation measure FISH-2 will reduce these impacts to a less than significant level. See RDEIR/SDEIS at 11-130 to 11-131. This conclusion is arbitrary and capricious because mitigation measure FISH-2 applies only in the months of March to May, whereas winter-run Chinook salmon juveniles migrate past the diversion points for Sites Reservoir from October to May.	Please see Master Response 5, Aquatic Biological Resources, for a discussion of flow-related impacts on juvenile migrating salmonids and associated mitigation measures. As described in Master Response 2, Alternatives Description and Baseline, and Master Response 5, Aquatic Biological Resources, the Wilkins Slough flow criteria have been refined in the Final EIR/EIS to increase flow standards and extended to October 1 to June 14 to cover the migration period for all the runs of salmon and steelhead in the Sacramento River. The criteria are also now part of the Project description and are no longer a mitigation measure. The Sacramento River is fully appropriated June 15 to August 31, so the Project would not have a right to divert water in that time period.
66-54	The RDEIR/SDEIS admits that diversions to Sites Reservoir that reduce flows in the Sacramento River at Wilkins Slough below 10,700 cfs would reduce the survival of winter-run Chinook salmon and constitute a significant environmental impact. Id. at 11-130 to 11-131. Numerous peer reviewed scientific studies have demonstrated a strong flow:survival relationship for juvenile salmon migrating down the Sacramento River, such that reduced	In the Final EIR/EIS, the Project alternatives' operational criteria now include the Wilkins Slough bypass flow criterion of 10,700 cfs from October 1 to June 14, thereby addressing concerns that the juvenile salmonid migration period is not covered by the criteria. Please also see Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures.

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	flows as a result of diversions by Sites Reservoir would reduce the survival of juvenile salmon. See, e.g., Michel et al. 2015; Cordoleni et al. 2017; Notch 2017; Henderson et al. 2018; Michel 2018; Michel et al. 2021). The RDEIR/SDEIS claims that mitigation measure FISH-2, which prohibits diversions for Sites Reservoir when Sacramento River flows are less than 10,700 cfs at Wilkins Slough between March to April, would reduce these impacts to a less than significant impact while salmon are rearing or migrating downstream toward the Delta. RDEIR/SDEIS at 11-130 to 11-131 ("Mitigation Measure FISH-2.1 will limit the potential for negative flow-survival effects to winter-run Chinook salmon during their dispersal to rearing habitat and/or migration downstream toward the Delta"). However, as the RDEIR/SDEIS admits, winter-run Chinook salmon migrate past the diversion points for Sites Reservoir (at the Red Bluff Diversion Dam and at Hamilton City) and past Wilkins Slough well before the month of March, which is when the protections provided by FISH-2 would begin, and they are generally migrating out of the Delta between December and May. See RDEIR/SDEIS at 11-79 to 11-80 (noting that half of the annual migration of juvenile winter-run Chinook salmon have passed the Red Bluff Diversion Dam before late October and 90 percent before January 1; noting that winter-run Chinook salmon are caught in Knights Landing rotary screw traps between mid-September to mid-March, with the bulk of the run (90 percent) generally passing between early October to mid-March; noting that winter-run Chinook salmon are generally caught in the Chipps Island trawls between December 1 and May); see id. at 11-124 ("the main period of juvenile winter-run Chinook salmon occurrence in the Delta (i.e., December-April")). Indeed, most migrating juvenile Chinook salmon, including nearly all juveniles of the winter-run and late-fall run, will not be protected by this bypass flow requirement as most of these fish have	

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	migrated downstream of Knights Landing before March. See Williams 2006; NMFS 2019 BiOp at 67-68, 83-84; Munsch et al. 2019 at Figure 3; RDEIR/SDEIS at 11-120. In other words, mitigation measure FISH-2 will limit pumping that reduces flows in the Sacramento River below 10,700 cfs only after winter-run Chinook salmon have already migrated downstream to the Delta, and as a result this mitigation measure wholly fails to protect juvenile winter-run Chinook salmon from the harmful effects of the proposed project and alternatives as they migrate down the Sacramento River. The RDEIR/SDEIS' conclusion that the proposed project and alternatives will not cause significant environmental impacts to winter-run Chinook salmon is arbitrary and capricious, and the document must be revised to include adequate mitigation measures that apply when winter-run Chinook salmon are migrating down the Sacramento River.	
66-55	(ii) The RDEIR/SDEIS Fails to Disclose Significant Environmental Impacts to Winter-Run Chinook Salmon Caused by Reduced Flows in the Sacramento River Because it Misapplies Recent Scientific Studies Citing recent research demonstrating strong and positive flow-survival relationships for juvenile Chinook salmon, the RDEIR/SDEIS acknowledges that diversions to Sites Reservoir have the potential to reduce Sacramento River instream flows and survival of juvenile salmonids, including winter-run Chinook salmon (RDEIR/SDEIS at p. 11-119). The proposed project includes Mitigation Measure FISH-2.1 which would prevent project diversions from reducing Sacramento River flow below 10,712 cfs at Wilkins Slough during March, April, and May. Above this flow, survival of juvenile Chinook salmon studied by Michel et al. (2021) averaged just over 50 percent in a particular reach of the Sacramento River; below this threshold survival dropped dramatically to 18.9 percent in the same reach. Michel et al. (2021) measured the effect of flow on survival for a subset of migrating Chinook salmon through a portion of their freshwater life cycle.	Please see Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures, including a discussion about the adequacy of the Michel et al. (2021) study and other available studies with flow-survival relationships.

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	They measured survival rates downstream of where egg-to-fry survival is measured and upstream of the lower Sacramento River and Delta, where additional mortality occurs; their study focused on juvenile Chinook salmon that are larger than 75mm long. To put their results in context, typical freshwater survival (from egg stage to the outmigrating smolt stage) for Chinook salmon across their range is approximately 10 percent (Quinn 2005; SEP 2019). In the Sacramento River, egg-to-fry survival between 2002 and 2018 averaged 24.4 percent for winter-run Chinook salmon and 13.7 percent for fall-run Chinook salmon (Voss and Poytress 2020). Thus, under current conditions, attaining species-typical survival rates for Chinook salmon is challenging in many years even if survival is 50 percent in the reach that contains Wilkins Slough. It is therefore essential to the viability of Sacramento River Chinook salmon runs that survival in this reach be maximized whenever possible. However, the proposed flow threshold in this mitigation measure is inadequate to prevent significant impacts to Sacramento River Chinook salmon runs. First, diversions that reduce Sacramento River flows to the proposed threshold may reduce survival of migrating juvenile Chinook salmon in the size class studied by Michel et al. (2021). Although this study found strong evidence of decreased survival at flows <10,712 cfs, very few observations were made for flows between 14,000 and 21,000 cfs (Figure 3); the effects of reducing flow on survival are less certain in this range and it is quite possible that survival benefits of flows above 10,712 cfs were not detected by Michel et al. (2021). The best available science (including Michel et al. 2015; Henderson et al. 2018; Michel 2019; Munsch et al. 2020; Notch et al. 2020) suggests that decreasing flows in this reach of the Sacramento River (by diverting water to Sites Reservoir) when flows are between 10,712 and approximately 20,000 cfs will reduce survival of Chinook salmon juveniles.	

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66-56	Second, the bypass flow requirement is based around the success of relatively large migrating juvenile Chinook salmon. Diverting flows above the proposed threshold may cause significant negative effects for the much larger portion of the juvenile Chinook salmon population that measures less than 75mm in fork length. Michel et al. (2021) used sonic tags to track survival and movements of the fish they studied; their flow results apply only to fish large enough to carry a sonic tag. Migration behavior and habitat use of juvenile salmon varies with size (Quinn 2005; Williams 2006), so it is highly likely that increasing flow rates benefit smaller fish in ways and at levels that differ from those detected among the large fish studied by Michel et al. (2021). In fact, several other recent studies have documented continuous increases in survival and abundance as Sacramento River flows increase (Michel 2019; Notch et al. 2020); similar continuous positive relationships have been found among Chinook salmon in the San Joaquin River and its tributaries (SEP 2019). Furthermore, Munsch et al. (2019) identified a Sacramento River flow threshold associated with high likelihood of detection of small juvenile Chinook salmon ("fry"; greater than 55mm) in the Delta; they also found that abundance of fry increased continuously with increasing flows. Therefore, it is likely that reducing Sacramento River flows in a range above ~10,712 cfs will reduce survival rates among a significant portion of migrating juvenile Chinook salmon.	Please see Master Response 5, Aquatic Biological Resources, for a discussion of flow-related impacts on juvenile migrating salmonids and associated mitigation measures, including a discussion about the adequacy of the Michel et al. (2021) approach in terms of factors such as comparing continuous versus thresholds relationships and issues related to smaller salmonids.
66-57	Third, the proposed flow bypass mitigation allows no margin for error and is thus likely to result in frequent loss of real survival benefits ascribed to the greater than or equal to 10,712cfs flow threshold. The bypass requirement allows flows to be reduced to exactly the threshold identified by Michel et al. (2021), despite known levels of uncertainty around this parameter estimate. Whereas the benefit of flows above 10,712 cfs is believed to be all-or-nothing (i.e., it is a threshold), errors in estimating that threshold, measuring actual flows in the river, or changes in the threshold from year-to-year or among salmonid populations (e.g., spring-run v. fall-run) could	Please see Master Response 5, Aquatic Biological Resources, for a discussion of flow-related impacts on juvenile migrating salmonids and associated mitigation measures, as well as uncertainty. Master Response 5 also includes a discussion about the adequacy of the Michel et al. (2021) approach. The Authority is developing an adaptive management plan to address inevitable uncertainties through ongoing and future research efforts that could inform future refinements of the Project's operational criteria. Please see Appendix 2D, Best Management Practices, Management Plans, and Technical

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	lead to the elimination of all positive effects of this proposed mitigation. In fact, Michel et al. (2021) estimate uncertainty around their flow threshold (at p. 9, Figure 4), and, as with any ecological study, the results are drawn only from a limited number of real-world situations that may not fully characterize natural variability in the flow-survival relationship. As the RDEIR/SDEIS acknowledges (at 11-130): "There is some uncertainty in the modeled flowsurvival effects and in the ability to limit potential effects with real-time operational adjustments." These uncertainties must be factored into bypass flow mitigation by raising the threshold by a safety factor that accounts for environmental variability and measurement error.	Studies, Section 2D.6, Fish Monitoring and Technical Studies Plan and Adaptive Management for Diversions, for more information.
66-58	In addition, the RDEIR/SDEIS' analysis of riverine survival of salmon is flawed and fails to accurately assess environmental impacts because it does not model or analyze the effects of the proposed project and alternatives. First, the RDEIR/SDEIS' analysis of the effects of reduced flows on salmon survival only considers the effects of water diversions on salmon survival in the Sacramento River between January 1 to May 31. See RDEIR/SDEIS at 11P-3. However, the vast majority of winter-run Chinook salmon have migrated past Red Bluff Diversion Dam (the upstream diversion point for Sites Reservoir) before January 1 in Many years. See id. at 11-79 to 11-80. Thus, the analysis in the RDEIR/SDEIS ignores the effects of reduced flows caused by diversions for the proposed project and alternatives that affects the vast majority of winter-run Chinook salmon, even though the proposed project and alternatives can divert water during these months.	Please see Master Response 5, Aquatic Biological Resources, for a discussion of flows and mitigation measures, including the expanded date ranges of analysis in Appendix 11P, Riverine Flow-Survival. The analysis shows 0% difference in survival for all years analyzed.
66-59	The RDEIR/SDEIS' analysis of the effects of reduced flows on salmon survival includes operational restrictions (such as a prohibition on diversions when Delta outflow is less than 44,500 cfs during the months of March to May) that are more protective than, and not included in, the proposed project and alternatives. Compare RDEIR/SDEIS at 11P-2 to 11P-3 with id. at 2-31, 5A1-29 to 5A1-30, 5A2-28 to 5A2-33.	All models and assumptions reflect the contents in Chapter 2, Project Description and Alternatives, and the description of Project operations. The quantitative analysis in Appendix 11P, Riverine Flow-Survival, relies on results from the DDSFT, not CALSIM II. The DDSFT estimated the volume of water available for diversion under recent hydrologic conditions, whereas CALSIM II is an operations model that assesses and operates to conditions in the CVP/SWP system. As the

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		DDSFT does not actively simulate operations of the CVP/SWP system, it relies on certain indicators (or results of operational actions) to understand system conditions. The DDSFT consideration of 44,500 cfs of Delta outflow in April and May reflects conditions in which CALSIM II operates. As such, despite variances in methodology and modeled assumptions, both tools appropriately analyze the operation of the Project.
66-60	The RDEIR/SDEIS' analysis in Appendix 11P assumes that the proportion of salmon migrating down the Sacramento River on a daily basis is the same proportion that passed the Red Bluff sampling station, but acoustic tag data shows a wide variation in the speed of juvenile salmon migration between Red Bluff and Knights Landing (Klimley et al. 2017); without this assumption, the analysis shows significantly greater reductions in survival of juvenile salmon. See RDEIR/SDEIS at 11P-5. As a result of these flawed assumptions, the RDEIR/SDEIS fails to accurately analyze the effects of the proposed project and alternatives.	Please see Master Response 5, Aquatic Biological Resources, for a discussion of flows and mitigation measures, including a discussion of the modeling of migration speeds.
66-61	(iii) The RDEIR/SDEIS Fails to Disclose Significant Environmental Impacts to Winter-Run Chinook Salmon Caused by Reduced Flows in the Lower Sacramento River and Delta The RDEIR/SDEIS' analysis of the effects of the proposed project and alternatives on the survival of juvenile winter-run Chinook salmon through the lower Sacramento River and Delta also fails to accurately assess impacts and fails to disclose significant impacts from the proposed project and alternatives. As the RDEIR/SDEIS acknowledges, there is a strong flow:survival relationship in several reaches in the Delta, and reductions in instream flow results in reduced survival of juvenile salmon. Perry et al. 2018; see RDEIR/SDEIS at 11-123 to 11-124. The RDEIR/SDEIS claims that diversions to Sites Reservoir under the proposed project would result in small changes in survival of salmon migrating through the Delta. RDEIR/SDEIS at 11-124 to 11-125. However, this analysis is misleading to	The analysis cited by the commenter illustrates what are qualitatively small differences in survival based on the analysis using the through-Delta survival function of Perry et al. (2018). This is consistent in the Final EIR/EIS. The analysis is transparent and described in detail in Appendix 11J, Through-Delta Survival and Delta Rearing Habitat of Juvenile Chinook Salmon.

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	the public and decisionmakers, and it fails to disclose significant environmental impacts to winter-run Chinook salmon that would result.	
66-62	Because the RDEIR/SDEIS' modeled effects of the proposed project and alternatives on flows in the Sacramento River at Freeport is inaccurate (estimating smaller reductions in flow than would actually occur under the proposed project and alternatives), see supra Section V [see comments 38-42], the assessment of effects on survival of salmon through the Delta is likewise inaccurate, underestimating the adverse impacts to winter-run Chinook salmon that are likely to occur.	Please see responses to comments 66-38, 66-39, 66-40, 66-41, and 66-42 and Master Response 3, Hydrology and Hydrologic Modeling, for a discussion of the appropriateness of the modeling. As described therein, the modeling is not inaccurate, and, as such, the assessment of effects on survival of salmon through the Delta is also not inaccurate.
66-63	The RDEIR/SDEIS analyzes the reductions in survival through the Delta using the Perry et al. 2018 model, averaged by month and water year type. RDEIR/SDEIS at 11-124. This analysis is misleading because it does not present the annual results -- the effects of reduced survival over the course of the year for juvenile salmon that are migrating downstream. The RDEIR/SDEIS also shows that juvenile winter-run Chinook salmon survival through the Delta would be reduced by 1-2 percent under Alternative 1A, based on the IOS model. RDEIR/SDEIS at 11-129. In light of the status of the species, this constitutes a significant impact under CEQA that is not disclosed in the RDEIR/SDEIS.	Presentation of the results by month is similar to the style of presentation of the Perry et al. (2018) model by the authors of that model (Perry et al. 2020), when done recently in the context of the Long-Term Operation of the State Water Project (see, for example, Figure 11 of Perry et al. 2020, showing summary of results by day, without annual summary). The small differences in through-Delta survival by month (0%–2%) during the main winter-run Chinook salmon migration period (December–April) would amount to the same level of difference over the whole several-month migration period. This is consistent with the level of difference suggested by the Delta Passage Model component of the IOS model that the commenter cross-references. Regarding the impact finding under CEQA, the RDEIR/SDEIS did conclude that there would be significant impact on winter-run Chinook salmon and thus proposed Mitigation Measure FISH-2.1 to reduce that impact to a final determination of less than significant. As described in Master Response 2, Alternatives Description and Baseline, the Wilkins Slough bypass flow criteria have been refined in the Final EIR/EIS to higher flow standards for an extended period and incorporated into the Project description as operational criteria. The

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		updated modeling shows essentially no difference between the Project operations and the status quo.
66-64	Equally important, the effects of the proposed project in reducing survival of juvenile winter-run Chinook salmon migrating through the Delta can be far greater when Sites diverts more water from the Sacramento River than in an average water year, which is what is disclosed in Table 11- 16. Unlike the analysis of riverine survival in the RDEIR/SDEIS, the analysis of through-Delta survival of salmon only evaluates effects using average water diversions from the Sacramento River by water year type. RDEIR/SDEIS at Table 11-16; id. At Table 11J-1. Annual water diversions by the proposed project and alternatives used in the RDEIR/SDEIS are approximately 344,000 acre feet in a Wet year and 354,000 acre feet in an Above Normal water year type. See RDEIR/SDEIS at Table 5B1-3-1c. Yet in wetter water years like 2017, Sites can divert more than 1 million acre feet of water under the proposed operating criteria. See Sites Reservoir Project, 2021 Water Estimate, May 28, 2021, at 8 (attached hereto as Exhibit 1 [Attachment 1]). The RDEIR/SDEIS fails to analyze the effects of diversions greater than the average for that water year type, where the reductions in survival through the Delta are likely to be substantially higher as a result of greater reductions in flow at Freeport. See Perry et al. 2018; RDEIR/SDEIS at Fig. 11J-1. Reduced survival is the clear consequence of the flow: survival relationship and inadequate operational criteria that are proposed.	Resources, Table 11-24 does not assess only juvenile Chinook salmon in an average water year. All years are analyzed, and the survival results are averaged by water year type, in keeping with what is appropriate for analyses that are based on CALSIM modeling (see Master Response 5, Aquatic Biological Resources, for discussion of use of means in reporting modeling results). Higher diversions in wetter years such as the 2017 example reflect more water available in the system for diversion, subject to the restrictions proposed with operating criteria, which limit the potential for negative effects (see Chapter 2, Project Description and Alternatives, Section 2.5.2, Operations and Maintenance Common to Alternatives 1, 2, and 3, of the Final EIR/EIS). The results presented in the EIR/EIS reflect analysis for all years. Please also see response to comment 66-63 with respect to updates to Mitigation Measure FISH-2.1.
66-65	The RDEIR/SDEIS' analysis of the effects of the proposed project and alternatives on the survival of winter-run Chinook salmon through the Delta must be revised to incorporate accurate modeling of project operations and to disclose the higher reductions in survival that result in years with greater than average levels of water diversions.	Please see responses to comments 66-63 and 66-64, which address the commenter's concerns regarding presentation of modeling results.
66-66	(iv) The RDEIR/SDEIS Fails to Disclose Significant Environmental Impacts to Winter-Run Chinook Salmon	The RDEIR/SDEIS found that there would be a significant impact on winter-run Chinook salmon as a result of proposed diversions and

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	Taken together, the RDEIR/SDEIS shows that the proposed project and alternatives will reduce the abundance of winter-run Chinook salmon, which are listed as endangered under CESA, and will cause winter-run Chinook salmon to drop further below self-sustaining levels. This constitutes a significant impact under CEQA. Cal. Code Regs., tit. 14, § 15065(a)(1). The RDEIR/SDEIS finds, using the IOS life cycle model, that Alternative 1A causes an average 3 percent reduction in adult abundance (escapement) of winter-run Chinook salmon, as a result of Alternative 1A reducing juvenile survival through the Delta by 1-2 percent and reducing juvenile survival through the Sacramento River by 0-1 percent. RDEIR/SDEIS at 11-128 to 11-129. As described above, these are likely substantial underestimates of the project's impacts; however, even assuming for the sake of argument that they are accurate, in light of the fact that winter-run Chinook salmon are listed as endangered and their population is below self-sustaining levels, these additional reductions in survival and abundance are per se significant impacts requiring mitigation. Cal. Code Regs., tit. 14, § 15065(a)(1). The RDEIR/SDEIS must be revised to disclose this significant impact and to identify adequate mitigation measures that eliminate significant impacts.	included Mitigation Measure FISH-2.1 to reduce the impact to less than significant. Please also see responses to comments 66-63 and 66-64 and the discussions regarding flow and mitigation measures, as well as the subsection on baseline and special-status species in Master Response 5, Aquatic Biological Resources.
66-67	(C) The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Spring-Run Chinook Salmon and Fails to Disclose Significant Impacts of the Proposed Project As with winter-run Chinook salmon, the RDEIR/SDEIS fails to adequately analyze impacts of the proposed project and alternatives on spring-run Chinook salmon and fails to disclose significant impacts that are likely to occur under the proposed project and alternatives. First, proposed mitigation measure FISH-2 fails to adequately protect spring-run Chinook salmon from the significant impacts of diversions by Sites Reservoir because substantial numbers of spring-run Chinook salmon would have already migrated down the Sacramento River and into the Delta each year before	The commenter expresses concerns that Mitigation Measure FISH-2.1 does not cover the full migration period of juvenile spring-run Chinook salmon. In the Final EIR/EIS, Wilkins Slough bypass flow criteria are part of the Project alternative operational criteria (as opposed to a mitigation measure) and cover the October 1 to June 14 period. These additional criteria address the December to March period described by the commenter (see Master Response 2, Alternatives Description and Baseline). Please also see the responses to comments 66-63 and 66-64 and the discussion regarding flow and mitigation measures in Master Response 5, Aquatic Biological Resources.

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	this mitigation measure would be implemented, resulting in substantial reductions in survival of these migrating juvenile salmon. Significant proportions of spring-run Chinook salmon generally migrate downstream of Hamilton City as early as December, and spring-run Chinook salmon are frequently found in the Delta (in both surveys and salvage) by March. RDEIR/SDEIS at 11-132 to 11-134; id., Appendix 11A at 1-13 to 1-21; 2019 NMFS BiOp at 82-83. More than half (50 percent) of the spring-run Chinook salmon population in the Sacramento Basin migrated past the Knights Landing before March 1 in many years (including Brood Years 2015, 2014, 2012, 2010, 2007, 2005, and 2003). RDEIR/SDEIS, Appendix 11A at 1-15. None of the spring-run Chinook salmon that migrate to the Delta before March would be protected by mitigation measure FISH-2, meaning that in many years less than half of the population would be protected by the proposed mitigation measure. As a result, the proposed project and alternatives would cause significant impacts by reducing survival of these migrating salmon.	
66-68	The proposed flow threshold of 10,712 cfs used in Mitigation Measure FISH-2 is inadequate for the same reasons identified with respect to winter-run Chinook salmon. See supra [see comments 62-67]. And as with winter-run Chinook salmon, the RDEIR/SDEIS fails to adequately analyze impacts to riverine or Delta survival because it uses flawed CALSIM modeling that underestimates the reduction in flows into the Delta and fails to analyze impacts to riverine survival before January 1, despite the fact that significant numbers of spring-run Chinook salmon migrate past Red Bluff and even Hamilton City before that date. Id. Finally, because spring-run Chinook salmon populations are listed under CESA and are not currently viable, even small reductions in survival caused by the proposed project and alternatives that cause this population to fall further below self-reproducing levels constitute a significant impact under CEQA. Cal. Code Regs., tit. 14, § 15065(a)(1).	Please see Master Response 5, Aquatic Biological Resources, for a discussion of the revised analysis in the Final EIR/EIS related to bypass flows at Wilkins Slough. As mentioned in Master Response 5, the Wilkins Slough bypass flow criterion of 10,700 cfs is now part of the Project operational criteria (instead of a mitigation measure) and covers the period from October 1 to June 14, which includes key salmonid outmigration periods during the Project's diversion season. Please also refer to Master Response 5 for a discussion of the proper application of California Code of Regulations, title 14, section 15065(a)(a) as it relates to baseline conditions and special-status species and of differences between the planning requirements (CEQA/NEPA) and permitting processes (including under the federal and state Endangered Species Acts). Master Response 5 also addresses the adequacy of the tools, thresholds, and criteria used in

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		the analysis of Project effects on salmonid habitat that supports the determination of no significant impact. Please also see Master Response 3, Hydrology and Hydrologic Modeling, regarding the adequacy of CALSIM II as the best available hydrologic modeling tool.
66-69	(D)The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Fall-Run Chinook Salmon and Fails to Disclose Significant Impacts of the Proposed Project Like the flawed analysis of impacts to winter-run and spring-run Chinook salmon, the RDEIR/SDEIS fails to adequately analyze impacts of the proposed project and alternatives on fall-run Chinook salmon and fails to disclose significant impacts that would result. First, a substantial proportion of the fall-run Chinook salmon population migrates down the Sacramento River by March 1, before mitigation measure FISH-2 limits diversions by the proposed project and alternatives. See RDEIR/SDEIS at 11-157 to 11-164, 11-189; id., Appendix 11A at 1-22 to 1-30. For instance, according to the RDEIR/SDEIS more than half of the fall-run Chinook salmon population that migrates past Red Bluff does so before March 1 in most years. Id., Appendix 11A at 1-22 (50 percent passage at Red Bluff Diversion Dam before March 1 for all Brood Years 2019, 2018, 2015, 2014, 2013, 2012, 2010-2004). Similarly, more than half of the run was estimated to have passed Knights Landing before March 1 in most years. Id., Appendix 11A at 1-24 (Brood Years 2019, 2018, 2016, 2015, 2014, 2012-2003). And the RDEIR/SDEIS asserts that the majority of fall-run Chinook salmon are already in the Delta between January and May. Id. At 11-189. As a result, a significant proportion of the fall-run Chinook salmon population has already migrated downstream and is not protected by mitigation measure FISH-2, and the proposed project and alternatives would cause significant environmental impacts by reducing the survival of these juvenile salmon down the Sacramento River and through the Delta.	Please see Master Response 5, Aquatic Biological Resources, for a discussion of the revised analysis in the Final EIR/EIS related to bypass flows at Wilkins Slough. As mentioned in Master Response 5, the Wilkins Slough bypass flow criterion of 10,700 cfs is now part of the Project operational criteria (instead of a mitigation measure) and covers the period from October 1 to June 14, which includes key salmonid outmigration periods during the Project's diversion season.

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66-70	The proposed flow threshold of 10,712 cfs in Mitigation Measure FISH-2 is inadequate for the same reasons identified with respect to winter-run Chinook salmon. See supra [see comments 62-67]. And as with winter-run Chinook salmon, the RDEIR/SDEIS fails to adequately analyze impacts to riverine or Delta survival because it uses flawed CALSIM modeling that underestimates the reduction in flows into the Delta and fails to analyze impacts to riverine survival before January 1, despite significant numbers of fall-run Chinook salmon migrating past Red Bluff Diversion Dam and even Hamilton City before that date. Id.	Please see Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures, including a discussion about modeling for winter-run Chinook salmon.
66-71	(E) The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Longfin Smelt and Fails to Disclose Significant Impacts of the Proposed Project The RDEIR/SDEIS ignores or underestimates potentially significant impacts to the San Francisco Estuary's Longfin Smelt population. Longfin Smelt are listed under CESA as a threatened species because they have experienced dramatic declines in abundance over several decades. Abundance of this population is strongly correlated with Delta outflow (Jassby et al. 1995; Kimmerer 2002; Rosenfield and Baxter 2007; Kimmerer et al. 2009; Thomson et al. 2010; Mac Nally et al. 2010) as is juvenile recruitment/productivity (Nobriga and Rosenfield 2016) and distribution (Dege and Brown 2004; CDFG 2009; Lewis et al. 2019b). Entrainment-related mortality is positively correlated with exports, and negatively correlated with Delta outflows and prior abundance indices (CDFG 2009; Grimaldo et al. 2009; Rosenfield 2010).	Please see Master Response 5, Aquatic Biological Resources, which addresses the outflow-abundance effects on longfin smelt. Master Response 5 also addresses how entrainment-related mortality correlates with outflow-abundance effects on longfin smelt.
66-72	(66) (i) The RDEIR/SDEIS Fails to Accurately Analyze Impacts from Entrainment The RDEIR/SDEIS ignores the likely significant impact of additional Longfin Smelt entrainment arising from the proposed project. Given its precarious conservation status, any increase in entrainment-related mortality is likely to threaten the viability of Longfin Smelt in the San Francisco Estuary. This is	Please see Master Response 5, Aquatic Biological Resources, which addresses the adequacy of impact analyses related to longfin smelt entrainment. Master Response 5 also addresses why conclusions made regarding delta smelt would not apply to longfin smelt.

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	particularly true given that entrainment of Longfin Smelt has historically been highest when population numbers are low and environmental conditions lead to low Longfin Smelt production (Rosenfield 2010). Despite these known patterns, the RDEIR/SDEIS inappropriately ignores increases in entrainment-related mortality that are likely to occur as a result of increased water exports and decreased Delta outflow. To the extent that Delta Smelt and Longfin Smelt are similar (both smelt have experienced significant declines, are pelagic swimmers, and spawn, at times, in the zone of influence of CVP and SWP export facilities), recent findings on the effects of entrainment-related mortality on Delta Smelt apply, in general, to Longfin Smelt. Smith et al. (2021) state: In a population in which recruitment success rates cannot sustain the population, no additional mortality is sustainable . . . No additional mortality can be sustained by the population, but that does not mean that entrainment mortality of 0 will result in its recovery Smith et al. 2021 at p. 14.	
66-73	The existing CDFW conceptual model for Longfin Smelt life history finds that combined CVP/SWP exports is a significant predictor of combined CVP/SWP salvage of adult Longfin Smelt (Rosenfield 2010). Also, Delta outflow in January-March is significantly and negatively correlated with total annual Longfin Smelt entrainment (Rosenfield 2010 at Figure 9); salvage consists mostly of juvenile Longfin Smelt and occurs mainly during April-June (Grimaldo et al. 2009). This led CDFW to suggest that Delta outflow in the winter affects the distribution of Longfin Smelt and the subsequent juvenile cohort (CDFG 2009; Rosenfield 2010). Entrainment of larval Longfin Smelt (which is not measured at CVP/SWP fish salvage facilities) is believed to be positively correlated with X2 and increasingly negative values of Old and Middle River (OMR) flow. The RDEIR/SDEIS fails to estimate changes in entrainment to larval Longfin Smelt or to connect such changes in mortality to overall Longfin Smelt population dynamics.	Please see Master Response 5, Aquatic Biological Resources, which addresses the effects of potential increase in larval longfin smelt entrainment. Master Response 5 also addresses how changes in entrainment mortality correlates with outflow-abundance effects on longfin smelt.

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66-74	The RDEIR/SDEIS fails to describe any safe level of Longfin Smelt entrainment, much less acceptable increases in that entrainment caused by the project -- it simply categorizes negative directional changes in conditions that promote entrainment as "small." Average X2 increases under all project alternatives -- increasing the risk of entrainment for all life stages of Longfin Smelt (CDFG 2009; Rosenfield 2010) in every month from December-May of Critically Dry years when Longfin Smelt are at significant risk of entrainment mortality (Appendix 6B3: Tables 6b3-1-1c, 2c, 3c, and 4c). Because the X2 values reported are averages, it is extremely likely that some years will experience a greater shift of X2 towards the export pumps, resulting in greater entrainment risk to all Longfin Smelt life stages. The assertion that the modeled changes in X2 are "small" is arbitrary and capricious -- relatively small changes in Delta outflow or X2 are all that is required to produce large changes in entrainment risk for Longfin Smelt (Rosenfield 2010).	Please see Master Response 5, Aquatic Biological Resources, which addresses the adequacy of impact analyses related to longfin smelt entrainment. In addition, Master Response 5 addresses the adequacy of categorizing the modeled changes in X2 as "small."
66-75	Combined with increasing X2 (which places more Longfin Smelt at risk of entrainment), more negative OMR flows expected under the proposed project and alternatives increase the likelihood of Longfin Smelt entrainment at levels that would pose significant risk to the overall population. Average OMR is projected to be more negative in December, March and April during Critically Dry years under all project alternatives (OMR is also more negative in January of Alternative 1A; Appendix 5B3, Tables 5B3-6-1c, 2c, 3c, and 4c) -- more negative OMR is correlated to the logarithm of Longfin Smelt salvage meaning entrainment-related mortality increases very rapidly as OMR becomes more negative (Grimaldo et al. 2009). Dismissing persistent and directional negative effects on an imperiled species by asserting, without evidence, that they are "small" is arbitrary and capricious. For example, with respect to endangered salmonids, NMFS has repeatedly warned that "[s]mall reductions across multiple life stages can be	Please see Master Response 5, Aquatic Biological Resources, which addresses the significance of different levels of impact analyses related to longfin smelt entrainment. In addition, Master Response 5 addresses the adequacy of categorizing the differences in entrainment risk indicators (such as X2) as "small."

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	sufficient to cause the extirpation of a population" and that a "1% to 2% mean reduction in survival is a notable reduction for an endangered species, especially if it occurs on a consistent (e.g., annual) basis" (NMFS 2017 at 736). Similarly, while commenting on Delta Smelt entrainment-related mortality, Kimmerer cautioned against dismissing small but persistent losses to fish productivity and stated that mortality related to export pumping ". . . can be simultaneously nearly undetectable in regression analysis, and devastating to the population. This also illustrates how inappropriate statistical significance is in deciding whether an effect is biologically relevant." (Kimmerer 2011 at p. 7). Thus, conditions under the proposed project that facilitate increased entrainment-related mortality (increasing flow towards the export facilities, increased X2) may have a significant negative effect on Longfin Smelt population viability and the likelihood that this species will recover in the wild.	
66-76	Entrainment of larval Longfin Smelt has never been effectively monitored, but we know that larval Longfin Smelt (a) are more abundant and weaker swimmers than juvenile or adult Longfin Smelt, (b) associate with the low salinity zone (Dege and Brown 2004; CDFG 2009; Hobbs et al. 2010) and are thus located closer to export facilities in drier years than in years with high Delta outflow, and (c) remain abundant into the late spring and early-summer, at least (as evidence by continued recruitment to the Bay Study's nets well into the summer and fall; Rosenfield and Baxter 2007). Thus, it is likely that entrainment mortality of larval Longfin Smelt follows the same general pattern as entrainment of older life stages -- increasing with increasing X2 and export rates -- and that larval entrainment-related mortality much larger than for juvenile and adults, in absolute and relative terms. Also, entrainment of Longfin Smelt larvae likely continues from January through spring and into early summer, as larval fish are abundant throughout this period. The RDEIR/SDEIS must be revised to analyze the effect of the proposed project on entrainment of larval Longfin Smelt and to	Please see Master Response 5, Aquatic Biological Resources, which addresses the effects of potential increase in larval longfin smelt entrainment. Master Response 5 also addresses how changes in entrainment mortality correlate with outflow-abundance effects on longfin smelt.

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	link the effect of any changes in entrainment-related mortality to overall Longfin Smelt population dynamics.	
66-77	(ii) The RDEIR/SDEIS Fails to Adequately Analyze Impacts on Longfin Smelt Abundance The best available science indicates that reductions in Delta inflow and Delta outflow during the winter and spring months under the proposed project will result in decreased Longfin Smelt productivity and overall declines in abundance, which constitute a significant impact under CEQA. Longfin Smelt abundance indices are strongly correlated with Delta outflow (Jassby et al. 1995; Kimmerer 2002; Rosenfield and Baxter 2007; CDFG 2009; Kimmerer et al. 2009; Thomson et al. 2010, MacNally et al. 2010; Nobriga and Rosenfield 2016). The RDEIR/SDEIS analysis of Aquatic Biological Resources states: "Winter-spring diversions for Alternatives 1, 2, and 3 would reduce Delta inflow and Delta outflow." RDEIR/SDEIS at 11-269. The best available science demonstrates that the proposed project and alternatives will have a negative effect on Longfin Smelt recruitment and overall abundance, constituting a significant impact under CEQA.	Consistent with this comment, the EIR/EIS concludes that there is a significant impact on longfin smelt from flow-related effects. Please also see Master Response 5, Aquatic Biological Resources, for a discussion related to longfin smelt and flow-related effects, including impacts on abundance.
66-78	Longfin Smelt viability is already severely impaired by reduced abundance. Even maintenance of the population at current levels exposes the population to high risk; further persistent declines in abundance of this CESA-listed fish's population that are projected under the proposed project would contribute significantly to the risk of Longfin Smelt extirpation from the San Francisco Estuary. Furthermore, the status quo for Longfin Smelt represents continued decline towards extinction. Maintenance of Delta outflows at levels permitted under the state's CESA incidental take permit for operation of the State Water Project are expected to result in declines in abundance of the Longfin Smelt population (DWR 2020 Final EIR at p. 5-135, Tables 5.3-8 and 5.3-9) and even that level of decline assumes that Delta outflow will be augmented in April and May of certain years; however, April-May Delta outflow augmentation is not reasonably likely to occur and	Please see Master Response 5, Aquatic Biological Resources, for discussions related to longfin smelt and flow-related effects, including impacts on abundance, as well as baseline and special-status species.

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	the biologically important outflow period is December to May (Nobriga and Rosenfield 2016), not March to May. For example, flows were not augmented in April 2021 as low Delta outflows violated D-1641 standards; the state also petitioned to waive Delta outflow requirements in February-April of 2022 despite acknowledging that reductions in Delta outflows below levels set in D-1641 will likely to harm the Longfin Smelt population (Reclamation and DWR 2021). Even prior to being weakened under the state CESA permit and waivers of Bay- Delta water quality control plan standards, status quo protections were demonstrably inadequate to protect Longfin Smelt; this is why the SWRCB (SWRCB 2010, 2017) previously concluded that Delta outflows need to increase in order to protect Longfin Smelt adequately. Thus, the proposed project anticipates degrading environmental conditions from a status quo that is already expected to cause Longfin Smelt population declines.	
66-79	The RDEIR/SDEIS's characterization of the proposed project's effects on Longfin Smelt understate the true impact of reductions in Delta outflow on this population because it relies on erroneous interpretation and misrepresentation of different models of Longfin Smelt population biology. Furthermore, neither of the analyses of flow effects on Longfin Smelt abundance incorporates potential persistent increases in entrainment-related mortality of Longfin Smelt adults, larvae, or juveniles, described above. Rather, the RDEIR/SDEIS relies on historical relationships between flow and adult abundance, ignoring the likelihood that abundance for any given outflow may decline if entrainment mortality is higher than it has historically been.	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to longfin smelt and flow-related effects, which addresses the adequacy of relying on historical relationships between flow and abundance for assessing outflow-abundance effects on longfin smelt.
66-80	Using a computer code that is intended to replicate a population model developed by Nobriga and Rosenfield (2016), the RDEIR/SDEIS concludes that there will be "small" negative effects on Longfin Smelt (RDEIR/SDEIS at 11-270) -- these negative effects are visible in all year types (RDEIR/SDEIS Tables 11-69, 11-70; see also Table 11-70). However, the RDEIR/SDEIS's	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to longfin smelt and flow-related effects, including a discussion about the adequacy of the Nobriga and Rosenfield model.

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	implementation of Nobriga and Rosenfield's (2016) population model and its interpretation of model results are unjustified and invalid (the RDEIR/SDEIS references DWR's 2020 implementation and interpretation of the same model, which were similarly flawed and invalid; see Appendix A: Critique of CDWR's modeling of Longfin Smelt abundance and productivity under different operational alternatives for the SWP March 12, 2020 (attached hereto as Exhibit 2 [Attachment 2]). As a result, the RDEIR/SDEIS's assertion that the differences between project alternatives and no action alternatives are "uncertain" is without merit. Specifically, the RDEIR/SDEIS applies Nobriga and Rosenfield's (2016) model inappropriately -- the original model was designed to evaluate different conceptual alternatives of Longfin Smelt population dynamics, not to predict or compare changes in population abundance under different water management regimes. Nobriga and Rosenfield (2016) found that Longfin Smelt juvenile recruitment was powerfully affected by changes in Delta outflow -- and Delta outflow was the only abiotic variable that produced a significant effect. As a result, their model will show lower recruitment of Longfin Smelt for management alternatives that reduce Delta outflow -- contrary to the RDEIR/SDEIS's implication, there is no uncertainty associated with this modeling result. The analysis in the body of the RDEIR/SDEIS obscures this certainty by inappropriately comparing all possible outcomes under different management alternatives rather than analyzing year-byyear pairwise differences between NAA and alternatives.	
66-81	The RDEIR/SDEIS confounds all the variability associated with the estuary's Longfin Smelt populations through time (including a 2-3 order of magnitude decline and that related to natural variation in Delta Outflow from year-to-year) with variation among operational alternatives that differ only in their annual winter-spring Delta outflow. For example, by categorizing years into year types (each of which includes great variation in Delta outflow, see Exhibit 2), the RDEIR/SDEIS mistakes natural variability	Please see Master Response 5, Aquatic Biological Resources, which addresses the outflow-abundance effects on longfin smelt, as well as uncertainty.

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	that has nothing to do with project alternatives for "uncertainty" in the outcomes of these alternatives. As a result, RDEIR/SDEIS Figures 11-36 and 11-37 are not valid and are extremely misleading regarding the certainty of persistent negative effects on Longfin Smelt that should be expected from implementation of any of the project alternatives. By presenting the high variation in model estimates of Longfin Smelt abundance across years and across decades as if it represented uncertainty about outcomes under different alternatives, the RDEIR/SDEIS's presentation undermines the entire purpose of comparing alternatives, which is to contrast differences that arise from different water management operations rather than background variation that is not related to the alternatives.	
66-82	In a prior analysis of a version of the underlying code used in the RDEIR/SDEIS, we found that the Longfin Smelt population response to changing Delta outflow is disproportionately high; for example, a 5 percent reduction in Delta outflow produces a greater than 5 percent reduction in projected Longfin Smelt abundance (see Exhibit 2). Given that population size in one generation affects abundance in the next generation (Nobriga and Rosenfield 2016), these differences among alternatives would be expected to compound over time (until the system's carrying capacity is reached). To emphasize: Nobriga and Rosenfield (2016) demonstrated that Delta outflow was extremely well correlated, over 5 decades, with Longfin Smelt juvenile productivity -- their model predicts that lower Delta Outflow as proposed under the proposed project and alternatives will result in lower Longfin Smelt productivity; the RDEIR/SDEIS's representation of that model and interpretation of its outputs are egregiously flawed and highly misleading.	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to longfin smelt and flow-related effects, including a discussion about the adequacy of the Nobriga and Rosenfield model.
66-83	The RDEIR/SDEIS also estimates changes in population abundance based on regressions between X2 and Longfin Smelt abundance. This estimate is very coarse and should be used to evaluate only the likely relative effects of project alternatives. This analysis reveals significant negative effects on	Please see Master Response 5, Aquatic Biological Resources, which addresses the adequacy of the X2-abundance regression in assessing the relative effects of the Project alternatives compared to the No Project Alternative.

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	Longfin Smelt abundance as a result of project alternatives in every year type; in fact, this analysis reveals that Longfin Smelt abundance under project alternative 1A will be lower relative to the NAA in over 70 percent of years analyzed in the RDEIR/SDEIS (Compare Appendix 11F Table 11F-7 to Table 11F-8). Here again, the RDEIR/SDEIS inappropriately treats mean abundance differences as though they are static, ignoring deviations from the reported mean difference in each year type (i.e., declines relative to the NAA will be greater in some years) which further increase the risk of irreparable harm to the population, and the compounding effect of abundance declines across multiple generations (Thomson et al. 2010; Nobriga and Rosenfield 2016). Furthermore, this regression approach assumes that Longfin Smelt abundance is a function of outflow alone -- in this model, prior abundance plays no role in subsequent abundance. Thus, if this regression approach showed that the population was extirpated, it could magically resurrect the population in subsequent years with higher flows. This obviously underestimates and ignores the permanent harm that can arise from persistent degradation of environmental conditions on Longfin Smelt populations under the proposed project.	
66-84	(iii) The RDEIR/SDEIS's Proposed Mitigation Measures Fail to Reduce Impacts to Longfin Smelt to a Less than Significant Level The RDEIR/SDEIS claims to mitigate anticipated negative impacts to Longfin Smelt arising from reduced Delta outflow by requiring 11-13 acres of tidal habitat restoration (negative effects of increased entrainment on Longfin Smelt abundance are ignored). There is no credible evidence to support the RDEIR/SDEIS's claim that tidal habitat restoration (especially such a tiny acreage) will benefit this population or mitigate for the expected (and understated) negative effects of the proposed project. Because there is no known effect of tidal habitat restoration on Longfin Smelt abundance and even the presumed mechanisms are highly uncertain and poorly defined,	Please see Master Response 5, Aquatic Biological Resources, which addresses adequacy of Mitigation Measure FISH-9.1 in reducing impacts related to outflow effects on longfin smelt to a less-than-significant level.

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	there is no scientifically supported methodology for calculating the amount of such habitat required to mitigate for the proposed project's effects. Despite significant tidal marsh habitat restoration in the Delta, the Napa estuary, and the South Bay, there is no evidence yet to demonstrate that these areas provide net benefits for the San Francisco Estuary's Longfin Smelt population (i.e., that they act as a "source" as opposed to a "sink"). Despite the restoration of several thousand acres of shallow tidal habitat that has occurred over the last several decades, Longfin Smelt abundance and productivity have not increased -- the flow-juvenile abundance relationship remains unchanged and survivorship from juveniles to adults has declined (Rosenfield and Baxter 2007; Nobriga and Rosenfield 2016). In fact, Longfin Smelt abundance has declined despite massive investment in shallow tidal habitat restoration. Although recent research has documented Longfin Smelt occurrence in marshes outside of the Delta-Suisun Bay region (Lewis et al. 2019a), there is no direct evidence that Longfin Smelt detected in these areas contribute to the adult population. Results of a preliminary otolith chemistry "fingerprinting" study concluded, ". . . Of the adult fish that were classified with moderate confidence (e.g., 75%), nearly all appeared to have reared in the northern [San Francisco Estuary] . . . " (Lewis et al. 2019b at p. 9 and Figures 17 and 18 at p. 75 of the PDF). Indeed, it is not clear that Longfin Smelt found in shallow tidal habitats downstream of Suisun Bay originated in those habitats or reproduce successfully as a result of those habitats. For example, although researchers have detected substantial numbers of Longfin Smelt west of Suisun Bay, this occurred primarily during the exceedingly wet years 2017 and 2019 (Lewis et al. 2019b) and even then it was not clear that the fish detected were produced in local marshes; Lewis et al. stated (2019b at p. 6) : ". . . It is valuable to consider whether, with high Delta outflows, it is feasible and probable that larval and juvenile Longfin Smelt found in high numbers in San Pablo Bay, and even Lower South San Francisco Bay, could have been transported from Delta and Suisun Bay	

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	spawning sites by currents, tides, and winds." Although these same researchers caught pre-reproductive adult and larval Longfin Smelt in shallow tidal habitats downstream of Suisun Bay and the Delta, they were circumspect regarding the importance of spawning and rearing in these habitats, stating that their value "remains unknown." (Lewis et al. 2019b at p. 2; see also at p. 6).	
66-85	The notion that shallow tidal habitat restoration can mitigate declines in Longfin Smelt caused by reduced outflow is entirely speculative. Among other things, this concept presumes that larval production is limited by spawning and incubation habitat area; juvenile and adult Longfin Smelt are generally not found in shallow habitats (Rosenfield and Baxter 2007; Rosenfield 2010). The underlying hypothesis that the Longfin Smelt population is limited by production of larvae requires that the RDEIR/SDEIS demonstrate that (a) measurable numbers of additional larvae and juveniles will be produced by the required acres of shallow tidal habitat mitigation, and (b) this number of larvae and juveniles exceeds the significant decreases in Longfin Smelt production that can be expected as a result of reductions in Delta outflow. The RDEIR/SDEIS fails to make that comparison, at least in part because the benefit to Longfin Smelt of restoring a certain acreage of shallow tidal habitat is unknown, highly uncertain, and not currently estimable.	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to longfin smelt and Mitigation Measure FISH-9.1, including a discussion about the effectiveness of restoration.
66-86	The RDEIR/SDEIS problematically calculates the proposed acreage of mitigation based on differential entrainment of Longfin Smelt expected under the project alternatives versus under the NAA. This is inappropriate and arbitrary because (a) the RDEIR/SDEIS has concluded (without evidence) that entrainment of Longfin Smelt under the proposed project and alternatives "would be similar to the NAA" (at p. 11-268), (b) because the methods used to identify significant reductions in Longfin Smelt abundance under the project do not account for impacts arising from increased entrainment that are additional to the flow impact being mitigated, and (c)	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to longfin smelt and Mitigation Measure FISH-9.1, including a discussion regarding calculations of acres of mitigation.

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	because the mitigation calculation assumes (without evidence) some equivalence between acreage of tidal marsh restoration and acreage in which Longfin Smelt are affected by entrainment. Thus, the proposed mitigation calculation is without scientific support and is not relevant to the significant negative effect (reduced Longfin Smelt productivity resulting from reduced Delta outflow) that it is supposed to mitigate.	
66-87	Far from being a substitute for the well-described negative effects of reduced Delta outflow on Longfin Smelt abundance and productivity, the benefits of restoring putative Longfin Smelt spawning and rearing habitats in shallow tidal environments are highly uncertain, if they have any beneficial effect at all (Lewis et al. 2019b at pp. 44-45 of PDF). Clearly, more research is needed to demonstrate what, if any, value restored shallow tidal habitats have for the Longfin Smelt population in this estuary. Until such research is completed, it will not be possible to determine (a) that constructing these habitats actually benefits the Longfin Smelt population, and if it is beneficial, (b) how much of this habitat is necessary to mitigate impacts of the proposed project. Furthermore, there is no evidence that we know how to "restore" tidal habitats such that they benefit rather than harm Longfin Smelt. Although some shallow habitats where Longfin Smelt are now detected have been the subject of marsh restoration efforts (e.g., the South Bay Salt Ponds), historical records suggest that these fish occurred in these areas prior to restoration (Rosenfield 2010). There is no evidence to assess whether fish in these "restored" habitats do better or worse following habitat restoration. Certainly, there is no evidence to support the RDEIR/SDEIS's calculation of a precise acreage to mitigate for the persistent negative effects the proposed project is expected to have on Longfin Smelt abundance.	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to longfin smelt and Mitigation Measure FISH-9.1, including a discussion about the effectiveness of tidal habitat restoration.
66-88	Even if Longfin Smelt do reproduce and rear successfully in tidal habitats that have been restored, evidence suggests that any benefits will be limited to years when local stream flows and Delta outflows are high. Indeed, Lewis	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to longfin smelt and Mitigation Measure FISH-9.1

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	et al. (2019b at p. 6) write: (a) "It is unlikely that in dry, normal, or possibly even above normal years that such conditions would exists in each of these bay tributaries [west and south of the Carquinez Straights] sufficient enough to support substantial spawning and rearing. Thus in most years, the majority of suitable spawning and rearing habitats would likely occur in Suisun Bay/Marsh and the Delta," and (at p. 11) (b) ". . . Given the prevalence of drought conditions and limited outflows from the Napa River and Coyote Creek watersheds due to upstream catchment and diversion, suitable conditions for spawning appear to only occur in years of anomalously high precipitation." This pattern suggests that even if it is effective, restoring shallow tidal habitats in these areas will only counter the proposed project's negative effects during wetter years, whereas declines in Longfin Smelt abundance (and increases in Longfin Smelt entrainment) are expected in drier year types, when the population is at greatest risk. Furthermore, regardless of any mitigation that might occur as a result of the proposed habitat restoration, the benefits of this activity cannot possibly occur until the habitat is actually constructed and functioning. Tidal habitat restoration generally takes many years or decades to complete; therefore, under the very best scenario, negative effects of the proposed project will not be mitigated for several Longfin Smelt generations.	including a discussion about the lack of a specific location for tidal habitat restoration.
66-89	(F) The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Delta Smelt and Fails to Disclose Significant Impacts of the Proposed Project The RDEIR/SDEIS incorrectly concludes that the proposed project and alternatives would not cause significant adverse impacts on Delta Smelt, because it fails to analyze important aspects of the problem and because it unlawfully assumes that changes less than 5 percent cannot constitute a significant impact.	Please refer to Master Response 5, Aquatic Biological Resources, which addresses the adequacy of thresholds and criteria used in the analyses of delta smelt. As mentioned in Master Response 5, the 5% threshold value is not used in making impact determinations in the EIR/EIS.
66-90	The RDEIR/SDEIS ignores the effects of reductions in spring outflow on Delta Smelt recruitment. See Polansky et al. 2021; IEP MAST 2015. As	Please see Master Response 5, Aquatic Biological Resources, which addresses the revisions made to the Final EIR/EIS related to spring outflow effects on delta smelt.

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	Reclamation and DWR explained in the recent Temporary Urgency Change Petition submitted to the SWRCB, Subsequent analysis in a peer review journal using a nonlinear state space model by Polansky et al. (2021) found statistical support for both a negative effect of March through May X2 and Export:Inflow (E:I) ratio on recruitment of delta smelt. Thus the most recent analysis from Polansky et al. (2021) suggests the TUCP could result in negative effects to delta smelt, based on higher March through May X2 under the TUCP and TUCP with DCC options (~88.3 km) and TUCP with Collinsville X2 option (~82.3 km) relative to the base case (~81.1 km). Reclamation and DWR 2021. While the RDEIR/SDEIS discusses potential impacts of reduced Delta outflow on zooplankton, see RDEIR/SDEIS at 11-260 to 11-262, the document completely ignores Polansky et al. 2021 and the adverse impacts from reduced outflow on the recruitment and subsequent abundance of Delta Smelt.	
66-91	While the RDEIR/SDEIS acknowledges that diversions by the proposed project and alternatives could reduce abundance of zooplankton prey for Delta Smelt in the low salinity zone, it improperly concludes this would not be a significant impact because the changes in abundance of P. forbesi would be less than 5 percent. RDEIR/SDEIS at 11-260 to 11-261, 11-266. However, given the dire status of Delta Smelt, even a very small reduction in prey abundance could constitute a significant impact. See Cal. Code Regs., tit. 14, § 15065(a)(1). Moreover, in years when Sites Reservoir would divert more water and cause greater reductions in Delta outflow, there is likely to be greater reductions in Delta Smelt prey abundance as a result of the proposed project and alternatives.	Please see Master Response 5, Aquatic Biological Resources, which addresses the adequacy of the delta smelt analyses related to effects on zooplankton prey (Pseudodiaptomus forbesi).
66-92	The RDEIR/SDEIS finds that diversions by the proposed project and alternatives could reduce sediment loading to the Delta by up to 5 percent. RDEIR/SDEIS at 11-265. Reduced turbidity would significantly harm Delta Smelt, but the RDEIR/SDEIS finds that this impact is less than significant,	Please see Master Response 5, Aquatic Biological Resources, which addresses the adequacy of delta smelt impact analyses related to upstream sediment entrainment and supports the finding of less-than-significant impact. As mentioned in Master Response 5, the

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	based on the magnitude of the change and potential mitigation Measures. Id.; see Id. at 11-266. However, even a small reduction in sediment supply that reduces turbidity in the Delta may be a significant impact given that could further reduce Delta Smelt below selfsustaining levels, Cal. Code Regs., tit. 14, § 15064(a)(1). Moreover, other agencies have previously concluded that any reduction in sediment supply to the Delta and San Francisco Bay should be considered a significant impact. See Bay Conservation and Development Commission, comments on the Bay-Delta Conservation Plan, July 29, 2014 (attached hereto as Exhibit 3 [Attachment 3]). In addition, the potential mitigation measure unlawfully defers mitigation, because it does not describe specific performance metrics that would be used. See id., Appendix 2D, at 2D- 46 (stating that performance criteria will be established in the future--analysis of sediment entrainment impacts is deferred until after "at least 5 years" of project operation, and implementation of sediment reintroduction is deferred another 5 years, for at least a decade of unmitigated operation). For comparison, Delta Smelt live only 1 year; so this mitigation will not be implemented for at least 10 generations of Delta Smelt. The failure to identify specific performance standards that the mitigation measure must achieve is unlawful. Cal. Code Regs., tit. 14, § 15126.4(a)(1)(B).	EIR/EIS does not propose mitigation measures for the finding of less than significant. The EIR/EIS includes technical studies and adaptive management, which is not mitigation, to address uncertainty in the potential for upstream sediment entrainment effects. Please also refer to Master Response 5 for a discussion of the Bay Conservation and Development Commission's comments on the Bay-Delta Conservation Plan.
66-93	The RDEIR/SDEIS fails to evaluate, let alone demonstrate, that such potential mitigation measures are feasible, particularly since prior analyses (by ICF for the California WaterFix project) found that the vast majority of entrained sediment could not be reused.	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to delta smelt and upstream sediment entrainment, including the feasibility of proposed mitigation measures.
66-94	The RDEIR/SDEIS must be revised and recirculated with: (1) an accurate analysis of impacts from sediment entrainment; (2) analysis of the feasibility of sediment mitigation measures; (3) specific mitigation measures and performance standards identified to ensure that impacts are reduced to a less than significant level; and (4) proposed monitoring to evaluate the implementation of mitigation measures and adaptively modify the	Please see Master Response 5, Aquatic Biological Resources, which addresses the adequacy of delta smelt impact analyses related to upstream sediment entrainment and supports the finding of less-than-significant impact.

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	measures as needed. Developing mitigation measures a decade after the impact is already occurring is unlawful and imposes unacceptable impacts on the multiple endangered species that depend on turbidity in the Estuary.	
66-95	The RDEIR/SDEIS relies on an unlawful mitigation measure (FISH-8.1) to address potentially significant impacts to Delta Smelt from water released from Sites Reservoir, which does not describe specific performance criteria to avoid impacts but instead defers development of these performance criteria to a future process. RDEIR/SDEIS at 11-266 to 11-267 ("Dissolved oxygen and temperature criteria for determining effects will be developed in collaboration with the fishery agencies and will maintain existing DO and temperature levels suitable to delta smelt that will not exceed recognized critical physiological thresholds."). The failure to identify specific performance criteria makes this mitigation measure unlawful. Cal. Code Regs., tit. 14, § 15126.4(a)(1)(B).	Please see Master Response 5, Aquatic Biological Resources, for a discussion of the delta smelt impact analysis and mitigation measures and the effects from reservoir releases to the Colusa Basin Drain (CBD) and Yolo Bypass, including a discussion regarding the omission of specific performance criteria.
66-96	(G)The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Fish Below Golden Gate Dam and Sites Dam and Fails to Disclose Potentially Significant Impacts of the Proposed Project Flows required for maintaining fish in good condition below Golden Gate Dam and Sites Dam have not yet been identified or incorporated into the project design or mitigation measures. The lack of information on Funks Creek and Stone Corral Creek flow needs (fish assemblage, geomorphic flows, etc.) makes it impossible to understand and comment on the proposed project's environmental impacts. Studies have yet to be conducted on basic hydrology and fish needs. RDEIR/SDEIS at 2-38. The RDEIR/SDEIS must be revised to include sufficient information so decision-makers can evaluate if stream ecosystem needs downstream of the reservoir can be met or will be degraded by the project design. Concerns that should be analyzed in a revised environmental document include: -valve capacities of only 100 cfs (RDEIR/SDEIS at 2D-40), when Stone Corral Creek flows exceeding 500 cfs are common in wet years;	The U.S. Geological Survey operated a stream gage in Stone Corral Creek near the town of Sites, which is just upstream of the proposed Sites Dam location, from April 1958 to September 1985. No data are available for Funks Creek. This information was analyzed and presented in Chapter 11, Aquatic Biological Resources, and it was used to inform the proposed design of the release structures that would be needed to release flows into the creeks in compliance with water rights terms and conditions awarded to the Authority and to comply with California Fish and Game Code (CFGC) Section 5937. The analysis conducted in Chapter 11 was done consistent with methods proposed by Richter et. al. (2011) and is expected to maintain the streams and fish resources in a condition comparable to existing conditions. Subsequent to publication of the RDEIR/SDEIS, the Authority contracted with MBK Engineers to produce a longer-term estimate of streamflow on Stone Corral and Funks Creeks based on extrapolation of data from Elder Creek, located in Tehama County.

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	-effects of emergency releases of up to 2,500 cfs on Stone Corral Creek; and -sediment and fish passage needs, which should be evaluated earlier than "prior to construction of dams" (hydrogeomorphic technical study described on RDEIR/SDEIS at 2D-42) so they can be incorporated into the project design. We recommend using the tools and following the approach described in the California Environmental Flows Framework (CEFF; https://ceff.ucdavis.edu/) to conduct this analysis. Steps 1-10 of the Framework should inform the RDEIR/SDEIS, including "propose mitigation measures to offset impacts" as described in CEFF Step 10.	The Elder Creek gage was chosen because it was the nearest gage on the valley floor with a long record of data available. For the analysis, MBK assumed that Elder Creek has relatively similar precipitation and runoff patterns to Stone Corral Creek and Funks Creeks. The streamflow of Elder Creek has been measured since 1948 (USGS Gage No. 11379500). The gage site is approximately 49 miles northwest of the proposed Sites Reservoir and has a drainage area upstream of the gage of 92.4 square miles. The overlapping period of gage records for Stone Corral Creek and Elder Creek (1958–1985) was used to determine a logarithmic correlation between the two gages for each month of the year, and that was adjusted to account for the differences in size of the watersheds (MBK Engineers 2022). That analysis demonstrates a comparable pattern to that reported based on the limited stream gage data form Stone Corral Creek, which is little to no flow from June to November, higher flows associated with winter storms from December through March, and smaller flows in April and May. These updated flow data are included in Chapter 11. The U.S. Geological Survey operated a stream gage in Stone Corral Creek near the town of Sites, which is just upstream of the proposed Sites Dam location, from April 1958 to September 1985. No data are available for Funks Creek. This information was analyzed and presented in Chapter 11, Aquatic Biological Resources, and it was used to inform the proposed design of the release structures that would be needed to release flows into the creeks in compliance with water rights terms and conditions awarded to the Authority and to comply with CFGC Section 5937. The analysis conducted in Chapter 11 was done consistent with methods proposed by Richter et. al. (2011) and is expected to maintain the streams and fish resources in a condition comparable to existing conditions. Subsequent to

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		publication of the RDEIR/SDEIS, the Authority contracted with MBK Engineers to produce a longer-term estimate of streamflow on Stone Corral and Funks Creeks based on extrapolation of data from Elder Creek, located in Tehama County. The Elder Creek gage was chosen because it was the nearest gage on the valley floor with a long record of data available. For the analysis, MBK assumed that Elder Creek has relatively similar precipitation and runoff patterns to Stone Corral Creek and Funks Creeks. The streamflow of Elder Creek has been measured since 1948 (USGS Gage No. 11379500). The gage site is approximately 49 miles northwest of the proposed Sites Reservoir and has a drainage area upstream of the gage of 92.4 square miles. The overlapping period of gage records for Stone Corral Creek and Elder Creek (1958–1985) was used to determine a logarithmic correlation between the two gages for each month of the year, and that was adjusted to account for the differences in size of the watersheds (MBK Engineers 2022). That analysis demonstrates a comparable pattern to that reported based on the limited stream gage data form Stone Corral Creek, which is little to no flow from June to November, higher flows associated with winter storms from December through March, and smaller flows in April and May. These updated flow data are included in Chapter 11. Since the two creeks are located within private property, and access has not been granted, the only information available for the RDEIR/SDEIS regarding fish in Stone Corral and Funks Creeks is from the CALFED North of Delta Offstream Storage investigations. From July 1998 to January 1999, then-California Department of Fish and Game sampled 11 stations in Stone Corral Creek and 15 stations in Funks Creek (California Department of Fish and Game 2003). They reported species composition and relative abundance. They also reported stream type and substrate characteristics. All of the sample

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		stations were located within the reservoir inundation zone, and most were within 1 mile of the dam sites (California Department of Fish and Game 2003). No sampling of the stream reaches below the proposed dam locations was done as part of that investigation. In addition, data on stream hydrology is limited and dated. Nevertheless, the Authority recognized the limitations of the available information and proposed to conduct a series of studies to obtain information to update baseline hydrogeomorphic conditions, fish assemblage, habitat utilization, and ecology of the streams, as described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. The Authority expects to work cooperatively with the California Department of Fish and Wildlife on the design and implementation of these studies to ensure they provide the information to design a functional flow release strategy. While the analysis conducted in Chapter 11 was consistent with methods proposed by Richter et. al. (2011) and is expected to maintain the streams and fish resources in a condition comparable to existing conditions, the California Environmental Flows Framework may be considered if it is the desired approach and can be completed in time to inform final design prior to construction. The Authority is also committed to longer-term monitoring and management of the release strategy to ensure it achieves its purpose of maintaining the stream channels and fish that use them in good condition. Please see the Funks and Stone Corral Creeks section of Master Response 5, Aquatic Biological Resources, for a discussion of the data that will be updated for Funks and Stone Corral Creeks and CFGC Section 5937.
66-97	(H)The RDEIR/SDEIS Fails to Accurately Analyze Environmental Impacts to Wetlands and Terrestrial Wildlife and Fails to Disclose Significant Impacts of the Proposed Project	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses how the 2020 baseline conditions for wetlands and wildlife were determined and the use of species habitat models as the basis for the CEQA/NEPA impact analysis.

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	(i) The RDEIR/SDEIS Fails to Adequately Analyze Impacts to Wetlands and Terrestrial Wildlife Because the Analysis is Based on Inaccurate Species Distribution Information The coarse and inaccurate description of the environmental setting with respect to vegetation, wetlands, and wildlife resources, discussed supra [see comments 29-37], undermines the RDEIR/SDEIS's analysis of the proposed project's impacts to these resources. Without an accurate understanding of where specific resources are located, which the RDEIR/SDEIS fails to provide, it is impossible to understand the nature and extent of the project's impacts. Yet those impacts are likely to be profound, among other reasons because 33 special-status wildlife species are likely to occur in the study area. See RDEIR/SDEIS at 10-16.	
66-98	The RDEIR/SDEIS suggests that the inaccurate assessment of impacts is acceptable for two reasons, neither of which is legally valid. First, the RDEIR/SDEIS suggests that, because detailed on-the-ground surveys will occur in the future, the lack of detailed and accurate information in the RDEIR/SDEIS is acceptable: After land acquisition and prior to construction actions, the Authority would complete additional biological surveys to confirm mapped habitat types and the presence/absence of biological resources including, but not limited to, specialstatus species, state and federal waters, sensitive plant communities and other applicable resources identified as sensitive by state, and/or federal agencies and discussed in Chapter 9, Vegetation Resources; Chapter 10, Wildlife Resources; and Chapter 11, Aquatic Biological Resources, of this document. The Authority would use this information regarding occupied habitat to fulfill the permitting and consultation requirements of the federal and state resource agencies (USFWS, CDFW, U.S. Army Corps of Engineers, Central Valley Regional Water Quality Control Board, and State Water Board). RDEIR/SDEIS at 2-48. However, deferring this important analysis until after the NEPA and CEQA process fails to	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which discusses the biological surveys that will be conducted prior to the start of construction.

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	comport with the foundational informational purposes of those laws and deprives the public of a meaningful opportunity to understand the project's impacts and provide input. See City of Agoura Hills, 46 Cal.App.5th at 692-94. For example, the public cannot understand how the project will impact vernal pools and the wildlife they support and cannot suggest alternatives to reduce any impacts because the RDEIR/SDEIS fails to provide accurate information about the location of vernal pools in the project area.	
66-99	Second, the RDEIR/SDEIS suggests the lack of accurate and detailed information about impacts to vegetation, wetlands, and wildlife is not a problem because the RDEIR/SDEIS overestimates the project's impacts. For example, with respect to special status species, the RDEIR/SDEIS claims that, [i]n general, permanent and temporary impacts on potential habitat for specialstatus species are overestimated because surveys to assess habitat suitability of land cover types could not be conducted in the study area due to access limitations. Consequently, the entirety of the land cover is considered affected even when specific habitat requirements may be absent (e.g., elderberry shrubs, which are host plants for valley elderberry longhorn beetle, in riparian land cover types). RDEIR/SDEIS at 10-29. Yet providing only an unrealistic overestimate of the project's impacts that is disconnected from reality fails to provide members of the public and decision makers with an accurate understanding of the project and leaves them unable to meaningfully assess alternatives that could reduce the project's impacts in violation of CEQA and NEPA.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of species habitat models as the basis for the impact analysis. The difference in accuracy between the impacts derived from the land cover mapping and species models in the RDEIR/SDEIS analysis, as well as the expected refinements based on field surveys, are not of large enough magnitude to change the final impact acreages and subsequent mitigation requirements to a degree that the public and decision makers cannot meaningfully assess the Project Alternatives.
66-100	(ii) The RDEIR/SDEIS Fails to Adequately Analyze Impacts to Wetlands and Terrestrial Wildlife Because Key Information and Analysis is Missing The coarse and inaccurate description of the environmental setting and cursory impacts analysis makes it difficult to meaningfully comment on specific information gaps and flaws in the analysis. Nevertheless, it is clear that the impacts analysis suffers from several additional deficiencies.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of the methods to establish the baseline conditions for wetlands and wildlife. As noted in Chapter 10, Wildlife Resources, the study area is near the Sacramento National Wildlife Refuge (NWR); however, the Delevan Pipeline is not part of the Project (see Chapter 2, Project Description and Alternatives). Because the Project is west of Interstate 5 and several miles from the

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	First, the RDEIR/SDEIS fails to analyze impacts to wildlife that utilize Sacramento Valley wildlife refuges and private lands surrounding the refuges that are enrolled in U.S. Fish and Wildlife Service ("FWS") and Natural Resources Conservation Services ("NRCS") easement programs. The project area is in close proximity to units of the Sacramento National Wildlife Refuge Complex that are essential for migratory birds and other wildlife, including threatened and endangered species. Project construction and operation could impact wildlife that rely on the refuges, including impacts related to construction-related noise and traffic and addition of transmission lines that could impact migratory pathways. Yet the RDEIR/SDEIS does not appear to discuss how the project will impact wildlife that exist within and migrate to and from the refuges. Additionally, as we mentioned in our comments on the 2017 DEIR/DEIS for the project, there are USFWS and NRCS conservation easement lands in and surrounding the project area that are important for migratory birds and other wildlife. Yet the RDEIR/SDEIS fails to identify these easement lands and does not discuss how the wildlife that depend on these important habitats will be impacted by project construction and operation.	NWR, construction and operation of the Project would not affect wildlife that depend on the NWR. Please also see the Introduction in Chapter 10 for a description of the study area. Potential impacts of the Project on wildlife movement, including migratory birds and migratory wildlife corridors, are discussed in Chapter 10 under Impact WILD-2, which also identifies the presence of numerous waterways and wetlands in the study area. The impact analysis describes the possibility of habitat fragmentation and loss of habitat connectivity within existing habitat blocks that could occur as a result of the Project. This impact was found to be significant and unavoidable, and no mitigation is available to address this impact.
66-101	The RDEIR/SDEIS's discussion of impacts to particular species is exceedingly cursory and lacking in detail. For example, giant garter snakes are listed under both CESA and the ESA, and they are known to occur in several parts of the project area. Yet for construction impacts from Alternatives 1 and 3, the RDEIR/SDEIS dedicates only one exceedingly brief paragraph to giant garter snake impacts. RDEIR/SDEIS at 10-79. The description is vague and fails to provide basic information about where, when, and how the impacts are expected to occur. Without this basic information, it is not possible to understand the nature and extent of the project's impact, or to suggest alternative approaches that could reduce those impacts. The RDEIR/SDEIS also fails to discuss giant garter snake impacts in the context of FWS's 2017 Recovery Plan for the Giant Garter Snake. Parts of the project area fall with	Impacts on special-status species from construction and operation are described in detail in Section 10.4, Impact Analysis and Mitigation Measures, of Chapter 10, Wildlife Resources, for each species that could occur in the study area. The impact discussions describe where modeled habitat for the species is located within the study area, the mechanisms by which the Project impact could occur, and whether the impacts would occur during construction or operation. Acreages of impacts on modeled species habitat are detailed for each species group (see, e.g., Table 10-2a [aquatic invertebrates], Table 10-2b [terrestrial invertebrates], and Table 10-2c [amphibians and reptiles] in Chapter 10, Wildlife Resources). Special-status wildlife impact tables are provided in Appendix 10C, Special-Status Wildlife Impacts Tables.

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	the Colusa Basin Recovery Unit, and the recovery plan describes specific recovery criteria for that unit. See Final GGS Recovery Plan at II-15 to 16. Yet the RDEIR/SDEIS does not describe how the proposed project could impede recovery efforts and does not explain how mitigation for giant garter snake impacts will advance the goals that the final recovery plan establishes. Impacts to other wildlife species are discussed in a similarly cursory manner and are lacking details that are essential for understanding and commenting on the project's impacts.	This information provides the nature and extent of the Project's potential impacts. The USFWS's recovery plan for giant gartersnake provides broad goals and objectives to facilitate recovery of this species: "Recovery plans are guidance and planning documents only. Public or private parties are not legally obligated to implement any actions identified in the plans beyond existing legal requirements" (National Oceanic and Atmospheric Administration Fisheries Office of Protected Resources 2022). Mitigation Measures WILD-1.20 and WILD-1.21 in Chapter 10 describe the actions that would be taken to avoid, minimize, and compensate for potential impacts on giant gartersnake. Please also see Master Response 2, Alternatives Description and Baseline, for information regarding the adequacy of impact analysis under NEPA and CEQA.
66-102	(iii) The RDEIR/SDEIS Fails to Adequately Describe Measures to Completely Avoid Take of Fully Protected Species The RDEIR/SDEIS discusses likely project impacts to several State fully-protected species, including golden eagles and bald eagles. In its comments on the 2017 DEIR/DEIS, CDFW explained that "[t]ake of fully protected species is unlawful and subject to enforcement under the Fish and Game Code. The only way for a project to obtain incidental take authorization for any fully protected species is through the development of a Natural Community Conservation Plan (NCCP) (Fish and G. Code, § 2800 et seq.)." Accordingly, CDFW "recommend[ed] the DEIR/DEIS include a discussion of potential for take of fully protected species, and identify measures to completely avoid take of these species." However, for golden eagles and other fully-protected species, the RDEIR/SDEIS indicates that take may occur, and it fails to describe measures that will completely avoid take. For example, the RDEIR/SDEIS describes the	Mitigation Measure WILD-1.29 includes that the Authority will be preparing an Eagle Conservation Plan in coordination with USFWS and CDFW and obtaining an Eagle Take Permit from USFWS. The risk of take of a fully protected species, such as golden eagle, bald eagle, or white-tailed kite, would be reduced through the implementation of Mitigation Measures WILD-1.22, WILD-1.23, WILD-1.26, WILD-1.27, and WILD-1.28 in Chapter 10, Wildlife Resources. Impact WILD-1l states that white-tailed kite nest destruction and nest abandonment must be avoided due to its fully protected status. Identification of nests of bald eagle, golden eagle, and white-tailed kite through surveys and implementation of no-disturbance buffers would avoid take of these species. Mitigation Measure WILD-1.27 requires the Authority to follow the most current Reducing Avian Collisions with Power Lines: The State of the Art guidelines to ensure that new transmission lines and associated equipment are properly fitted with

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	potential for mortality of golden eagles, bald eagles, and whitetailed kite through electrocution or collision with new transmission lines but does not explain how the proposed mitigation measures would ensure complete avoidance of mortality or other forms of take. See, e.g., RDEIR/SDEIS at 10-95 to 10-97. Take of fully protected species could also occur through use of rodenticides, disturbances of nesting sites, and other means, and the RDEIR/SDEIS does not make clear how these impacts would be fully avoided.	wildlife protective devices to isolate and insulate structures to prevent injury or mortality of birds. Mitigation Measure WILD-1.26 requires that rodenticides be used sparingly and only in areas immediately surrounding Project facilities. The mitigation measures describe all feasible actions that the Authority can take to reduce the risk of take of bald eagle, golden eagle, and white-tailed kite.
66-103	(iv) The RDEIR/SDEIS Fails to Propose Adequate Mitigation Measures for Significant Impacts to Wetlands and Terrestrial Wildlife The RDEIR/SDEIS makes clear that proposed project is likely to have significant, negative impacts on a substantial number of wildlife species, including golden eagles, bald eagles, Western pond turtles, and giant garter snakes, among many others. Because the impacts to these species are potentially significant, the SDEIR/SDEIS must describe feasible mitigation measures that could minimize the significant adverse impacts. CEQA Guidelines § 15126.4(a)(1). Generally, the formulation of mitigation measures may not be deferred until a later time. Id. § 15126.4(a)(1)(B). If an agency chooses to defer formulation of specific measures in a CEQA document, it must "commit itself to specific performance criteria for evaluating the efficacy of the measures implemented." POET, LLC v. California Air Re[s.] Bd., 217 Cal. App. 4th 1214, 737-38 (2013). The mitigation measures described in the RDEIR/SDEIS fail to meet these standards and the document's claims that significant impacts will be mitigated to a less-than-significant level are unsubstantiated.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of the mitigation measures for wildlife, including the development of species-specific mitigation and why mitigation is not deferred.
66-104	The RDEIR/SDEIS impermissibly defers formulation of mitigation measures. This problem is created, at least in part, by the document's failure to accurately describe the environmental setting and its relatedly inadequate analysis of impacts to vegetation, wetlands, and wildlife. In fact, for most wildlife species, the RDEIR/SDEIS includes analysis of the project's impacts	Please see Master Response 6, Vegetation, Wetland, and Wildlife Resources, regarding access and mitigation measures for impacts on vegetation, wetlands, and wildlife resources.

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	as a mitigation measure. See, e.g., Mitigation Measure WILD-1.1, RDEIR/SDEIS at 10-37 ("Once property access is granted and prior to the start of construction, the Authority will retain qualified biologists to assess habitat suitability and conduct surveys for vernal pool branchiopods in the Project area . . . ."). By impermissibly deferring the impacts analysis until the project's mitigation phase, the RDEIR/SDEIS fails to include information about the nature and extent of impacts to vegetation, wetlands, and wildlife, which makes it impossible to describe how impacts will be mitigated with any particularity.	
66-105	Proposed mitigation ratios seem inadequate to reduce the project's impacts to a less-than-significant level. For example, the RDEIR/SDEIS appears to propose a 1:1 mitigation ratio for vernal pools. RDEIR/SDEIS at 9-47. For these rare and ecologically important wetlands, and in light of uncertainties surrounding the efficacy of vernal pool mitigation, this mitigation ratio seems substantially too low. Further, for occupied vernal pool branchiopod habitat, the RDEIR/SDEIS proposes a 2:1 mitigation ratio. RDEIR/SDEIS at 10-38. And "[f]or non-mitigation bank compensation, the performance standard for occupancy of the created/restored pools by listed vernal pool branchiopods is 5% of the total number of created/restored pools supporting listed vernal pool branchiopods over a 10-year monitoring period." RDEIR/SDEIS at 10-39. A 2:1 mitigation ratio for vernal pools occupied by ESA-listed wildlife is too low at the outset, and setting a performance standard for occupancy of restored or created pools at only 5 percent is unreasonable.13 With such a low mitigation ratio and low expectation of success with respect to occupancy, this measure is inadequate to minimize a significant, adverse impacts. The same combination of unacceptably low mitigation ratios and low performance standards emerges for several other species. See, e.g., RDEIR/SDEIS at 10-48 (Mitigation Measure WILD-1.8 includes a mitigation ratio for elderberry longhorn beetle habitat at 3:1 for riparian habitat and 1:1 for non-riparian	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources regarding the mitigation ratios provided in the Final EIR/EIS. As mentioned in Master Response 6, the mitigation ratios are minimum ratios that will be implemented at an equivalent or greater requirement as determined by the appropriate regulatory agency during the permitting process.

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	habitat, and establishes a performance standard of 60 percent survival over a five-year period for initial elderberry and native associate plantings).	
66-106	Mitigation Measure WILD-1.3 is confusing. It states that "[d]irect and indirect effects on occupied habitat will be mitigated by preserving occupied habitat at a 2:1 ratio (habitat preserved : habitat directly or indirectly affected) or by an equivalent or greater amount as determined during ESA Section 7 consultation with USFWS. In addition, direct effects on occupied habitat will be mitigated by creating or preserving occupied habitat at a 1:1 ratio (habitat created : habitat directly affected) or by an equivalent or greater amount as determined during ESA Section 7 consultation with USFWS." RDEIR/SDEIS at 10-38. Does this mean that, for direct effects on occupied habitat, the mitigation ratio is actually 3:1, with an opportunity for one acre of mitigation to occur through creation of occupied habitat?	The mitigation for direct effects on occupied vernal pool branchiopod habitat could be viewed as a 3:1 ratio, where habitat would be preserved at a 2:1 ratio and created at a 1:1 ratio. Additionally, occupied habitat that is indirectly affected would be preserved at a 2:1 ratio.
66-107	Some mitigation measures are so vague that it is unclear whether the protective measures will actually be implemented. For example, for giant garter snakes, the RDEIR/SDEIS states that, [w]hen possible, all construction activity in suitable giant gartersnake aquatic habitat, and upland habitat within 200 feet of suitable aquatic habitat, will be conducted during the snake's active period (between May 1 and October 1). For work that cannot be conducted between May 1 and October 1, additional protective measures, such as installing exclusion fencing or additional biological monitoring, or other measures determined during consultation with USFWS andCDFW, will be implemented. RDEIR/SDEIS at 10-80. What does "when possible" mean? Must construction occur during the active season so long as it is physically possible? Or can construction occur outside of the snake's active period to avoid additional costs or inconvenience, which would be problematic? For work that must occur during the snake's inactive season, a few examples of possible protective measures are mentioned, but formulation of a plan for	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of the mitigation measures for wildlife. With respect to the commenter's question regarding Mitigation Measure WILD-1.20, sometimes due to the sequence in which construction activities must occur, or because work must be completed before the beginning of the wet season, work must occur outside of the snake's active period. In these instances, additional protective measures would be implemented to ensure that giant gartersnakes are protected. The additional protective measures listed (e.g., installing exclusion fencing or additional biological monitoring) as well as the measures developed in consultation with USFWS and CDFW are measures that will be implemented during construction during the snake's active period, and this approach does not constitute deferring the formulation of mitigation measures.

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	minimizing impacts to this threatened species is improperly deferred until a later date.	
66-108	(78) (I) The RDEIR/SDEIS Fails to Accurately Analyze Cumulative Impacts and Fails to Disclose that the Project Will Cause Cumulatively Significant Impacts The RDEIR/SDEIS fails to acknowledge that the impacts of the proposed project and alternatives are cumulatively significant. The RDEIR/SDEIS admits that despite requirements of the ESA and CESA, "the cumulative impact of past modifications and other past and present projects has contributed to the continuing decline in Central Valley and Delta fish populations and their habitats." RDEIR/SDEIS at 31-34. However, the RDEIR/SDEIS fails to conclude that "[t]his overall cumulative impact is significant," unlike DWR's final CEQA document for long term operations of the State Water Project which included the same sentence. See DWR, Final EIR, at 4-318 ("Despite these protections, the cumulative impact of past Delta modifications and other past and present projects has contributed to the continuing decline in Delta fish populations and habitat of protected species. This overall cumulative impact is significant."). Here, the RDEIR/SDEIS asserts that the proposed alternatives 1 and 3 "would not result in an incremental contribution to impacts on aquatic biological resources in the Sacramento River, its major tributaries and flood bypasses, and the Delta," id. At 3-36, because the proposed project and alternatives would only cause small changes less than 2 percent, see id. At 3-38. However, as shown above the proposed project and alternatives, even with the proposed mitigation measures, would cause significant impacts, and these impacts would cumulatively also be significant. Moreover, give the dire status of native fish populations, particularly Delta Smelt, winter-run Chinook salmon, Longfin Smelt, and other species listed under CESA and/or the ESA, the proposed project's contribution to cumulative impacts are likely to be significant.	The RDEIR/SDEIS analyzed the Project's potential contribution to cumulative impacts related to aquatic biological resources. Please refer to Chapter 31, Cumulative Impacts, Section 31.3.6, Aquatic Biological Resources, for a full discussion of the Project's potential contribution to aquatic biological resources cumulative impacts. In the comment, the commenter cites to the Final EIR for Long-Term Operations of the State Water Project. To clarify, the SWP Final EIR found that "the Proposed Project's contribution to cumulative impacts would not be cumulatively considerable" in relation to aquatic biological resources (California Department of Water Resources 2020a:4-325). The text from the Final EIR quoted by the commenter is stating that the impacts of past Delta modifications and other past and present projects have contributed to a cumulatively considerable impact on aquatic species and that this condition is part of the baseline for the project. The Project baseline includes the impact of past and ongoing projects. Please see Master Response 5, Aquatic Biological Resources, for more information regarding the baseline conditions of fishery resources, including special-status species and the comparison of the conditions under the alternatives to baseline conditions. The commenter mischaracterizes the text from the RDEIR/SDEIS. The quoted text from the RDEIR/SDEIS states that changes for salmonid redd dewatering between the No Project Alternative and Alternatives 1 and 3 are less than 2%. The quoted text is not used as an argument to support a finding regarding cumulative impacts.

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		The commenter also indicates that "the proposed project, even with the proposed mitigation measures, would cause significant impacts, and these impacts would cumulatively also be significant." However, as described in Chapter 11, Aquatic Biological Resources, and Chapter 31, the RDEIR/SDEIS does not identify any aquatic biological resources impacts that would be significant and unavoidable. All potential aquatic biological resources impacts are either less than significant or reduced to a less-than-significant level through mitigation.
66-109	State and federal agencies have identified the need to significantly increase Delta outflow in the winter and spring months to prevent the extinction of Longfin Smelt, Delta Smelt, and other species (see, e.g., the State Water Board's 2010 Public Trust flows report, the State Water Board's 2018 Framework), but the proposed project and alternatives would reduce Delta outflow in the winter and spring months. Even assuming for the sake of argument that these reductions in Delta outflow would not cause significant impacts from the proposed project by itself, the reduction in Delta outflow during these months would be cumulatively significant and the proposed project would make a considerable contribution to the reduction in Delta outflow. See, e.g., RDEIR/SDEIS at Table 5B3-5-1a to Table 5B3-5-1c (showing that Alternative 1A would reduce Delta outflow in March of Above Normal years by more than 5 percent, from 23,170 cfs to 21,860 cfs). The RDEIR/SDEIS must be revised to adequately address the cumulative impacts of the proposed project and alternatives.	As described in Chapter 5, Surface Water Resources, although small percentage reductions in Delta outflow would occur during the wetter (winter and spring) months, increases in Delta outflow would occur during drier months, particularly during Critically Dry Water Years (refer to Table 5-27 in Chapter 5). The impacts of these changed outflows were analyzed in the context of the potential effects on resources, with mitigation proposed as found to be necessary for significant impacts (e.g., for longfin smelt; see Impact FISH-9 in Chapter 11, Aquatic Biological Resources), and these potential impacts were taken into account in the cumulative impact analysis in Chapter 31, Cumulative Impacts. See also Master Response 5, Aquatic Biological Resources, with respect to issues raised regarding longfin smelt. Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for a discussion of the Project's relationship to other water management plans, programs, policies, and agencies, including the State Water Board's Bay-Delta Plan (State Water Resources Control Board 2006, 2018).
66-110	VII. Recirculation of a Revised EIS/EIR is Required	Please see responses to comments 66-1 through 66-109 for responses to comments regarding the above-described information

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	Because of the above-described deficiencies and because the RDEIR/SDEIS fails to disclose that the project and alternatives will cause significant environmental impacts and that the proposed mitigation measures are inadequate to reduce impacts to a less than significant level, recirculation of a revised RDEIR/SDEIS is legally required. See, e.g., Vineyard Area Citizens for Responsible Growth, Inc. v. City of R[an]cho Cordova, 40 Cal.4th 412, 447-449 (2007).	by the commenter. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding requirements for recirculation and disclosure of significant impacts. Please see Master Response 2, Alternatives Description and Baseline, regarding use and incorporation of mitigation measures.
66-111	VIII. Conclusion The RDEIR/SDEIS clearly fails to comply with the requirements of CEQA and NEPA. Among other flaws, it fails to consider a reasonable range of alternatives, fails to articulate a stable and accurate project description, fails to adequately account for climate change, fails to adequately analyze impacts to wide range of aquatic and terrestrial species, and fails to propose mitigation to reduce significant impacts to a less-than-significant level. For these reasons and because the RDEIR/SDEIS is riddled with significant errors, inadequacies, and omissions, the agencies must make substantial revisions to the document and recirculate the revised document for public review and comment.	Please see response to comment 66-2 regarding the reasonable range of alternatives, the adequacy of the project description, climate change, impacts on aquatic and terrestrial species, and mitigation measures. Master Response 2, Alternatives Description and Baseline, also addresses comments related to the range of alternatives and project description. Master Response 6, Vegetation, Wetland, and Wildlife Resources, and Master Response 5, Aquatic Biological Resources, address comments related to the approach to the analysis for biological resources.
66-112	[Attachment 1: Powerpoint from Sites Authority - "Sites Reservoir Project, 2021 Water Estimate, May 28, 2021."]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
66-113	CDWR's modeling of the San Francisco Estuary Longfin Smelt population to evaluate new operational plans for the State Water Project and Central Valley Project: Critique By Jonathan Rosenfield, Ph.D., San Francisco Baykeeper, Senior Scientist with modeling assistance from UC Davis Otolith Geochemistry and Fish Ecology Laboratory	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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66-114	Attachment 3: Letter to NMFS from BCDC, dated July 29, 2014.	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
67-1	The insufficiency of the Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement is startling. The RDEIR/SDEIS relies on "out of date" Data on Delta Smelt, does not recognize Conflicts of Interest, is silent on conflicts with State Law (raising of Shasta Dam), ignores the fact that historic snow levels are dropping, includes no information of the current long term California Drought, is silent on climate change, does not mention the fact that California has been selling paper water on an overdrafted water resource system for decades, states Sites would be filled with surplus/excess Sacramento River water when there is no excess or surplus water in the River, offers no solutions to preserve, protect and restore Central Valley salmonid runs currently teetering on extinction, includes no recommendations for fish passage, either conventional or volitional, on dams that have blocked spawning & rearing rivers and streams for listed salmonid species like Shasta, Trinity, Oroville and New Bullards Bar, allows Sites to encroach on habitat for federally protected Golden Eagles, places the Sacramento River and Delta water systems in extended crisis mode and will drive their Coho & Chinook Salmon, steelhead, Sturgeon and Delta Smelt fisheries into extinction and then the RDEIR/SDEIS completely ignores all Tribal rights.	Please see Master Response 2, Alternatives Description and Baseline, regarding the adequacy of the impact analysis, and the assumptions of the environmental baseline. The No Project Alternative/No Action Alternative assumes that the conditions do not materially change from the 2020 environmental baseline except for climate change effects (which are evaluated in Chapter 28, Climate Change, of the Final EIR/EIS) because the existing, ongoing plans and programs that serve as the basis for the environmental baseline would reasonably be anticipated to continue into the future. Please also see Master Response 2 regarding the merits of the Project and alternatives. The Project is a separate project from the raising of Shasta Dam. As described in Chapter 5, Surface Water Resources, and Master Response 3, Hydrology and Hydrologic Modeling, the analysis in the EIR/EIS considers a hydrologic period of 82 years, which includes both wet years and dry (drought) years. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the water rights process. The hydrologic modeling results assume existing or near-term future infrastructure, regulations, and demands. However, the use of 1922-2003 historical hydrology as input to CALSIM allows the impact assessment to capture future long-term variation in environmental effects. Effects, including hydrologic effects associated with reduced snowpack and drought, due to climate change are considered in Chapter 28, Climate Change.

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		Master Response 5, Aquatic Biological Resources, discusses the data used to evaluate impacts on delta smelt, methods of analysis, and the proposed mitigation measures for delta smelt. Master Response 5 also discusses other special-status fish species and CEQA and NEPA requirements, and the methods and uses of modeled results to analyze impacts on salmonids including redd dewatering, juvenile stranding, redd scour, and low-flow passage. The Project does not include activities related to existing dams or their potential effects on spawning and rearing in waterbodies like Shasta, Trinity, Oroville, or New Bullards Bar. Chapter 10, Wildlife Resources, evaluates potential effects on golden eagle in Impact WILD-1k. The EIR/EIS addresses tribal issues from multiple perspectives, including the cultural resource (e.g., archaeological and buried human remains) perspective in Chapter 22, Cultural Resources; tribal cultural resources in Chapter 23, Tribal Cultural Resources; and Indian Trust Assets in Chapter 29, Indian Trust Assets.
67-2	Sites threatens the wild and scenic Eel and Black Butte Rivers: According to California water supply history as reported by Friends of the Eel River: "Three months after California voters approved the State Water Project, in 1961, Department of Water Resources planners wrote a blueprint for the state's water future called State Water Bulletin 76. The bulletin envisioned capturing the middle fork Eel River's water and shunting it through more than 30 miles of ditches and tunnels to the proposed Paskenta-Newville Reservoir in Glenn County. Construction of the latter reservoir was a crucial engineering component of the plan to divert the Eel into the Sacramento, then onto the California Aqueduct."	As described in Chapter 2, Project Description and Alternatives, the Project would divert water from the Sacramento River at the Red Bluff Pumping Plant and the GCID Main Canal at Hamilton City. The Project would not divert water from the Eel River, nor does the Project bear any relationship to the previously proposed Paskenta-Newville Reservoir. Please see Appendix 2A, Alternatives Screening and Evaluation, for a discussion of the evaluation of the Paskenta and Newville Reservoirs. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for more information on general methods and modeling. The RDEIR/SDEIS and Final EIR/EIS meet the requirements for CEQA and NEPA and are credible because the information is based on reasonable assumptions and appropriate, widely accepted modeling tools.

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	The location of the proposed Sites Reservoir and lack of water to fill it will put pressure on reviving the Dam on the Eel River at Dos Rios that will flood Round Valley and Tribal grounds and require the construction of the tunnel originally proposed to move water from two wild and scenic rivers, the Eel and Black Butte, to now Sites which is only 17 miles southeast of the previously proposed Paskenta-Newville Project that was to feed the Sacramento River and then on to the California State Water Project. It is clear that Sites Reservoir is the reincarnation of the Paskenta-Newville Reservoir Project.	Please see Master Response 3, Hydrology and Hydrologic Modeling, for information on the modeling used in the RDEIR/SDEIS analyses related to analysis of the water to fill the Sites Reservoir.
67-3	From UC Davis: "Despite the rain and snow that closed out 2021, California could be entering a third drought year as weeks of dry weather open the new year. The State has experienced drought in 15 of the last 20 years, according to UC Davis. Experts say California is in the grip of a "megadrought." "It looks like, with a warming climate and climate change, it's going to become more like this," said Jay Lund, professor of civil and environmental engineering at UC Davis and director of the Center for Watershed Sciences. ..." According to a study from the University of California, Davis, "appropriative water rights filed for consumptive uses are approximately five times greater than estimated surface water withdrawals." What this restrained academic language reveals is a management crisis: no matter how much it rains and snows in California, we will always have a chronic water shortage because of over-allocation. Why is this happening? As the UC Davis study [https://watershed.ucdavis.edu/files/biblio/WaterRights_UCDavis_study.pdf] found, the state has promised five times more water than could be delivered. Accelerating climate change only compounds the problem: Virtually all reputable computer models confirm California will receive less snow in coming decades, meaning our water deficit will only grow.	Please see Master Response 2, Alternatives Description and Baseline, regarding merits of the Project. Master Response 2 discusses consumptive uses and water rights on the Sacramento River, and the Project's relationship with other plans, programs, policies, and agencies. Please also see Master Response 3, Hydrology and Hydrologic Modeling, for a discussion of how the Project modeled the No Project Alternative/No Action Alternative and alternatives including climate change.

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67-4	Sites Reservoir, if ever constructed, will reduce flows in the Sacramento River and Delta, drown nearly 14,000 acres of existing oak woodlands, grasslands, wetlands, and agricultural land in the western Sacramento Valley.	The Authority and Reclamation have disclosed impacts and the potential Project effects on flow, vegetation, wetlands, and agriculture, which are evaluated respectively in Chapter 5, Surface Water Resources; Chapter 7, Fluvial Geomorphology; Chapter 9, Vegetation and Wetland Resources; and Chapter 15, Agriculture and Forestry Resources. See also Master Response 6, which addresses the impact of the Project on various plant habitats and natural communities.
67-5	Impacts associated with the reservoir footprint would harm the federally protected golden eagle, a host of other sensitive wildlife species, several rare plants and significant historical and cultural Tribal resources.	The Authority and Reclamation have disclosed impacts and the potential Project effects on golden eagles, wildlife species, rare plants, cultural resources, and tribal cultural resources are addressed respectively in Chapter 10, Wildlife Resources; Chapter 9, Vegetation and Wetland Resources; Chapter 22, Cultural Resources; and Chapter 23, Tribal Cultural Resources.
67-6	One example of out of date Data and a Conflict of Interest: According to the RDEIR/SDEIS, Attachment 6A-2 Excerpts from "Water Supply Impact Analysis of December 2008 Delta Smelt Biological Opinion," by Paul Hutton, Metropolitan Water District of Southern California, February 2009". Using 13+ year old Data for the Delta Smelt Biological Opinion and having it written by an agency, the MET, that will benefit from the Sites says it all.	Appendix 6A, Water Quality Constituents and Beneficial Uses, of the RDEIR/SDEIS does not contain an Attachment 6A-2 or an Appendix 6A-2. It is likely this comment is referring to the 2017 Draft EIR/EIS. The current document does not reference Hutton 2009. As described in the Volume 3, Chapter 1, Introduction and Approach to Responses to Comments, Approach section, the RDEIR/SDEIS completely revised the environmental analysis pursuant to CEQA and NEPA to reflect changes to the Project that have occurred since the issuance of the 2017 Draft EIR/EIS. Pursuant to CEQA and given the full recirculation of the EIR, the Authority is not responding to individual and unique comments on the 2017 Draft EIR. Reclamation responses to comments on the 2017 Draft EIS can be found in Volume 3, Appendix 4A, Reclamation Responses to 2017 Draft EIS Comments. Please see Chapter 11, Aquatic Biological Resources, including Impact FISH-8, for the updated discussion of the Project impacts on delta smelt (Hypomesus transpacificus).

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67-7	The RDEIR/SDEIS makes the case for raising Shasta Dam 18 & ½ feet even though it is in direct conflict with California State Law, and, water temperature-related impacts are now year round, not just July through November: "Ecosystem Enhancement Storage Account (EESA) Actions/Operation EESA-1: Shasta Coldwater Pool (All alternatives) Improve the reliability of cold-water pool storage in Shasta Lake to increase operational flexibility to provide suitable water temperatures in the Sacramento River. This action would operationally translate into the increase of Shasta Lake May storage levels, and improved retention of cold-water pool storage, with particular emphasis on Below Normal, Dry, and Critical water year types. DP-1 BN, D, C + ++ ++ ++ ++ EESA-2: Sacramento River Flows for Temperature Control (All alternatives) Provide releases from Shasta Dam of appropriate water temperatures, and subsequently from Keswick Dam, to improve water temperatures year-round at levels suitable for all species and life stages of anadromous salmonids in the Sacramento River between Keswick Dam and Red Bluff Pumping Plant, with particular emphasis on the months of highest potential water temperature-related impacts (i.e., July through November) during Below Normal, Dry, and Critical water year types".	The quote provided by the commenter to support their claim that the document makes a case for raising Shasta Dam is from the 2017 Draft EIR/EIS. There is no longer an Ecosystem Enhancement Storage Account that would include raising Shasta Dam in the current document. Please see response to comment 67-6 regarding the 2017 Draft EIR/EIS being recirculated by the RDEIR/SDEIS and the Final EIR/EIS wholly replacing the 2017 Draft EIR/EIS. Please see the Master Response 5, Aquatic Biological Resources, section titled Project Benefits to Fisheries and Chapter 11, Aquatic Biological Resources, regarding the Project's benefits to anadromous fish by improving cold-water pool management in Shasta Lake.
67-8	The RDEIR/SDEIS continues to make the out of date and incorrect claims regarding excess water in the Sacramento River, there is none. "The proposed Sites Reservoir would be filled through the diversion of excess Sacramento River water that originates from unregulated tributaries to the Sacramento River downstream from Keswick Dam. These unregulated tributaries contribute over 3 MAF of flow to the Sacramento River on an average annual basis. Therefore, less than 1 percent of diversions to Sites Reservoir are assumed to be provided by flood releases or spills that flow through Lake Shasta. Sacramento River water would be diverted at the existing Hamilton City and Red Bluff diversion locations, as well as via a new	The quoted text is not from the RDEIR/SDEIS but rather the 2017 Draft EIR/EIS. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding comments submitted on the 2017 Draft EIR/EIS. Please also see Master Response 2, Alternatives Description and Baseline, regarding merits of the Project and alternatives, including diversions from the Sacramento River watershed. See Master Response 3, Hydrology and Hydrologic Modeling, regarding the water use and diversions represented in the baseline conditions, which reflect current water supplies provided by the Sacramento River watershed, including the

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	Delevan intake and pipeline for Alternative A. Excess flows are defined as river flows, in addition to those required to meet the following: • Senior downstream water rights, existing CVP and SWP and other water rights diversions including SWP Article 21 (interruptible supply), and other more senior excess flow priorities (diversions associated with Freeport Regional Water Project and existing Los Vaqueros Reservoir) • Existing regulatory requirements including State Water Resources Control Board D-1641, CVPIA 3406(b)(2), the 2008 USFWS BO, and the 2009 NMFS BO and other instream flow requirements • Flow conditions needed to maintain and protect anadromous fish survival and Delta water quality Sites Reservoir Diversion Bypass Requirements Excess Sacramento River flow diversions to Sites Reservoir would only take place when flow at critical locations along the river is higher than the bypass flow requirements. Several existing and additional proposed bypass flow criteria were assumed at specified locations, as part of the Project. These flow criteria are designed to make certain only excess water would be diverted into Sites Reservoir to maintain and protect existing downstream water uses. Excess Sacramento River flow diversions to Sites Reservoir would only take place when flow monitoring indicates that bypass flows are present in the river due to storm event flows. Several existing and additional proposed bypass flow criteria were assumed at specified locations."	Mass Balance in the Sacramento River Basin section for a discussion of Red Bluff, Hamilton City, and bypasses.
67-9	The RDEIR/SDEIS then identifies the significant and unavoidable impacts which alone should terminate consideration of Sites: ES.5.1 Identified Significant and Unavoidable Impacts As shown in Table ES-2, the proposed Project action alternatives would likely result in the following potentially significant and unavoidable direct and indirect impacts. ES.5.1.1 Terrestrial Biological Resources (Golden Eagle) Construction and	There is no Section ES.5.1 or ES.5.1.1 in the Executive Summary of the RDEIR/SDEIS released in November 2021. The commenter is referring to content in the executive summary of the 2017 Draft EIR/EIS. Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the 2017 Draft EIR/EIS. Please also refer to Master Response 1 for information regarding the discretionary role of the Authority and Reclamation to approve the Project, the determination of significant and unavoidable impacts, and the role of the Authority and Reclamation in developing

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	filling of the proposed Sites Reservoir Inundation Area, as well as construction of the proposed Recreation Areas, would result in the permanent loss of foraging and nesting habitat for the golden eagle. Although implementation of compensatory mitigation including land preservation and/or acquisition is proposed, these measures would not reduce this loss of habitat to less-than-significant levels.	findings and a statement of overriding considerations regarding significant and unavoidable impacts under CEQA. Chapter 3, Environmental Analysis, discusses the standards for impact analyses under NEPA and CEQA. Chapter 10, Wildlife Resources, of the RDEIR/SDEIS identifies when applicable and feasible mitigation measures reduce impacts on terrestrial biological resources to less-than-significant levels or explains when impacts remain significant and are unavoidable, as is the case for golden eagle.
67-10	The RDEIR/SDEIS then identifies the significant and unavoidable impacts which alone should terminate consideration of Sites: ES.5.1 Identified Significant and Unavoidable Impacts As shown in Table ES-2, the proposed Project action alternatives would likely result in the following potentially significant and unavoidable direct and indirect impacts. ES.5.1.2 Paleontological Resources Construction of the proposed Project facilities could affect paleontological resources. Mitigation measures would reduce the impacts, but not to a less-than-significant level if such resources are encountered during construction.	There is no Section ES.5.1 or ES.1.2 in the Executive Summary of the RDEIR/SDEIS released in November 2021. The commenter is referring to content in the executive summary of the 2017 Draft EIR/EIS. There is no Section ES.5.1 or ES.1.2 in the Executive Summary of the RDEIR/SDEIS released in November 2021. The commenter is referring to content in the executive summary of the 2017 Draft EIR/EIS. Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the 2017 Draft EIR/EIS. Please also refer to Master Response 1 for information regarding the discretionary role of the Authority and Reclamation to approve the Project, the determination of significant and unavoidable impacts, and the role of the Authority and Reclamation in developing findings and a statement of overriding considerations regarding the significant and unavoidable impacts. Chapter 12, Geology and Soils, of the RDEIR/SDEIS identifies applicable and feasible mitigation measures to reduce impacts on paleontological resources of Alternative 1 or 3 to less-than-significant levels and identifies impacts that would remain significant and would be unavoidable under Alternative 2.
67-11	The RDEIR/SDEIS then identifies the significant and unavoidable impacts which alone should terminate consideration of Sites:	The commenter, by reference to a Section ES.5.1.3, appears to be referring to the 2017 Draft EIR/EIS, as there is no Section ES.5.1 in the

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	ES.5.1 Identified Significant and Unavoidable Impacts As shown in Table ES-2, the proposed Project action alternatives would likely result in the following potentially significant and unavoidable direct and indirect impacts. ES.5.1.3 Cultural Resources (Historical and Tribal Resources, Human Remains) Construction of the proposed Project facilities would affect built historical and tribal resources, as well as human remains associated with a designated cemetery and adjacent areas. If these resources and/or areas are determined to be eligible for listing in the California Register of Historical Resources or National Register of Historic Places, mitigation measures would not reduce the impact to less-than-significant levels.	Executive Summary of the RDEIR/SDEIS released in November 2021. Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, which explains that given full recirculation of the 2017 Draft EIR/EIS, the Authority is not responding to comments on the earlier CEQA document. Reclamation responses to comments on the 2017 Draft EIS can be found in Volume 3, Appendix 4A, Reclamation Responses to 2017 Draft EIS Comments. Nevertheless, the commenter is referred to Chapter 22, Cultural Resources, of the RDEIR/SDEIS, which identifies potential impacts on cultural resources from implementation of the Project and the alternatives, identifies applicable and feasible mitigation measures to reduce impacts, and explains that the impacts would remain significant and unavoidable even after mitigation. The Authority has the authority under CEQA to approve the Project even if there are significant and unavoidable impacts, if it adopts a statement of overriding considerations that finds that the benefits of the Project outweigh its significant environmental impacts. The Authority and Reclamation will make the decision on whether and, if so, how to approve the Project upon certification of the Final EIR, and the Authority and Reclamation will make any required findings (including any statement of overriding considerations) at that time. With respect to NEPA, the analysis in Chapter 22 satisfies Reclamation's obligation to evaluate impacts on cultural resources and to identify, discuss, and consider appropriate mitigation.
67-12	The RDEIR/SDEIS then identifies the significant and unavoidable impacts which alone should terminate consideration of Sites: ES.5.1 Identified Significant and Unavoidable Impacts As shown in Table ES-2, the proposed Project action alternatives would likely result in the	There is no Section ES.5.1 or ES.1.4 in the Executive Summary of the RDEIR/SDEIS released in November 2021. The commenter is assumed to be referring to content in the executive summary of the 2017 Draft EIR/EIS. Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the

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	following potentially significant and unavoidable direct and indirect impacts. ES.5.1.4 Land Use (Community of Sites and Existing Land Uses) Construction and filling of the proposed Sites Reservoir Inundation Area would result in the physical division and loss of the community of Sites, resulting in a significant and unavoidable impact. Construction of the proposed Project facilities would result in conversion of Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agricultural use, resulting in significant and unavoidable impacts. Implementation of mitigation measures would not reduce these impacts to less-than significant levels.	2017 Draft EIR/EIS. Please also refer to Master Response 1 for information regarding the discretionary role of the Authority and Reclamation to approve the Project, the determination of significant and unavoidable impacts, and the role of the Authority and Reclamation in developing findings and a statement of overriding considerations regarding the significant and unavoidable impacts. Land use impacts and agricultural resource impacts are discussed in two separate chapters in the RDEIR/SDEIS released in 2021: Chapter 14, Land Use and Chapter 15, Agriculture and Forestry.
67-13	The RDEIR/SDEIS then identifies the significant and unavoidable impacts which alone should terminate consideration of Sites: ES.5.1 Identified Significant and Unavoidable Impacts As shown in Table ES-2, the proposed Project action alternatives would likely result in the following potentially significant and unavoidable direct and indirect impacts. ES.5.1.5 Air Quality (PM10, ROG, and NOx) Construction activities associated with all proposed Primary Study Area Project facilities, as well as activities (such as use of roads, recreation, electricity generation and consumption, and sediment dredging) associated with the long-term operation and maintenance of the Project, would result in significant and unavoidable emissions of particulate matter less than 10 microns in diameter (PM10), reactive organic gas (RoG), and nitrogen oxide (NOx).	There is no Section ES.5.1 or ES.5.1.5 in the Executive Summary of the RDEIR/SDEIS released in November 2021. The commenter is referring to content in the executive summary of the 2017 Draft EIR/EIS. Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the 2017 Draft EIR/EIS. Please also refer to Master Response 1 for information regarding the discretionary role of the Authority and Reclamation to approve the Project and the role of the Authority and Reclamation in developing findings and a statement of overriding considerations regarding the significant and unavoidable impacts. Chapter 20, Air Quality, evaluates particulates 10 microns in diameter or less (PM10), reactive organic gas (ROG), and nitrogen oxides (NOx) during construction for Alternatives 1, 2, or 3 described in the RDEIR/SDEIS. This chapter identifies applicable and feasible mitigation measures to reduce impacts on air quality associated with emissions to less-than-significant levels and explains that certain impacts would remain significant and unavoidable even after mitigation.

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67-14	The RDEIR/SDEIS then identifies the significant and unavoidable impacts which alone should terminate consideration of Sites: ES.5.1 Identified Significant and Unavoidable Impacts As shown in Table ES-2, the proposed Project action alternatives would likely result in the following potentially significant and unavoidable direct and indirect impacts. ES.5.1.6 Climate Change and Greenhouse Gas Emissions The greenhouse gas (GHG) emissions estimated for construction, operation, and maintenance of the Project when compared to applicable county standards would contribute to a cumulatively considerable effect that would be significant and unavoidable.	There is no Section ES.5.1 or ES.5.1.6 in the Executive Summary of the RDEIR/SDEIS released in November 2021. The commenter is referring to content in the executive summary of the 2017 Draft EIR/EIS. Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the 2017 Draft EIR/EIS. Please also refer to Master Response 1 for information regarding the role of the Authority and Reclamation in deciding whether to approve the Project, the determination of significant and unavoidable impacts, and developing findings and a statement of overriding considerations regarding significant and unavoidable impacts if the Authority and Reclamation decide to approve the Project notwithstanding its significant impacts. Chapters 21, Greenhouse Gas Emissions, and 28, Climate Change, discuss GHGs and climate change, respectively.
67-15	The RDEIR/SDEIS then identifies the significant and unavoidable impacts which alone should terminate consideration of Sites: ES.5.1 Identified Significant and Unavoidable Impacts As shown in Table ES-2, the proposed Project action alternatives would likely result in the following potentially significant and unavoidable direct and indirect impacts. ES.5.2 is beyond common sense. ES.5.2 Growth-inducing Impacts: Implementation of the Project would improve water supply reliability for agricultural, urban, and environmental uses; provide more options for water management; increase recreational opportunities; and increase temporary and permanent employment opportunities. Although it is not anticipated that the water made available from the Project would result in a direct increase in population or employment, the potential exists for the quantity of water made available by the Project to result in secondary effects of	There is no Section ES.5.1 or ES.5.2 in the Executive Summary of the RDEIR/SDEIS released in November 2021. The commenter is referring to content in the Executive Summary of the 2017 Draft EIR/EIS. Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the 2017 Draft EIR/EIS. Please also refer to Master Response 1 for information regarding the discretionary role of the Authority and Reclamation to approve the Project, the determination of significant and unavoidable impacts, and the role of the Authority and Reclamation in developing findings and a statement of overriding considerations regarding the significant and unavoidable impacts. Chapter 32, Other Required Analyses, of the EIR/EIS discusses growth-inducing impacts in Sections 32.2.1, Introduction; 32.2.2, Construction; and 32.2.3, Operation and Maintenance. This discussion is different

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	growth consistent with local general plans and regional growth projections in an agency's respective service area.	than in Section ES.5.2 cited by the commenter. Chapter 32 identifies that: "Implementation of Alternatives 1, 2, and 3 would not result in growth inducement with respect to temporary Project-related construction job growth...The small amount of water delivered by the Project is not expected to induce changes in agricultural production within the service area(s) that would measurably increase the demand for agricultural labor, inputs, and other related goods and services...Alternatives 1, 2, and 3 are not likely to have a direct or indirect effect on growth given the expected primary use of the water as a substitute for other supplies during Dry and Critically Dry Water Years. Furthermore, Alternatives 1, 2, and 3 are not likely to result in a direct or indirect increase in population or employment because of the absence of a discernable link between water delivery and population growth. Therefore, the Project is not growth-inducing and would not induce secondary growth impacts."
67-16	The RDEIR/SDEIS then identifies the significant and unavoidable impacts which alone should terminate consideration of Sites: ES.5.1 Identified Significant and Unavoidable Impacts As shown in Table ES-2, the proposed Project action alternatives would likely result in the following potentially significant and unavoidable direct and indirect impacts. ES.5.3 Cumulative Impacts Projects considered in the cumulative impacts analysis included other relevant multi-region projects and actions; water supply, water quality, and hydropower projects and actions in the vicinity of the proposed Project facilities and/or potentially affected by CVP and SWP operations; and ecosystem improvement projects and actions in the vicinity of the proposed Project facilities and/or potentially affected by CVP and	The RDEIR/SDEIS released in November 2021 does not contain a Section ES.5.1 or a Section ES.5.3. The commenter is referring to content in the executive summary of the 2017 Draft EIR/EIS. Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, which explains why the Authority is not responding to comments on the 2017 Draft EIR/EIS. Please also refer to Master Response 1 for information regarding the discretionary role of the Authority and Reclamation to approve the Project, the determination of significant and unavoidable impacts, and the role of the Authority and Reclamation in developing findings and a statement of overriding considerations regarding the significant and unavoidable impacts.

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	SWP operations (refer to Chapter 35 Cumulative Impacts for the names and descriptions of each of project considered). Then the RDEIR/SDEIS makes an unbelievable claim: "Implementation of the Project would not result in the cumulatively considerable incremental contribution to an overall significant cumulative adverse effect."	The RDEIR/SDEIS released in November 2021 does not include a Chapter 35, Cumulative Impacts. Chapter 31, Cumulative Impacts, of the RDEIR/SDEIS evaluates cumulative impacts by resource area (e.g., wildlife, aquatic biological resources, transportation) and evaluates incremental contributions to cumulative impacts on each resource to determine the significance of the cumulative impact.
67-17	As a result of the insufficient RDEIR/SDEIS for Sites Reservoir, the Sites Project Authority and Bureau of Reclamation have two choices, 1. to order the withdrawal of the Sites RDEIR/SDEIS because it fails to fully address the harmful impacts on the Sacramento River and the Delta and order a new revision to better address critical issues and re-release for additional public review and comments, or 2., to cut their financial losses and outright reject and abandon the Sites Reservoir Project. The second option is the logical solution.	Please see Master Response 5, Aquatic Biological Resources, for Project benefits to fisheries. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding comments that oppose the Project and requirements for recirculation.
68-1	The Revised Draft Environmental Report/Supplemental Draft Environmental Impact Statements (RDEIR/SDEIS) fail to disclose important and highly adverse environmental impacts to fishery resources. The RDEIR/SDEIS fail to display the magnitude, frequency and duration of hydrological differences between the without-the-project and the with-the-project (alternatives) environmental conditions to allow comprehending fishery impacts. The plotted summaries of the project-occasioned hydrological differences presented obfuscate short-term differences during fish-habitat-critical periods.	Hydrologic model outputs are presented several ways to allow full viewability by the reader. Monthly flow exceedance plots are provided for several locations, which display every modeled data point for all alternatives for the location. Tables showing the probability of exceedance of modeled flows at 10% intervals (10% to 90%) are also provided for each month, alternative, and location. Mean values for each water year type and for the full 82-year CALSIM period of record are also provided by month for each alternative and location. Finally, differences between each alternative and the No Project Alternative in exceedance at a 10% interval, mean value by water year type, and mean of the full simulation period are provided for each month and location. Instead of relying solely on differences in flows between the No Project Alternative and the Project, the EIR/EIS includes a number of biological models and biology-based analyses to assess flow-related effects on fishery resources (e.g., IOS, OBAN, SALMOD, redd

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		dewatering analysis, juvenile stranding analysis, spawning and juvenile rearing habitat availability analyses, emigrating juvenile flow-survival analysis). These models and analyses provide a better assessment of how the various aspects of flow can affect the biology of fish. Please refer to Chapter 11, Aquatic Biological Resources, of the Final EIR/EIS for the full scope of these multiple analyses, results, and impact determinations.
68-2	The two draft documents fail to display tabular data for the no-action baseline and each alternative by years and months. Metrics missing include average monthly reservoir storage (TAF), average monthly Sacramento River flow and estuarine inflow and outflow (CFS), and average monthly river water temperatures. It is essential that this data be presented for appropriate river and estuarine stations. Reservoirs must include Sites, Funks, any new TRR, Shasta, Trinity and Whiskeytown.	Please refer to Master Response 3, Hydrology and Hydrologic Modeling, regarding the presentation of model results. The EIR/EIS provides tabular data for No Project Alternative and Project alternatives in a variety of forms, including by years and months and average monthly results. For example, Appendix 5B2, River Operations, presents tabular data of flow at Sacramento River at Bend Bridge in Tables 5B2-11-1a through 5B2-11-4c, then monthly patterns by water year type in Figures 5B2-11-1 through 5B2-11-6, and exceedance plots in Figures 5B2-11-7 through 5B2-11-18.
68-3	The documents are dishonest statements of the environmental consequences of the project alternatives should one be built and operated. The statements fail in their legislated duty. Both documents should be rejected for correction and re-released for public review as drafts.	Please see Master Response 2, Alternatives Description and Baseline, regarding the adequacy of the impact analysis. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding requirements for recirculation. The comment does not identify the statements characterized as dishonest, nor the specific information that needs to be corrected in the EIR/EIS.
68-4	Current fishery habitat conditions in the Sacramento River from Keswick Dam downstream, in the Sutter and Yolo bypasses, and in the Sacramento-San Joaquin estuary are bleak and worsening. Native, beneficial non-native, estuarine and anadromous fish populations are in drastic decline with extinction probable for some species. While technically there is unappropriated water in the upper Sacramento River, much of the time there is none surplus to environmental needs.	The EIR/EIS describes the current (2020 for the Final EIR/EIS) baseline conditions and status of aquatic resources. Appendix 11P, Riverine Flow-Survival, provides analyses of divertible flows. Master Response 2, Alternatives Description and Baseline, describes the operation of the Project and when diversions would occur, including refinements made to the Wilkins Slough flow criterion in the Final EIR/EIS. Master Response 5, Aquatic Biological Resources, further discusses the analyses of the Project's effects on aquatic resources described in

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		Chapter 11, Aquatic Biological Resources, of the Final EIR/EIS, as compared to the No Project Alternative. Please refer to the Baseline and Special-Status Species section of Master Response 5 for an explanation of why analyses conducted pursuant to CEQA and NEPA may reasonably conclude that impacts are less than significant or not substantially adverse even though fishery habitat conditions or populations may be declining under baseline conditions, as long as the Project does not worsen those conditions.
68-5	Human health and safety water needs are now recognized as having been inadequately protected by water project operations. Many projects have regularly overdelivered and when followed by dry conditions in subsequent years have potentially lost the ability to meet even human health and safety needs. Over-deliveries have definitely resulted in failed ability to meet water quality control plan standards and sustain the survival of some endangered species.	In coordination with Reclamation, the Authority would construct, operate, and maintain an offstream reservoir to capture excess water from major storms and store the water until it is most needed during dry periods. The Project is intended to provide increased water supply and improved reliability of water deliveries. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS.
68-6	Fish are sustained by average as well as short term and some times instantaneous flow and water quality conditions. Mortality from direct and indirect factors depend on conditions, timing and duration. Durations as short as a day (e.g., redd dewatering) and hours (e.g., for lethal water temperatures) are often controlling entire populations of fish. The riverine and estuarine ecosystems are collapsing from what we expect them to be and the services they should provide.	The commenter states that fish mortality depends on timing and duration of conditions. Mortality can depend on several other aspects, including magnitude, frequency, and rate of change of conditions. All of these aspects of conditions vary in space and time and were considered in the analyses used to evaluate construction, operations, and maintenance activities associated with the Project.
68-7	The documents fail to include and evaluate the one alternative that might be reasonable albeit costly. An alternative with a new single-purpose diversion/return canal, pumps, generators and fish screens designed to manage diversion of at least 20,000 cfs is what is needed to yield the volumes of deliverable water matched to a 1 MAF+ Sites Reservoir. The water resources infrequently available for new diversion require a big-gulp capability - at least 5 times greater than what is proposed.	The Authority and Reclamation previously investigated a dedicated intake on the Sacramento River (i.e., alternatives evaluated in the 2017 Draft EIR/EIS, Appendix 2A, Appendix 2B). The Authority and Reclamation determined through engineering and modeling that existing infrastructure (e.g., Red Bluff Pumping Plant (RBPP) and GCID existing fish-screened diversion facilities and the respective existing canals, as well as Colusa Basin Drain) would meet the needs of the

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		Project and reduce environmental effects (Appendix 2B). Please see Master Response 9, Alternatives Development, regarding modifications to operational scenarios, the 2017 Draft EIR/EIS, and the 2019 Value Planning Process. A new diversion on the Sacramento River of at least 20,000 cubic feet per second (cfs), as suggested by the commenter, would be approximately 10 times the diversion capacity of the existing RBPP fish-screened diversion (as noted in the Chapter 2, Project Description and Alternatives, Section 2.5.1.1, Sacramento River Diversion and Conveyance to Regulating Reservoirs, RBPP subsection, two additional 250 cfs, 600 horsepower vertical axial-flow pumps are to be installed into two existing concrete pump bays at the RBPP; the addition of these two pumps would increase the capacity from 2,000 to 2,500 cfs) or the GCID Main Canal at Hamilton City fish-screened diversion (3,000 cfs, Chapter 2, Section 2.5.1.1, subsection GCID Main Canal Diversion and System Upgrades). The new diversion on the Sacramento River described by the commenter would require much larger facilities and footprints than are currently required for the Project (e.g., a large new canal to convey water as proposed by the commenter and large new diversion structure on the Sacramento River). These larger facilities are not needed to operate the Sites Reservoir, as the Authority and Reclamation have shown they can use existing infrastructure to convey water, and larger facilities would not likely reduce potentially significant impacts disclosed in the EIR/EIS. As discussed in Chapter 2, Section 2.2.1, CEQA Requirements, "An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the

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		comparative merits of the alternatives." Thus, a new single-purpose diversion/return canal, pumps, generators, and fish screens designed to manage a diversion of at least 20,000 cfs is not considered within the reasonable range of alternatives.
68-8	If Sites is constructed and operated as proposed the Sacramento River and the Sacramento-San Joaquin Rivers estuary inflow and outflow will be further diminished and aquatic resources further significantly diminished. Meeting a horribly un-protective standard is not a basis for claiming a no-impact assessment.	Please see Master Response 2, Alternatives Description and Baseline, which addresses the refinements made to Project operations, including changes to the Wilkins Slough flow criterion, in the Final EIR/EIS that further restrict diversions. Chapter 11, Aquatic Biological Resources, of the Final EIR/EIS and Master Response 5, Aquatic Biological Resources, describe the thresholds and criteria used in the analyses that support the findings of no significant impact. Please refer to Master Response 5 for a discussion of flow impacts and mitigation measures.
68-9	Reasonable and foreseeable actions with- and without-the-project that will greatly affect project accomplishments are complicated, uncertain, and plagued with the reality of water scarcity. It is reasonable and foreseeable to anticipate intensifying and disruptive climate change, water shortages, intense demand and priority for new supplies to meet human health and safety needs, the failure of voluntary settlement agreements to help bridge the gap to improve protection for instream beneficial uses, and failed groundwater management requiring much increased groundwater recharge via diversion and spreading of high winter flows. Collectively these procedural deficiencies render the documents unacceptably misleading. Poor decisions will result in waste of public money and public trust resources. The Notice of Availability states "The project's purpose is to provide direct and real benefits to instream flows, the Sacramento-San Joaquin Delta ecosystem, and water supply reliability". Nothing about this project and operations are beneficial for fish save for fish which might inhabit Sites	The remaining text of the Notice of Availability further explains the purpose of the Project: "Water that would be stored and released from Sites Reservoir would be used for local, State, and federal water use needs. These include municipal, industrial, and agricultural uses as well as to provide benefits to anadromous fish species in the Sacramento River watershed, wildlife refuges and habitats, and to help supply food for delta smelt in the Yolo Bypass." Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding relationships to other water-related policies, plans, and programs. Please also see Master Response 1 regarding significant and unavoidable impacts. Please refer to Master Response 5, Aquatic Biological Resources, regarding benefits to aquatic biological resources.

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	Reservoir. The Project stated purpose and the project's actual impacts do not match.	
68-10	The RDEIR/SDEIS can only be viewed as a hopeful approach anticipating that "If we build it we will find a way to fill it". Today too many surface water supply projects are regularly meeting their need to capture storage by petitioning and getting approval for temporary urgency changes in order to divert water that is not permissible by their issued permits and licenses. This approach is decimating fishery resources. Future water supply projects shouldn't operate off continual to almost annual temporary urgency change petitions. The reasonable future is that those petitions will eventually be addressed as petitions for long-term change and likely not receive nearly as favorable terms and conditions as in the past.	In coordination with Reclamation, the Authority would construct, operate, and maintain an offstream reservoir to capture excess water from major storms and store the water until it is most needed during dry periods. Please see Master Response 3, Hydrology and Hydrologic Modeling, which describes the modifications to modeling for Shasta Lake operations and the resulting benefits to cold-water pool management, fall flow stability, and spring pulse flow actions that would occur under the Authority's and Reclamation's preferred alternative. Please also refer to Master Response 5, Aquatic Biological Resources, for an overview of Project benefits. Environmental benefits from the Project are achieved through a number of mechanisms, including exchanges and direct releases from Sites Reservoir, either through the Colusa Basin Drain and Yolo Bypass (all three alternatives) or directly into the Sacramento River. Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, addresses relationships to other water-related policies, plans, and programs, as well as the water rights process.
68-11	The only way Sites will collect significant Sacramento River water with the proposed scope of diversion and pumping facilities is for the Shasta and Trinity projects to be re-operated to be drained in the fall and early winter and the water transferred to Sites. This alternative is not proposed nor evaluated in these documents.	Please refer to Master Response 8, Trinity River, which explains that operation of the Project would not affect or result in changes in the operation of the CVP Trinity River Division facilities (including Clear Creek) or result in impacts on the Trinity River. The Project does not require the re-operation of the Trinity River to divert water, nor does the Project require re-operation of Shasta Reservoir to divert water. The Project would divert unregulated and unappropriated flows from the Sacramento River that enter the river below Shasta Reservoir.

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68-12	The State Water Resources Control Board does not pre-determine findings and do not attempt to dissuade parties from submitting applications and petitions if they comply with the administrative process and required fees. However, political, economic, environmental and social realities should inform applicants seeking to appropriate water. Environmental reality is a necessity that is lacking in these documents.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the water rights application process before the State Water Resources Control Board (State Water Board). Please see Master Response 2, Alternatives Description and Baseline, regarding approach and adequacy of analysis.
69-1	Page ES-8 - Table ES-1: Releases into Funks and Stone Corral Creeks, should be based on the Historical ecological functions of each creek, not to create "Healthy Fish" habitat where none previously existed.	As described in Chapter 2, Project Description and Alternatives, "The Project has the capacity to make releases from Sites Reservoir into Funks and Stone Corral Creeks should they be necessary to comply with California Fish and Game Code Section 5937 and ensure no harm to downstream water right holders on these creeks (Footnote: The owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam. During the minimum flow of water in any river or stream, permission may be granted by the department to the owner of any dam to allow sufficient water to pass through a culvert, waste gate, or over or around the dam, to keep in good condition any fish that may be planted or exist below the dam, when, in the judgment of the department, it is impracticable or detrimental to the owner to pass the water through the fishway)."
69-2	Page ES-10 - Facility Elements: The 100' buffer around the Reservoir and Facilities seems to be in some instances quite excessive.	As noted in Chapter 2, Project Description and Alternatives, Section 2.5.1.8, Project Buffer, the 100-foot buffer could be less in some locations if a facility is near a property boundary and the associated uses do not conflict with those on the adjacent lands.
69-3	Page ES-20 - Table ES-2 - Impact VEG-4 "Conflicts with Local Policy", mitigation measures VEG 1.2, VEG 2.2 and VEG 4.2 call for compensation, however County Policy simply calls to conserve and enhance where feasible and avoid where feasible.	Mitigation Measures VEG-1.2, VEG-2.2, and VEG 4.2 are consistent with Colusa County conservation policies. For example, the mitigation measures are consistent with Colusa County Policy CON 1-7, which calls for conservation and enhancement of biological communities,

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		and CON 1-8, which calls for conserving existing native vegetation where possible. VEG-1.2 and VEG-2.2 avoid Project impacts, if feasible, through the establishment of activity exclusion zones for special-status plants and sensitive natural communities. The mitigation measures are consistent with CON 1-17, which provides that projects that identify special-status species or sensitive habitats shall avoid impacts "to the maximum extent feasible." Where avoidance is not feasible, the mitigation measures are consistent with CON 1-9, which states that, if full avoidance is not possible, onsite mitigation should be prioritized over offsite mitigation, and with Policy CON 1-17, which calls for implementation of mitigation measures, including provision of replacement habitat of like quantity and quality onsite or offsite for special-status species.
69-4	Page ES-22 - Table ES-2 - Impact WILD-1: Wildlife Resources mitigation measure WILD 1.8 calls for the transplanting of effected elderberry shrubs, so why is additional compensation for habitat removal necessary?	Additional compensation for removal of valley elderberry longhorn beetle habitat is necessary because transplanting is stressful to the affected elderberry shrub and sometimes the transplanted shrubs do not survive. The planting of additional elderberry shrubs ensures that affected shrubs are replaced. Additionally, the U.S. Fish and Wildlife Service recommends compensation for loss of riparian habitat containing elderberry shrubs to ensure that the riparian ecosystem is protected or restored to promote valley elderberry longhorn beetle metapopulation dynamics.
69-5	Page ES-23 - Table ES-2 - Impact WILD-1: Why is an assessment for California Red Legged Frog Habitat necessary when the "California Wildlife Habitat Relationships System" lays out the case there is not specific habitat in the project area?	U.S. Fish and Wildlife Service requested that California red-legged frog be addressed in the Endangered Species Act (ESA) Section 7 consultation for the Project after a site visit to the Project area during which USFWS staff determined that the Project area provides potentially suitable habitat for California red-legged frog. Additionally, based on the habitat model for California red-legged frog, there is potentially suitable habitat in the study area (see Chapter 10, Wildlife Resources, Section 10.2.3, Special-Status Wildlife

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		Species). To be consistent with the ESA Section 7 consultation, and because the western portion of the Project area provides potentially suitable habitat for the species, it was addressed in the RDEIR/SDEIS. Mitigation Measure WILD-1.14 requires qualified biologists to conduct habitat assessments and surveys for California red-legged frog in accordance with USFWS guidelines, which will provide further information about whether suitable habitat in the Project area exists.
69-6	Page ES-26 - Table ES-2 - Impact FISH-2: The information/data that evolved into creating an increase in the Wilkins Slough flow criteria needs to be wholly vetted by various peers in the industry before imposing a baseline criteria.	Please see Master Response 2, Alternatives Description and Baseline, regarding refinements to the alternatives description. As identified in Chapter 11, Aquatic Biological Resources, the Wilkins Slough criteria under alternative conditions were informed by peer-reviewed scientific literature (Michel et al. 2021). In addition, as described in Appendix 2B, Additional Alternatives Screening and Evaluation, the Authority worked with California Department of Fish and Wildlife (i.e., peers in the industry) during the value planning process regarding operational criteria.
69-7	Page ES-31-32 - Table ES-2 - Impact AG-1: Prime Farmland/Williamson Contracts Mitigation Measures 1.1 and 2.1, even though Colusa County honors and supports existing contracts, there is no support for new contracts or conservation easements even if existing ones needs to be canceled for furtherance of the project.	Neither Mitigation Measure AG-1.1 nor Mitigation Measure AG-2.1 calls for the execution of a new Williamson Act contract for land that is not already covered by a preexisting contract. Rather, Mitigation Measure AG-1.1 pertains to conservation easements, while Mitigation Measure AG-2.1 pertains to acquisition of lands under Williamson Act contract. In addition, as the environmental analysis explains in Chapter 15, Agriculture and Forestry Resources, Impact AG-1, it is not feasible to restore all Important Farmland that is converted to nonagricultural uses as a result of the Project, and the impacts on agricultural resources therefore are significant and unavoidable even with the proposed mitigation. The Authority will work with all relevant stakeholders to implement the mitigation measures for agricultural resources, which have been designed to reduce impacts on agricultural resources to the extent feasible.

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69-8	How many Oaks does it take in a specific area to be considered a "Woodlands"?	No specific number of oak trees was associated with the classification of woodlands. Instead, canopy cover was used to distinguish oak woodlands from oak savanna. Oak woodland is mapped where canopy cover is greater than approximately 50%. The minimum mapping unit for land cover types was generally 0.1 acre.
69-9	I found no mention anywhere in the document referring to Purple Star Thistle, which does exist within the footprint.	Purple star thistle is an invasive plant species. Invasive plant species are discussed under Invasive Plant Species in Chapter 9, Vegetation and Wetland Resources, and in Appendix 9B, Vegetation and Wetland Methods and Information. Please see Table 9B-5 in Appendix 9B, which lists Invasive Plant Species Known or Likely to Occur in the Study Area, including purple star thistle.
69-10	Regarding Climate: Temperature ranges within the Sites footprint area and the Valley floor, i.e. Funks Reservoir vary greatly in both summer and winter. Temperatures within the footprint in summer trend higher than indicated in Chapter 9, page 7.	The sources of the temperature data cited in Chapter 9, Vegetation and Wetland Resources, were the weather stations nearest to the Project that have historical and current temperature and rainfall data. These are the Stony Gorge Reservoir and Colusa 2 SSW weather stations. The July temperatures cited are defined as average high temperatures at the weather stations. These data are based on statistics from 1971 through 2000 and averaged to determine the monthly highs and lows. Temperatures in any particular year may vary from the average.
69-11	Study area boundaries on the maps in Appendix 9B seem to have some very random alignments, especially in the inundation footprint. Also land cover types don't seem to reflect what does currently exist in numerous locations.	Mapsheets 1 through 44 in Appendix 9B, showing land cover types in the vegetation and wetlands study area, cover the study area for the Project as it is defined in Chapter 9, Vegetation and Wetland Resources, which includes a 300-foot buffer outside of the Project construction area and final Project footprints for all three Project alternatives. Because the land cover was based on aerial photographic interpretation, some areas, in particular agricultural areas, may vary from year to year. Updates to the land cover will be made during on-the-ground surveys when access is acquired for the botanical, aquatic resource, and wildlife surveys.

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70-1	I am submitting my comments on the Draft Environmental Report for the Sites Reservoir Project ("ER") on behalf of my family and with the objective of raising long term issues of concern for the people, environment and economy of Colusa and Glenn Counties. My family has been farming since 1860 in Colusa County and own property with historical ownership dating back to 1860 on the Colusa Basin Drain north of the town of College City.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS.
70-2	I want to make it clear that I support the Sites Project because its water storage is needed for the State of California but my concern is that important issues could be overlooked that could have serious long term environmental consequences since many local stakeholders have not been involved in the consideration of this historical project for Colusa and Glenn Counties. As you know, the Covid 19 pandemic has suppressed many social interactions including the public engagement for the Sites Reservoir project. Additionally many local stakeholders have what can best described as expectation fatigue whereby there is much skepticism that the Project will ever be completed and therefore many potential stakeholder comments have been likely suppressed due to the lack of confidence that the project will be completed.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for a discussion of commenter support for the Project and a discussion of public outreach and engagement. Master Response 1 also discusses the Authority's and Reclamation's process for considering and potentially approving the Project.
70-3	It takes a significant amount of time to comment and engage with a project of this magnitude and many have engaged and commented only to see the project not to move forward. This is a very important project for the State and the most important project in history for Colusa and Glenn Counties and that is why I have taken the time to comment. Again – I hope the project is completed but I also hope that it is done the right way with win/win outcomes for both the State and the long term vitality and prosperity for Colusa and Glenn Counties and its residents.	The commenter's support for the Project is appreciated and noted.
70-4	The Recent Racial Equity, Diversity, Inclusion, Access and Anti-Racism Resolution ("DEI") (SWRCB Resolution No. 2021-0050) of the SWRCB should be considered and incorporated into the EIR/EIS and well as the DWR's	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the State Water Resources Control Board's DEI resolution and California Department of Water Resources' (DWR's) Human Right to Water (HRTW), as cited

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	adoption of the State of California objectives in the Human Right to Water ("HRW") which was recently incorporated in the DWR Handbook. a. The DEI and HTW objectives of the SWRCB and HTW of the DWR are particularly important to the stakeholders of Colusa and Glenn Counties due to the recent trends in the availability of fresh drinking water and in deteriorating water quality. • Tehama, Glenn and Colusa residents reported over 200 dry domestic wells in 2021 (See https://calmatters.org/environment/2021/08/california-groundwater-dry/), the Cities of Orland and Willows faced water supply challenges and the City of Williams reported that one of its public supply wells ran dry in 2021 (A City of Williams Member on the Colusa Groundwater Authority reported that one of its public supply wells ran dry in an August 2021 Meeting https://colusagroundwater.org/mdocs-posts/2021_08_24-cgaboard-meeting-minutes_final/) • The public supply systems for Maxwell currently have high TDS levels and face potential increases in TDS levels from the upward movement of groundwater with high TDS levels due to the common occurrence of upconing groundwater in the Colusa Subbasin. One of the wells for the Williams public supply system recently reported a TDS level of 790 and the public supply wells for both Maxwell and Williams which lie at the foot of the proposed reservoir have recorded TDS observations from 500 to 800 in recent years. The public supply system for the residents of Grimes has arsenic contamination levels of approximately 25 Ug/L. These water quality challenges are most likely due to the upconing of high TDS connatewater from deeper levels in the aquifer in combination of aggravated redox chemical reactions as increased groundwater pumping and deeper wells bring previously anerobic groundwater into contact with oxygen causing the desorption of naturally occurring contaminates	by the commenter. Master Response 1 discusses the Authority's and Reclamation's commitments to the principles of diversity, equity and inclusion. Please see also Chapter 1, Introduction, regarding the purpose, need, and objectives for the Project. Please see Chapter 8, Groundwater Resources, regarding the potential for impacts on groundwater wells as a result of construction or operation of the Project. As described in Impact GW-1 (violation of water quality standards or waste discharge requirements or otherwise substantial degradation of groundwater quality), the Project would have a less-than-significant impact on groundwater quality, which includes total dissolved solids (TDS). Appendix 8A, Groundwater Resources Basin Setting, identifies an ongoing decline in groundwater levels within the Colusa Subbasin due to multiyear drought conditions, which resulted in land subsidence in the northern and southern portions of the subbasin. The subbasin designation is set as a high priority under the Sustainable Groundwater Management Act (SGMA). Therefore, groundwater sustainability is a known concern for the subbasin with groundwater sustainability projects and management actions required under the SGMA (§ 356.2.c). The conditions described in Chapter 8 and Appendix 8A, which include the majority of the sampled wells exceeding secondary maximum contamination levels for TDS, constitute the baseline conditions. Chapter 8 identifies that impacts would be less than significant regarding water quality standards, waste discharge requirements, or degradation of groundwater quality; decrease in groundwater supplies or substantial interference with groundwater recharge; or conflict with or obstruction of a sustainable groundwater management plan as described in detail in that chapter. The Authority and Reclamation recognize the ongoing multiple groundwater

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	like arsenic and/or just drawing saltier water into the supply system aquifer. B. The DEI and HTW policies and objectives are also important from the perspective of Equity in general. Federal and State taxpayers will be allocating billions of dollars to bring fresh water to urban areas south of the areas of origin in the Sacramento Valley where public funds have been spent to provide conjunctive supply systems. The public supply systems in Tehama, Colusa and Glenn Counties are exclusively dependent on groundwater and currently faced both supply and water quality resiliency challenges that will be benefited by the water storage and supply from the Sites project. It is conceivable and probable that while there may not be enough clean drinking water for the City of Williams in the next 50 years that cities in Southern California will have access to clean drinking water stored less than 10 miles to the north west of Williams by virtue of the publicly subsidized water storage and water conveyance infrastructure of the Sites Reservoir. This seems fundamentally unfair and will result in a disproportionate impact on the primarily minority residents of affected Cities like the City of Williams. Now is the time to guarantee the HTW and DEI protections by using the Sites infrastructure for a water filtration system that can provide the public supply systems in Tehama, Glenn, Colusa and Northern Yolo County with conjunctive access to the surface water from the Sacramento River via a filtration system and pipelines that could be installed next to the Tehama Colusa Canal or the HWY 99 roadway that connects all of these communities. This could be incorporated with broadband infrastructure projects and electrical transmission line upgrades to optimize the resources spent on excavation and infrastructure. C. DEI policies and objectives should also address the distribution of economic opportunity from the construction of the project but also public	concerns across the State of California and recognize that SGMA was passed and is being implemented as a regulatory framework to protect groundwater resources. However, the Project was determined based on evidence in Chapter 8 and its supporting appendices to have less-than-significant impacts on groundwater resources. Please see response to comment 70-14 regarding the redox chemical reactions and water quality issues related to groundwater basins. Water filtration systems and conveyance infrastructure are not part of the Project and not required as mitigation for groundwater impacts because no significant impacts on groundwater would occur. The socioeconomic effects associated with construction in the local and regional area have been evaluated in Chapter 30, Environmental Justice and Socioeconomics. As identified in Chapter 2, Project Description and Alternatives, and Appendix 2C, Construction Means, Methods, and Assumptions, local workforces will be considered for construction contracting purposes. In addition, local and regional economic effects were evaluated in Chapter 30 under operating conditions, primarily with respect to the recreation areas of the alternatives. It is expected the local and regional economy would benefit as a result of the operation of the reservoir. As described in Chapter 2 and evaluated throughout the EIR/EIS, Alternatives 1 and 3 include a bridge across the reservoir, whereas Alternative 2 includes a road around the southern end of the reservoir. Significant and unavoidable impacts associated with Alternative 2 as a result of the road have been disclosed in various chapters (e.g., Chapter 18, Navigation, Transportation, and Traffic; Chapter 14, Land Use; and Chapter 30, Environmental Justice and

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	ease of travel and access to current and future recreational facilities surrounding the Sites project. Construction jobs and contractor opportunities should be offered and solicited from local residents and especially minority residents who are people of color. There should be public workshops regarding jobs and contracting opportunities. Public access to the communities surrounding Sites such as Leesville, Lodoga, and Stonyford should be as easy and short as possible to offer ease of access especially for local residents who are likely to have less economic resources to travel longer distances. There also should be ease of access to current and future recreational areas including the Colusa and Glenn County portions of the Berryessa Snow Mountain National Monument.	Socioeconomics). The Authority and Reclamation acknowledge in the various impact analyses the longer travel time with respect to the Alternative 2 road. The Authority and Reclamation will determine whether, and if so how, to approve the Project or an alternative, after completion of the Final EIR/EIS. Please see response to comment 70-29 regarding Berryessa Snow Mountain National Monument.
70-5	Chapter 3 comments – Environmental conditions The operation of the Sites Reservoir is likely to affect future water supply and groundwater quality in the Colusa Subbasin if it promotes more water transfers and related groundwater substitution extractions from the aquifer. The California Water Commission is likely to approve inbasin groundwater trading which also could lead to more groundwater pumping especially in areas where deep wells are needed to achieve desired pumping volumes and where groundwater quality may be sacrificed for water quantity. The unique aspect of concern for the operation of the Sites Reservoir is it provides a physical connection between inbasin surface water transfers and surface water export sales by Settlement Contractors. With the ability to store and deliver water via the Tehama Colusa Canal and the Glenn Colusa Irrigation District facilities surface water sales become fungible whether or not it is from a diverter on the Sacramento River in the Colusa Subbasin or from stored water in Sites that ultimately be delivered via the Tehama Colusa Canal and the Dunningan interconnect via the Colusa Basin Drain into the Sacramento River downstream. There is also economic incentive to engage in water quality arbitrage whereby fresh water is sold from the	It is unlikely in-basin or out-of-basin transfers that involve groundwater substitution would increase as a result of the Project. These transfers can already occur with existing infrastructure. Out-of-basin transfers can occur by forgoing diversions from the Sacramento River. For example, GCID has transferred water to EBMUD by this mechanism (State Clearing House 2015). Water transfers within the Colusa Subbasin area are already possible using existing infrastructure. Interties connecting the TC Canal to the GCID Main Canal already exist. Please refer to Chapter 5, Surface Water Resources, in the Conveyance Systems section for more details regarding connectivity of the Colusa Basin canal system. In-basin water transfers to Tehama-Colusa Canal Authority (TCCA) members have been proposed in response to 2022 drought conditions using connections between the TCCA and GCID service areas or by reduction in Settlement Contractor diversions, depending on the seller's location (Bureau of Reclamation and Tehama-Colusa Canal Authority 2022:2-6). Transfers are controlled by both environmental regulations and SGMA implementation (e.g., Colusa Subbasin Groundwater Sustainability Plan (GSP), Davids Engineering et al.

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	Sacramento River and salty groundwater is pumped via a groundwater substitution well or otherwise. The control over the conveyance system into Sites which ultimately makes its way back to the Sacramento River via the Dunningan interconnect would allow degraded quality groundwater to be blended in route to inbasin use or exported using the conveyance system to blend. There should also be some consideration how the likely development of inbasin groundwater trading may lead to overpumping and groundwater quality degradation since the Sites Reservoir may be a storage and water market transfer clearinghouse for Sacramento Valley water transfers.	2021). As described in Chapter 8, Groundwater Resources, in Impact GW-2, Reservoirs, and Appendix 8B, Groundwater Modeling, the Project is likely to improve shallow groundwater conditions along the western margins of the Colusa Subbasin as a result of seepage from Sites Reservoir. In addition, groundwater pumping in the subbasin may decrease due to increased surface water supply during periods of drought.
70-6	Chapter 3 comments – Environmental conditions The comments on Page 3-3 regarding the relative slow growth of the Colusa and Glenn communities seems to contrary to the State of California's objectives for DEI economically focused economic opportunity and a reasonable affordable housing policy. Just because an area has had slow growth in the past it does not justify condemning an area to be an economic wasteland especially since it is the area of origin for most of the State's water resources and offers the best opportunity to meet the State's affordable housing objectives. For example, the City of Williams has grown significantly in the past decade and faces challenges to its water resiliency because it does not have access to the same Sacramento Surface water that Sites will store. The ER should consider the State's housing and affordable housing and DEI housing and economic policies when making these statements.	Chapter 3, Environmental Analysis, explains and defines the environmental baseline and No Project Alternative/No Action Alternative for the purposes of CEQA and NEPA compliance. This chapter identifies that "the physical environmental setting and land uses in Glenn and Colusa Counties, where the reservoir would be located, are not expected to materially change under the No Project Alternative." Chapter 3 is not intended to pass judgement on the growth in the area as the commenter suggests. As identified in Chapter 30, Environmental Justice and Socioeconomics, Impacts SOC-1 and SOC-2, the regional and local economies are expected to experience positive economic effects under the different alternatives associated with construction and operation of the Project. These positive economic effects are attributed to increased labor income and jobs in Glenn and Colusa Counties during construction and due to operation and maintenance of the associated facilities and recreational areas compared to the No Project Alternative. However, despite the economic benefits, the Project is not expected to change the environmental justice and socioeconomic baseline conditions. The Project would not affect the city of Williams water supply. Construction and operation of the Project would also not result in substantial displacement of people or housing and would not

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		necessitate the construction of extensive replacement housing elsewhere. Potential impacts on housing are addressed in Chapter 25, Population and Housing.
70-7	Chapter 3 comments – Environmental conditions The EIR/EIS does not acknowledge the cultural assets that come with the areas 150 year historical heritage or its rich ecological resources that are being increasing used for ecotourism and ecofriendly stakeholders. The area surrounding the proposed site encompassing the historical towns or Leesvile, Lodoga and Stonyford which have a rich pioneer heritage and current ranching related activities. Wilbur Springs has become a eco-focused resort and is used as an access point for many who want to enjoy the surrounding natural points of interest. Most importantly there does not appear to be any mention of the increased use of the Mendocino National Forest and/or the northern portion of the Berryessa Snow Mountain National Monument which has recently expanded and could expand more in the future. The access to Leesville, Lodoga and Stonyford is important to provide access for public use of the National Monument and National Forest.	The EIR/EIS describes the Antelope Valley in numerous chapters including Chapter 15, Agriculture and Forestry Resources, which acknowledges the current grazing activities, and Chapter 22, Cultural Resources, that discusses cultural resources. As identified in Chapter 2, Project Description and Alternatives, Alternatives 1 and 3 would include a bridge across Sites Reservoir providing east/west access between Lodoga and Maxwell. Alternative 2 would include a road around the south side of Sites Reservoir also providing east/west access between Lodoga and Maxwell. Therefore, access to resources west of the reservoir (e.g., National Monument and National Forest) would be maintained. These resources are outside of the study area for Sites Reservoir because these resources would continue to exist and would not be affected by the reservoir.
70-8	Chapter 3 comments – Environmental conditions The EIR/EIS does not address the loss of seasonal flooding that comes with historical flows from Stone Corral and Funks Creek. The confluence of these two Creeks occurs in the general wetland area and within part of the Willow Creek – Lurline Wetland Management Area just west of the Delevan Nation Refuge and provides the historical flooding for seasonal wetlands outside the Delevan Refuge and the Colusa Refuge downstream. In addition there is substantial acreage set aside for seasonal wetlands in the western flood zone of the Colusa Basin Drain that provide food biomass for fish and aquatic species when the flood waters makes its way down the Colusa Basin	As described in Water Operations in Chapter 2, Project Description and Alternatives, operation of the Project would provide a base flow of between 0 and 100 cubic feet per second to Stone Corral and Funks Creeks, augmented by higher periodic pulse flows to maintain fluvial geomorphic processes in the stream channel. As discussed in Chapter 11, Aquatic Biological Resources, Section 11.2.7, Local Drainages, and Water Operations in Chapter 2, Project Description and Alternatives, this proposed flow would be in compliance with California Fish and Game Code 5937, a requirement that dam operators provide sufficient flow below dams to keep fish in good condition. In addition, this flow would be consistent with the

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	Drain to the Sacramento River and it also provide vernal pool habitat and other benefits to the flora and fauna that are located in the riparian area of the Colusa Basin Drain. The riparian areas are important habitat for both the Delevan and Colusa Refuges but also downstream which was the historical confluence of the Sacramento River and Sycamore Slough. This area now provides a rich habitat for flora and fauna on the natural levee on the westside of the Colusa Basin Drain and the islands located in the channel of the Drain. Seasonally the flooding provides regenerative life to the seasonal flood zone. The EIR/EIS does not seem to consider how the diversions from Funks Creek and Stony Creek may affect these flows especially in dryer years where flood events may not happen as often over a water year cycle.	hydrological record from a USGS stream gage that operated on Stone Corral Creek near the town of Sites from April 1958 to September 1975. Given the age and limited amount of flow data provide by that gage, the Flow Characterization and Geomorphic Study in Section 2D.4.3 of Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, discusses a flow characterization and geomorphic study to confirm the appropriate operating regime consistent with the commitment to not encroach on ecological function, including wetlands function. The study will be conducted when access to necessary areas can be obtained and before construction begins to inform Project design as needed. While the flow plan developed based on that study will protect downstream ecosystem functions, including wetlands function, it will also achieve the flood control benefits identified for the Project, as described in Water Operations in Chapter 2.
70-9	Chapter 7 - Fluvial Geomorphology The description of the Colusa Basin Drain on 7.2.4 should highlight that the Colusa Basin Drain is the source of seasonal surface water supplies from winter floods for the Delevan National Refuge and Colusa National Refuge and the native islands and wetlands south of the Colusa National Refuge. It is wrong to state that the whole area has been modified because the reclamation levee starts south of the Colusa National Refuge and because the area west of the Levee is similar to its natural state before settlement and contains islands with natural habitat in the channel of the Colusa Basin Drain but also on the natural levees and flood zone on the west side of the channel. Please refer to the map of the habitat for the Colusa National Refuge which is representative of the riparian habitat on the west side of the Drain and its islands and the area of seasonal flooding for the wetlands on the west side of the Drain south of the two Refuges	Refer to Appendix 7A, Fluvial Geomorphic Setting Information, where additional information was available in the RDEIR/SDEIS regarding fluvial geomorphology. Chapter 7, Fluvial Geomorphology, referred the reader to this appendix in the RDEIR/SDEIS. The information in Appendix 7A, Section 7A.4, Colusa Basin Drain, focuses on the sediment regime of the Colusa Basin Drain (CBD). A brief description regarding seasonal CBD contributions to natural areas has been added. The hydrologic characteristics of the CBD and Knights Landing Ridge Cut are described further in Chapter 5, Surface Water Resources, Section 5.2.1.2, Conveyance Systems. Please see response to comment 70-22 regarding flows and habitat in the CBD, Delevan National Refuge, and Colusa National Refuge.

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	https://www.fws.gov/uploadedFiles/Region_8/NWRS/Zone_1/Sacramento_Complex/Sacramento/Uploaded_Files/Maps_and_Brochures/Habitats/Colusa%20NWR%20Habitat%20Mgt%20201213.pdf	
70-10	Chapter 8- Groundwater Resources This Chapter relies on dated research for groundwater quality in the Colusa Subbasin. It relies on the work from Berkstresser which was done in 1973 which has elevated assumed levels for EC and TDS to determine Base to Fresh Water ("BFW") Assumptions. The reliance on Berkstresser does not reflect the most recent understanding of BFW and groundwater quality in the Sacramento Valley but more importantly does not provide the necessary information for the State to carry out its policy objectives for HRW and DEI concerns. The public supply system for all the impacted communities rely exclusively on groundwater and future trends in groundwater quality is paramount. Additionally the ER should be updated to discuss the loss of drinking water resources that was experienced during this last drought due to the failure of several hundred domestic wells and at least one public supply well. [(https://colusagroundwater.org/mdocs-posts/2021_08_24-cgaboard-_meeting-minutes_final/)].	The Berkstresser (1973) report was utilized solely for range to freshwater depth within the Sacramento Valley in Section 8A.2.3, Sacramento Valley Groundwater Basin, of Appendix 8A, Groundwater Resources Basin Setting. Specific groundwater depths within Colusa subbasin were determined using DWR's Bulletin 118-03 (California Department of Water Resources 2006). Groundwater quality conditions within the Colusa Basin were determined using the Groundwater Ambient Monitoring and Assessment Program's Groundwater Information System (California Water Boards 2020). Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding general methods and modeling. Chapter 30, Environmental Justice and Socioeconomics, Effect EJ-1 discusses effects on minority populations from construction and operation of the Project. Effect EJ-2 Disproportionate and Adverse Effects on Low-Income Populations discusses effects on low-income populations from construction and operation of the Project. Assembly Bill 685, the Human Right to Water, and the State Water Resources Control Board Diversity, Equity, and Inclusion Resolution are discussed in Master Response 1. The April 2022 Colusa Subbasin GSP, Annual Report (Davids Engineering, Inc. and West Yost 2022) is now included in Section 8A.2.3.3, Colusa Subbasin (5-021.52), of Appendix 8A of the Final EIR/EIS. RDEIR/SDEIS Appendix 8A acknowledged an ongoing decline in groundwater levels within the Colusa Subbasin due to multiyear

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		drought conditions that resulted in land subsidence in the northern and southern portions of the subbasin. The appendix also noted that the subbasin designation is set as a high priority under the SGMA (California Department of Water Resources 2020b). Therefore, groundwater sustainability is a known concern for the subbasin, with implementation of groundwater sustainability projects and management actions required under the SGMA (California Department of Water Resources 2020b: Section 356.2.c). The information added to Appendix 8A does not affect or change determinations made in Chapter 8, Groundwater Resources, Section 8.4, Impact Analysis and Mitigation Measures. Groundwater use during construction is not expected to deplete aquifers or interfere with groundwater recharge because the combined surface area of both basins indicates the corresponding aquifer and related groundwater volume are large enough to provide the required construction groundwater without substantial depletion to the aquifers, and use of groundwater from construction would be temporary.
70-11	Chapter 8- Groundwater Resources The DWR has developed new BFW contour maps which should be relied on for the EIR/EIS. Fresh groundwater is defined by the DWR as containing less than 1,000 mg/total TDS and approximately 1,550 umhos/cm specific conductance instead of the 3,000 umhos/cm used in Berstresser. According to the DWR the BFW is an uneven boundary that in some places reflects major geologic structures underlying the Sacramento Valley, and in other areas, transgresses underlying geologic structures. In some areas, the BFW boundary is well above the base of post-Eocene marine strata. According to the DWR, this is most likely caused by high artesian pressure and upward vertical gradients in deep aquifers in the Sacramento Valley, which has been	The Berkstresser (1973) report was not used to determine primary maximum contaminant level (MCL) exceedances for groundwater drinking water within the study area. Determination of primary MCL exceedances within Antelope Creek and Funks Creek Basins and Colusa, Red Bluff, and Yolo Subbasins was based on NODOS GW Quality Study Data (California Department of Water Resources 2007) and the Groundwater Ambient Monitoring and Assessment Program's Groundwater Information System (California Water Boards 2020). Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding general methods and modeling.

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	documented in DWR monitoring wells, including the most recent multi completion monitoring well north of Arbuckle on Hahn Road. The DWR research suggests that migration of poor quality water into continental sediments that previously contained fresh water has occurred over geologic time. The DWRs findings is the basis for my concern about water quality and its implications for brackish and saline upconing beneath areas of prolonged groundwater pumping in the Colusa Subbasin and Sacramento Valley generally. Https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CSPA%20et%20al/part2/aqua_246.pd	Groundwater recharge within the Central Valley is primarily from surface water sources along the edges of the valley, such as streams in the Coast Ranges, Cascade Range, and Sierra Nevada, with infiltration by precipitation being a secondary source. Generally, surface water enters the aquifer system at these valley edges where the hydraulic head in shallow water-table aquifers is greater than the head in deeper confined aquifers, resulting in a downward direction of infiltrating surface water, or percolation (Ferriz 2001). Under Project operations, surface water reliability is expected to increase within the Sacramento Valley. As noted in Chapter 5, Surface Water Resources, "On average, total CVP and SWP deliveries would remain basically unchanged or increase with Alternatives 1, 2, and 3, with greater increases expected in association with CVP participation, particularly with Alternative 3." Additionally, in Chapter 8, Groundwater Resources, Impact GW-3, Conflict with or obstruct implementation of a sustainable groundwater management plan, it is noted that "[Project] Operation would improve water supply and reliability by creating additional surface water storage to be used by SWP and CVP contractors. This increased water storage aligns with county GSP sustainability goals" and "Alternatives 1, 2, and 3 would provide a more reliable surface water supply for agricultural use, lowering dependency on groundwater pumping for crop irrigation in the Sacramento Valley and the San Joaquin Valley for Storage Partners. Surface water use could increase deep percolation that would subsequently increase groundwater storage and improve groundwater quality because surface water has been shown to have better water quality than groundwater... This increase in groundwater storage could also reduce land subsidence and disconnections from surface water. The increased surface water use for agriculture would also decrease dependency on micro-irrigation systems, which rely on

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		groundwater pumping and have been shown to result in little to no groundwater recharge and a buildup of salt in the upper layers of the soil profile, both due to lack of deep percolation (Fahey 2012)." Therefore, Project operations are expected to reduce reliance on groundwater pumping, due to providing a more reliable surface water supply, and are not expected to result in saline upconing within the Colusa Basin.
70-12	The groundwater quality information in Appendix 8 and relied on in Chapter should be reconciled with the USGS Gamma Scientific Investigations https://pubs.usgs.gov/sir/2011/5002/ regarding the status of groundwater quality in the Colusa Subbasin and also the Bureau of Reclamation's own data regarding groundwater quality for wells used for Groundwater Substitution should also be used https://ceqanet.opr.ca.gov/2020029001/2. Please note that the majority of the water quality samples for wells used for groundwater substitution by Glenn-Colusa Irrigation District are above the Specific Conductance Threshold of 700 umhos/cm pursuant to the Draft Technical Information for 2015 Water Transfers. The wells identified as Reister # 2 and Reister # 3 have continuous observations between 1800 and 2000 umhous/cm as set out in Appendix I of the Environmental Assessment 2020 Tehama-Colusa Canal Authority In-Basin Water Transfers as cited above. Chapter 8 should also reference the Minimum Threshold and Measurable Objective for groundwater quality in Table 5.1 of the Colusa Subbasin Groundwater Sustainability Plan. The Measurable Objective is the same 700 umhos/cm as the Draft Technical Information Paper and the Minimum Threshold is 900 umhous/cm. The Draft Colusa Subbasin GSP can be accessed on https://colusagroundwater.org/	Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding general methods and modeling. Determination of groundwater quality in the Colusa Subbasin was based on Bulletin 118-03 (California Department of Water Resources 2006), the Groundwater Ambient Monitoring and Assessment Program Groundwater Information System for the Colusa Subbasins (California Water Boards 2020), and the SGMA basin dashboard (California Department of Water Resources 2020b), whereas the referenced groundwater ambient monitoring and assessment (GAMA) scientific investigation (U.S. Geological Survey 2011) utilizes well data collected between 2005 and 2008, grouping the Sacramento Valley into three broader areas: north, middle, and south. Therefore, Chapter 8, Groundwater Resources, and the supporting Appendix 8A, Groundwater Resources Basin Setting, rely on more current groundwater quality data in a more focused area when compared to the U.S. Geological Survey GAMA scientific investigation report, providing a better representation of conditions in the Colusa Basin. The Initial Study/Environmental Assessment of the 2020 Tehama-Colusa Canal Authority In-Basin Water Transfers (Bureau of Reclamation and Tehama-Colusa Canal Authority 2020) looks at the entirety of the Sacramento Valley groundwater basin. This reference

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		recognizes localized groundwater quality issues but summarizes that the groundwater quality within the basin is "sufficient for municipal, agricultural, domestic, and industrial uses" (Bureau of Reclamation and Tehama-Colusa Canal Authority 2020). The upper limit for specific conductance along the GCID Main Canal in Section 8A.2.3, Sacramento Valley Groundwater Basin, in Appendix 8A has been updated in the Final EIR/EIS to use the 2015 documented 1,950 micromhos per centimeter (µmhos/cm) noted in Appendix I of 2020 Tehama-Colusa Canal Authority In-Basin Water Transfers (Bureau of Reclamation and Tehama-Colusa Canal Authority 2020:550). Specific conductance in Table 8-2 in Chapter 8 was not updated, as it utilizes water quality within a 1-mile radius of Project elements, and the location of Reister wells could not be determined beyond being within the Colusa Subbasin. Chapter 8, Impact GW-3 and Appendix 8A have been updated in the Final EIR/EIS to include the final Colusa Subbasin GSP, including noting the plan includes minimum threshold and measurable objectives (Davids Engineering, Inc. et al. 2021). As noted in Impact GW-1, construction and operation of the Project would have a less-than-significant effect on groundwater quality and so would not conflict with or obstruct the implementation of the Colusa Subbasin GSP minimum threshold and measurable objectives. The information added to Appendix 8A or Chapter 8 does not affect or change determinations made in Chapter 8, Groundwater Resources, Section 8.4, Impact Analysis and Mitigation Measures.
70-13	Section 8.4 makes a point that there was not a need for a Project to mitigate potential water quality degradation impacts "given the rural nature of the study area". Is this type of logic consistent with the SWRB DEI Resolution or the DWR HTW Commitments. It should not matter if an area	See response to comment 70-10 and Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding compliance with the State Water Resources Control Board

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	is rural or not if there is a Human Right involved. It should also be noted that local residents are likely to be persons of color so it there are negative impacts the impacted community would be the same community that the DEI Resolution is set out to protect.	Diversity, Equity, and Inclusion Resolution and the DWR Assembly Bill 685, the Human Right to Water, commitments. Chapter 8, Groundwater Resources, refers to the rural nature of the study area. It should be noted this descriptor was referenced under the No Project Alternative section of Impact GW-1, Violation of water quality standards or waste discharge requirements or otherwise substantial degradation of groundwater quality and does not pertain to any potential effects during Project construction or operations. The intent of noting the rural nature of the study area was to reflect the infiltration rate of precipitation to groundwater when compared to more developed areas. Since rural areas are often less developed, with more vegetation, the infiltration rates are typically better than highly developed settings, which are dominated by hard surfaces and poor infiltration of stormwater. See response to comment 70-10 and Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding compliance with the State Water Resources Control Board Diversity, Equity, and Inclusion Resolution and the DWR Assembly Bill 685, the Human Right to Water, commitments. Chapter 8, Groundwater Resources, refers to the rural nature of the study area. It should be noted this descriptor was referenced under the No Project Alternative section of Impact GW-1, Violation of water quality standards or waste discharge requirements or otherwise substantial degradation of groundwater quality and does not pertain to any potential effects during Project construction or operations. The intent of noting the rural nature of the study area was to reflect the infiltration rate of precipitation to groundwater when compared to more developed areas. Since rural areas are often less developed,

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		with more vegetation, the infiltration rates are typically better than highly developed settings, which are dominated by hard surfaces and poor infiltration of stormwater. Chapter 8 notes that Sites Reservoir is likely to cause inundation in previously unsaturated areas, which would in turn produce higher groundwater in the shallow aquifer along the western margins of the Colusa Subbasin (in the immediate vicinity of Sites Reservoir). This inundation would improve nearby water quality by reducing current salinity levels in groundwater with high-quality surface water. During construction, potential contamination of groundwater from dewatering will be avoided through the implementation of BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002 for Limited Threat Discharges to Surface Water) and State Water Resource Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the permits and any amendments thereto).
70-14	Section 8.4 also makes a statement that there is no water quality contamination in the study area yet Table 2 sets out that an Arsenic contamination greater than the MCL for Arsenic and the EC for the Sites Reservoir is as high as 2190 umhou/cm which would equate to an approximate TDS level in excess of 1400 ug/L. Water is considered brackish at a TDS level of 1000 . See https://pubs.usgs.gov/circ/1358/ for discussions regarding the degradation of groundwater due to Redox, the desorption of Arsenic that occurs in Redox conditions and the movement of naturally occurring contaminants via faults all of which are conditions affecting water quality in the Colusa Subbasin and the Sacramento Valley in general.	Chapter 8, Groundwater Resources, and its related appendices describe the water quality issues in the Project vicinity. As documented in Appendix 8A, Groundwater Resources Basin Setting, there was a primary MCL exceedance for arsenic within 1 mile of the GCID Main Canal (California Department of Water Resources 2007). In the Colusa Subbasin, MCL arsenic exceedances occur at a depth of 430 feet or greater (California Department of Water Resources, Northern Regional Office 2020). Based on the depth of ground disturbance during construction for the GCID Main Canal Diversion and System Upgrades and implementation of BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES

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		No. CAG995002 for Limited Threat Discharges to Surface Water) and State Water Resource Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the permits and any amendments thereto), there is a low probability of arsenic affecting groundwater quality in the study area. As described in Appendix 8A, groundwater quality in the Funks Creek and Antelope Creek Basins is fair, with a high mineral content measuring up to 2,190 µmhos/cm and TDS ranging up to 1,291 milligrams per liter (Sites Project Authority 2017b:11-12). These groundwater basins are largely shallow (generally less than 100 feet below ground surface) alluvial deposits with limited groundwater resources based on poor water-bearing and water quality characteristics (California Department of Water Resources 2003a:159; see also Chapter 12, Geology and Soils). Project operations would completely inundate these basins. This inundation is expected to improve local groundwater quality and reduce the salinity due to the "weight of the reservoir could force additional percolation of surface water into the reservoir soils, resulting in higher quality surface water seeping into the reservoir floor and the shallow groundwater layer" (see the Alternatives 1, 2, and 3, Operation, Reservoirs section of Impact GW-1). As noted in the response to comment 70-11 Project operations is expected to increase surface water reliability (additional surface water storage) thereby lowering the dependency and use of groundwater pumping, especially from deeper confined aquifers. Based on this, redox conditions, which could increase mobilization of arsenic from

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		geologic formations into groundwater due to anaerobic conditions, would not occur because of Project construction or operations. Groundwater use during construction is not expected to deplete aquifers or interfere with groundwater recharge because the combined surface area of both basins indicates the corresponding aquifer and related groundwater volume are large enough to provide the required construction groundwater without substantial depletion to the aquifers, and use of groundwater from construction would be temporary. In addition, due to "the average well depth and total depth to water of local well infrastructure, nearby wells would be able to compensate for reductions in groundwater levels associated with dewatering during construction" since "the average well depth and total depth to water would" compensate for any localized reduction in groundwater levels" (Impact GW-2). Finally, changes in groundwater levels or recharge would be minimized through implementation of BMP-14. Based on groundwater conditions and site geology, increased inundation from the reservoir is expected to stay within the shallow groundwater aquifer resulting in a maximum of an additional 30 feet immediately west of the reservoir. This shrinks to a depth of 5 feet roughly 4 miles to the east, near TRR East (see the Alternatives 1, 2, and 3, Operation, Reservoirs section of Impact GW-2). This is supported by the geologic feasibility report for the Project (California Department of Water Resources 2003b:32), which indicates the fault GG-2 may be acting as a groundwater barrier, and springs near Golden Gate are a surface expression of the groundwater exiting downgradient of the fault. The William Lettis & Associates (2002:xxiv, 3-4) discussion of the structural geology further indicates that the S-2, GG-1, GG-2, GG-3, and Salt Lake faults terminate against the Funks

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		segment of the Great Valley thrust fault. This surface expression of the groundwater discharge is further documented in Appendix 8B, Groundwater Modeling, in Figure 10A-3A, Figure 10A-3B, and corresponding discussion, which notes groundwater discharge occurs at streams and other low-lying areas and is largely similar between the No Project Alternative and the modeled alternatives (see Section 10A.3.2, Results, of Appendix 8B). Therefore, groundwater from the shallow aquifers of the Funks and Antelope Basins are unlikely to reach the Colusa Subbasins or other Central Valley subbasins. Finally, there would be no effect on current movement of groundwater via faults within the study area due to Project construction or operations, based on the depth of ground disturbance when compared to depth of impaired groundwater, implementation of BMP-14, and the primary groundwater recharge mechanism as discussed in response to comment 70-11.
70-15	Chapter 8 does not discuss groundwater quality degradation due to Redox at all. The USGS Circular 1358 referenced above and a Draft Technical Memorandum dated January 23, 2014 by CH2Mhilll " Arsenic in Groundwater, Soil, and Surface Water in Rice-Growing Areas of the Sacramento Valley " by Summer Bundy Et. al. discuss the potential for Redox conditions and how Redox conditions can be aggravated by changes in soil oxidation levels that come with overpumping of groundwater or the upconing of anoxic salt water into parts of the aquifer where the anoxic water is exposed to oxygen. Figures 1 and 2 of the CH2Mhill Memorandum are important because it makes it clear that the rice growing areas include the area encompassing Funks and Stone Corral Creeks downstream from the Reservoir and describes the Redox process well in Figure 2. Please note that there has been several studies finding anoxic wells in the Valley below	As noted in response to comments 70-11 and 70-14, Project construction and operations are not expected to result in groundwater overpumping or increase anaerobic groundwater conditions in the Project area. Response to comment 70-11 also discusses effects on water quality from inundation of surface water on the shallow groundwater aquifer. Increased inundation is expected to stay within the shallow groundwater aquifer reaching at most an additional 30 feet immediately west of the reservoir. This shrinks to a depth of 5 feet roughly 4 miles to the east, near TRR East (see the Alternatives 1, 2, and 3, Operation, Reservoirs section of Impact GW-2). As shown in Figure 15-1 in Chapter 15, Agriculture and Forestry Resources, the nearest rice cropland to a Project element is east of TRR East across

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	the Reservoir Site – including Table E-5 and Figure E-5 of the USGS Gamma Scientific Investigations [https://pubs.usgs.gov/sir/2011/5002/].	from McDermott Road. Therefore, increased inundation from the reservoir on rice cropland is not expected to occur. Finally, this increase in water in the shallow aquifer would not expose oxygen to deeper geologic formations that may be anaerobic. Effects on rice crops due to arsenic because of Project operations are analyzed in Chapter 15, where it was determined "relatively low concentrations of arsenic from upstream along the Sacramento River followed by evapoconcentration would lead to small changes in arsenic concentrations" for rice. In addition, according to a study conducted for the California Rice Research Board (CH2M HILL 2014), arsenic is most often associated with alluvial soils and areas with volcanic or hydrothermal conditions. The alluvial soils in the Project area are relatively shallow, and volcanic and hydrothermal conditions are not present.
70-16	Chapter 8 does not address the potential for seepage of water or the seepage of brackish water from the Reservoir site into the Valley floor from faults or other geological features including the potential movement via active subduction zones from current geological structures or future geological deformation as a result of a future earthquake. When constructed the Sites Reservoir will contain 1 to 1.5 million acre feet with a hydraulic head of 500 ft above the Valley Floor. Public supply and domestic wells are likely at least 200 feet below sea level so this hydraulic gradient has a great gravitational force to find its way to push saline groundwater into or aggravate the already existing high artesian pressures and upward vertical gradients in the deep aquifers referenced by the DWR [(https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CSPA%20et%20al/part2/aqua_246.pdf)]. It is clear that the Reservoir Site sits upon or is near a subduction zone or near the border of active or potentially active subduction zones. Figure 1 of	Please see response to comments 70-10, 70-11, and 70-14 regarding degradation of groundwater quality from Project operations and relation to the State Water Resources Control Board Diversity, Equity, and Inclusion Resolution and the DWR Assembly Bill 685, the Human Right to Water, objectives and responsibilities. Assembly Bill 685, the Human Right to Water, and the State Water Resources Control Board Diversity, Equity, and Inclusion Resolution are discussed in Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments. Chapter 12, Geology and Soils, provides a detailed discussion of earthquake risk in the Project area and references the site-specific studies conducted by William Lettis & Associates (2002), which incorporates the necessary level of detail in the setting to understand the impact analysis. The seismotectonic evaluation by William Lettis &

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	the Paper " Glaucophane schists and ophiolites of the northern California Coast Ranges: Isotopic ages and their tectonic implications" by F.W. Mc Dowell et.al (1984) https://pubs.geoscienceworld.org/gsa/gsabulletin/articleabstract/95/11/1373/189453/Glaucophane-schists-and-ophiolites-of-the-northern?redirectedFrom=fulltext makes it clear that the subduction zone analysis is complex and that the Reservoir site is close to a boundary of ophiolitic materials and the deposits of the Great Valley Sequence. The area to the west of the Site near Goat Mountain and Stonyford and to the north of the Site near the town of Paskenta is also complex. The risk of this hydraulic head needs to be addressed in Chapter 8 and assessed in context of the SWRB DEI Resolution and the DWR HRTW objectives and responsibilities.	Associates (2002: Chapter 3.0) describes and considers the tectonic development of the region, including the ancestral forearc basin, the Coast Ranges, the Cascadia subduction zone, the stratigraphy of the Great Valley Group, and the region's structural geology. It also describes the site-specific fault studies and kinematic model used in the analysis. See, for example, Figure 12-3 in Chapter 12, which provides a geologic cross section and includes the Coast Range Ophiolite and Great Valley thrust fault. Also, as described in Chapter 12, William Lettis & Associates (2002) conducted extensive seismotectonic studies in the vicinity of the proposed dams, and additional geotechnical information will be incorporated into the Project design as further studies are conducted (see Section 2.5.3.1, Geotechnical Investigations, in Chapter 2, Project Description and Alternatives). Therefore, these reports provide the context necessary to assess earthquake risk in the Project area and are suitably summarized for the purposes of CEQA and NEPA. Please see response to comments 70-10, 70-11, and 70-14 regarding degradation of groundwater quality from Project operations and relation to the State Water Resources Control Board Diversity, Equity, and Inclusion Resolution and the DWR Assembly Bill 685, the Human Right to Water, objectives and responsibilities. Assembly Bill 685, the Human Right to Water, and the State Water Resources Control Board Diversity, Equity, and Inclusion Resolution are discussed in Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments. Chapter 12, Geology and Soils, provides a detailed discussion of earthquake risk in the Project area and references the site-specific studies conducted by William Lettis & Associates (2002), which incorporates the necessary level of detail in the setting to understand

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		the impact analysis. The seismotectonic evaluation by William Lettis & Associates (2002: Chapter 3.0) describes and considers the tectonic development of the region, including the ancestral forearc basin, the Coast Ranges, the Cascadia subduction zone, the stratigraphy of the Great Valley Group, and the region's structural geology. It also describes the site-specific fault studies and kinematic model used in the analysis. See, for example, Figure 12-3 in Chapter 12, which provides a geologic cross section and includes the Coast Range Ophiolite and Great Valley thrust fault. Also, as described in Chapter 12, William Lettis & Associates (2002) conducted extensive seismotectonic studies in the vicinity of the proposed dams, and additional geotechnical information will be incorporated into the Project design as further studies are conducted (see Section 2.5.3.1, Geotechnical Investigations, in Chapter 2, Project Description and Alternatives). Therefore, these reports provide the context necessary to assess earthquake risk in the Project area and are suitably summarized for the purposes of CEQA and NEPA. Regarding the comment on the fault near Paskenta and its role in the movement of contaminated groundwater, based on the seismotectonic evaluation (William Lettis & Associates 2002), the Paskenta and Willows faults (both of which are between the reservoir area and the Central Valley) do not appear to provide a conduit between the reservoir area and the Central Valley. William Lettis & Associates (2002) conclude that the Paskenta fault does not project as far south as the Orland Buttes, does not connect or directly relate to the Willows-Corning fault, and is 25.5 miles from the Sites and Golden Gate Dams sites at its closest approach (3-127,A-19). The seismotectonic evaluation also does not appear to show a connection between the reservoir area and the Corning-Willows fault (William Lettis & Associates 2002:Figures 2-2, 2-3, 2-4). In addition, as noted in

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		response to comment 70-14, in the geologic feasibility report for the Project (California Department of Water Resources 2003b:32), the DWR indicates that fault GG-2 likely acts as a groundwater barrier. Regarding the comment that Sites Reservoir could affect the hydraulic gradient so that saline groundwater would be "pushed" up into deep groundwater aquifers, as noted in response to comment 70-14, increased groundwater from Sites Reservoir is expected to stay within the shallow groundwater aquifer and be discharged to surface waterways similar to present conditions.
70-17	The upconing of salt water in the Sacramento Valley is of great concern and there are many data gaps regarding this issue. What is clear is that groundwater extraction is occurring in a fresh water aquifer above a subduction zone and that over pumping degrades the fresh water aquifer either because previously anoxic salt water is exposed to oxygen and the Redox process occurs and/or the natural upward pressure gradient or artesian influences are also accelerating the contamination and Redox process. We need more data and to do that we need more multi-completion observation wells especially on the west side of the Sacramento Valley – groundwater quality needs to observed at multiple depths and the hydraulic gradient of each observation site needs to be observed and monitoring. The required analysis should be a time series of observations and these observations should focused on current hydrological conditions and futures hydrological conditions that may come with having the hydraulic head of the water storage sitting 500 feet above the Valley floor. There may be no influence but then there could be material influence especially as a result of a movement in a fault or an earthquake event. In order to monitor this potential contamination, the Project should invest in a series of monitoring wells in the Colusa Subbasin and finance this	Please see response to comments 70-11 and 70-15 regarding use of groundwater and overpumping, resulting in degraded water quality in the Colusa Subbasin. As noted in response to comments 70-11 and 70-15, Project operations are expected to provide a more reliable surface water supply, lowering dependency on groundwater pumping. In addition, this surface water could improve deep percolation increasing groundwater storage compared to No Project Alternative conditions. This is expected to also improve groundwater quality as the surface water has been shown to have better water quality than groundwater within the Sacramento Valley. Though no effects to groundwater quality are expected from Project operations, it is worth noting monitoring in the Sacramento Valley Basin for groundwater quality and levels are currently occurring as part of the Groundwater Ambient Monitoring and Assessment Program and SGMA. Chapter 4 of the Colusa Subbasin GSP is dedicated to establishing a groundwater monitoring network to track groundwater levels and quality, surface/groundwater interactions, and extent of land subsidence (Davids Engineering, Inc. et al. 2021).

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	monitoring process working with the local Groundwater Authorities and Irrigated Lands.	
70-18	After assessing all the groundwater quality concerns in conjunction with the State's objectives and responsibilities from the DEI resolution and HRTW, the logic for a Sacramento Valley West Side Filtration System is a compelling mitigation project that could be combined with other public infrastructure projects such as broadband and buried power lines running north and south via the Hwy 99 infrastructure adjacent to I-5. Policy makers will spend billions of dollars on a project that will primarily urban residents down stream from the Reservoir but may end up leaving the residents and communities at the base of the project without a sustainable supply of fresh water either because there is not supply or because the Reservoir project itself caused degradation of the fresh water supply by seepage or increased hydraulic and artesian pressures forcing salt water into domestic wells and public supply systems like the public supply systems for Maxwell and the City of Williams.	Please see response to comments 70-10, 70-11, 70-14, and 70-16 regarding commenter-specific concerns related to groundwater. As noted in these responses, groundwater quality is not expected to be degraded from the project. Rather, over time, groundwater quality in the shallow aquitard is more likely to be improved from the Project due to increased surface water use and storage, as surface water quality is better than groundwater quality within the Sacramento Valley. In addition, incorporation of the Sacramento Valley West Side Filtration System into the groundwater analysis would be beyond the scope of this Project and the environmental analysis.
70-19	Section 9.3 appears to ignore the riparian and seasonal wetlands on the Colusa Basin Drain. Since this is the habitat that encompasses thousands of acres of wetland easements and two National Refuges this seems like a very material omission. Section 9.3.1. should include the discussion of the vegetation and wetlands in the Delevan and Colusa Refuges and all the wetland habitat on the Colusa Basin Drain below the two Refuges.	The CBD receives inputs from numerous sources other than Stone Corral Creek, including Willow Creek, Logan Creek, Bounde Creek, and various agricultural return flows. Due to the number of inputs that are not associated with the Project, operation of the Project is not expected to affect the hydrology of the CBD nor the riparian and seasonal wetlands associated with it. Similarly, no substantial effects would be anticipated on the Delevan or Colusa National Wildlife Refuges (NWRs). Delevan NWR receives water from the CBD, several agricultural drains, and Stone Corral Creek. The main water inputs to Colusa NWR are from the CBD and Powell Slough. In addition, an increase in level 4 water supply to the refuges is an ecosystem benefit of the Project. Please also see the response to comment 70-8.

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70-20	In 10.2.2.4 – It is incorrect to group the Colusa Basin Drain habitat with the TC Canal or the GCID Main Canal. The Colusa Basin Drain is historical habitat that dates back before European Settlement that includes two National Refuges downstream, thousands of acres of designated wetlands, extensive riparian natural levee on the west side of the channels and several islands within the channel of the Colusa Basin Drain. It also delivers water for the ecosystem that is unique to seasonal flooded areas both within the Delevan and Colusa National Refuges and all the wetland easement areas south of the Site. The Wildlife Resources representative for the Sacramento Valley National Wildlife complex https://www.fws.gov/refuge/Sacramento/habitats.html which includes Delevan and Colusa National Refuges is also representative of the riparian natural levee on the west side of the Colusa Basin Drain, the islands in its channel and the wetland easements on the west side of the Colusa Basin Drain.	The CBD is an earth-lined constructed channel more than 15 feet wide that is used for irrigation, and therefore was mapped as the "Canal" land cover type. Chapter 10, Wildlife Resources, and Appendix 10A, Wildlife Species Lists, Special-Status Wildlife Table, and Non-Listed Wildlife Species Accounts, identifies Canal, including the CBD, as suitable habitat for giant gartersnake, western pond turtle, and bank swallow, and a water source for special-status bats. Including the CBD in the "Canal" land cover type does not mean that it does not provide valuable habitat for wildlife.
70-21	There should be a discussion in 10.2.3 regarding the habitat for Vernal Pool Fairy Shrimp and Conservancy Fairy Shrimp at the seasonally flooded wetlands east of I-5 near the confluence of Funks Creek and Stone Corral Creek. If the winter flows are restricted too much because the flood waters are diverted to the Reservoir this habitat could be endangered. This habitat includes part of the Willow Creek – Lurline Wetland Management Area https://www.fws.gov/uploadedFiles/Region_8/NWRS/Zone_1/Sacramento_Complex/Sacramento/Uploaded_Files/Maps_and_Brochures/Location/Willow%20Creek%20Lurline%20WMA%20Location%20Map%202012.pdf As you can see from the Map, there is a portion of the Willow Creek – Lurline Management Area that is located where Funks Creek and Stone Corral Creek traverse I-5 and join before running into the Delevan National Wildlife Refuge and the Colusa Basin Drain. This type of habitat exists for the wetland easements and riparian areas of the Colusa Basin Drain.	Vernal pools are filled by precipitation and not by water from long-distance drainages. Stream-fed seasonal wetlands are not vernal pool habitat because these wetlands are changed by sediment from water flowing into or through them and are subject to periodic scouring in years of high flow, which is not conducive to the persistence of a system (i.e., vernal pool habitat) strongly dependent on buried seeds and the development of mature soils with clay subsoils (Keeley and Zedler 1998). Regarding the Project's potential effect on wetlands near the confluence of Funks and Stone Corral Creeks, the Project has the capacity to provide a range of releases to Stone Corral and Funks Creeks (0 to 100 cubic feet per second [cfs]), augmented by higher periodic pulse flows, if necessary, to maintain fluvial geomorphic processes in the stream channel, as described in the Water

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	The discussion regarding the impact on Vernal Pool Branchipods should consider the effect of limiting the flood flows from Funks and Stone Corral Creek due to the diversion of these Creeks into the Reservoir. These vernal pools exist on much of the two Refuges and wetland easements on the Colusa Basin Drain.	Operations section of Chapter 2, Project Description and Alternatives, of the RDEIR/SDEIS. Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, describes the technical studies (Stone Corral Creek and Funks Creek Aquatic Study Plan) that would help determine the release schedule and volumes, should releases be found necessary to comply with California Fish and Game Code Section 5937, a requirement that dam operators provide sufficient flow below dams to keep fish in good condition, as discussed in Section 11.2.7, Local Drainages, of Chapter 11, Aquatic Biological Resources. Section 2D.4.3, Flow Characterization and Geomorphic Study, in Appendix 2D describes the flow characterization and geomorphic study, which would confirm the appropriate operating regime, consistent with the commitment to not encroach on existing water rights or ecological function, including wetlands function. The study will be conducted prior to construction of dams on Funks and Stone Corral Creeks to establish the unaltered hydraulic regime and unaltered geomorphic conditions. While the flow plan developed based on that study will protect downstream water rights and ecosystem functions, including wetlands function, it will also achieve the flood control benefits identified for the Project, as described in the Water Operations section of Chapter 2.
70-22	Generally – the discussion regarding all fauna discussed in this Chapter should be done in context to the natural habitat provided by the Colusa Basin Drain. Parts of the Drain like the portions encompassed by the Delevan and Colusa National Refuges have habitat on both sides of the Drain. South of the Colusa Refuge there is a levee on the east side of the Drain but the area between the toe of the levee on the east side all the way to the wetland easements on the west side is abundant habitat for Wildlife Resources. This is particularly the case in the area north of College City where the historical confluence of Sycamore Slough and the Colusa Basin	As the commenter notes, the CBD has been highly modified over the years for the primary purpose of agriculture. As identified in Chapter 5, Surface Water Resources, Section 5.2.1.2, Conveyance Systems, in the CBD and Knights Landing Ridge Cut section, "The CBD is a human-made channel designed to convey agricultural return flows and storm runoff from the Colusa Basin to the Sacramento River or the Yolo Bypass, with direction of flow controlled by the Knights Landing Outfall Gates (KLOG) near the downstream end of the CBD." The CBD receives water from numerous sources, including Willow

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	Drain occurs. The was the historical confluence for the Sacramento River and the Colusa Basin Drain waterway before it was modified for Reclamation purposes.	Creek, Logan Creek, Bounde Creek, and various agricultural return flows. Due to the number of sources of water that are not associated with the Project, operation of the Project is not expected to affect the hydrology of the CBD nor the associated riparian and seasonal wetlands that provide habitat for wildlife. Similarly, no substantial effects would be anticipated on the Delevan or Colusa NWRs. Delevan NWR receives water from the CBD, several agricultural drains, and Stone Corral Creek more than 3 miles downstream of its confluence with Funks Creek. The main water inputs to Colusa NWR are from the CBD and Powell Slough. In addition, an increase in Incremental Level 4 water supply to wildlife refuges is an ecosystem benefit of the Project recognized and funded by the State.
70-23	The discussion in 11.2.2.2 regarding Nutrients and Foodweb Support should include a discussion regarding the Nigiri Project. https://www.nigiriproject.com/. The seasonal flooding on the Colusa Basin Drain is an important part of the Foodweb as illustrated by the findings of the Nigiri Project. To the extent that flood flows from Funks Creek and Stone Corral Creek are diverted the Foodweb highlighted in the Nigiri Project will be diminished especially regarding the seasonal wetlands and inundated riparian corridor along the Colusa Basin Drain.	A discussion of the Nigiri Project at Knaggs Ranch has been added to the Final EIR/EIS, as suggested by the commenter (see the reference to Katz et al. 2017 in Chapter 11, Aquatic Biological Resources, Section 11.2.4.3, Yolo Bypass, under Aquatic Habitat). Flows into the Nigiri Project come from the Knights Landing Ridge Cut and generally would be quite similar under the No Project Alternative and Alternatives 1, 2, and 3. For Final EIR/EIS CALSIM modeling, the differences in mean monthly Knights Landing Ridge Cut flows from December through April are generally less than 1%, except in December of Below Normal Water Years, when flows are up to 11% less under Alternatives 1, 2, and 3. Alternatives 1, 2, and 3 would not be expected to have any effect on the ability to operate the Nigiri Project.
70-24	Fish Passage and Entrapment – Page 11-16 Salmon are present in the Colusa Basin Drain and have become entrapped https://www.fws.gov/fieldnotes/regmap.cfm?arskey=33853	The link provided by the commenter no longer works. The page number (11-16) cited by the commenter pertains to fish passage in the Delta; presence of adult salmon in the CBD is discussed on page 11-30 in the RDEIR/SDEIS.

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70-25	Discussion regarding Funks and Stone Corral Creek Page 11-299. The area of the confluence of Funks and Stone Corral Creeks on the east side of I-5, this area includes a portion of the Willow-Creek- Lurline Wetlands Management Area. What is missing from discussion and from this Chapter generally is any discussion regarding the aquatic species that live in the Colusa Basin Drain. Salmon have been found in the Colusa Basin Drain. Local fisherman have fished for catfish on the Drain for years and Red Swamp Crayfish is abundant. Also missing from this discussion is the contribution to the Foodweb from seasonal flooding on the Colusa Basin Drain. The Colusa Basin Drain is ALIVE and is an important source of food for aquatic life in its channel but also downstream of Knights Landing where the confluence of the Colusa Basin Drain and the Sacramento River. Historically the confluence was via Sycamore Slough before Reclamation so wild life species have depended on the Colusa Basin Drain habitat since the end of the Great Valley Sequence. Since Reclamation the confluence is at Knights Landing but the importance of its habitat has existed for millions of years since the Great Valley Sequence made it the low lying waterway and wetlands for the west side of the Sacramento Valley.	In Chapter 11, Aquatic Biological Resources, the analysis focuses on the "stream reaches of interest." These are the reaches below the dam sites on Stone Corral Creek and Funks Creek and the point at which the creeks are integrated into the water delivery systems of GCID and TCCA. For Stone Corral Creek, this is the point at which it crosses the GCID Main Canal. Below this point, the creek is supplied with water for use on agricultural fields and receives drain water from those fields. For Funks Creek, it is the point at which it enters Funks Reservoir. Below the reservoir, the creek is sustained by seepage from the Funks Reservoir dam, and, below the GCID Main Canal, it also receives water for delivery and drain water from agricultural fields. In addition, Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, Section 2D.4, Stone Corral Creek and Funks Creek Aquatic Study Plan and Adaptive Management, describes an Aquatic Study Plan and adaptive management plan for Stone Corral and Funks Creeks. These studies will evaluate fish resources in the creeks and update information on flow and geomorphology of the creeks. The goal of these studies is to update information of fish presences, habitat uses, and habitat quality to ensure decision regarding maintenance of these streams is consistent with regulatory requirements including California Fish and Game Code Section 5937. Please see Master Response 5, Aquatic Biological Resources, regarding maintaining flows in Funks and Stone Corral Creeks. The CBD is maintained by agricultural return flows and flow from several other westside streams (e.g., Hunters Creek, Freshwater Creek, Salt Creek, and Cortina Creek). The flow in Stone Corral and Funks Creeks is not expected to affect resources in the CBD. Although salmon have been found in the CBD, the CBD is not suitable habitat for salmon. There is no suitable spawning or rearing habitat in the CBD, and there is no return to the Sacramento River from the CBD

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		upstream of the Knights Landing Outfall. The fisheries agencies are actively pursuing actions to exclude salmon from the CBD (e.g., Wallace Weir fish facility) (National Marine Fisheries Service 2014).
70-26	Chapter 12 Comments – Geology and Soils Section 12.2 is missing a discussion regarding the geologic issues associated with the geologic development of the Sacramento Valley as an archetypal forearc basin https://pubs.geoscienceworld.org/gsa/geology/article/47/8/757/571454/The-birth-ofa-forearc-The-basal-Great-Valley The geology at the Reservoir Site has a complex geological structure due to the existence of the subduction zone beneath and around the Site. The Site is near a border of ophiolitic rocks and the deposits of the Great Valley Sequence – See Figure 1 from McDowell [(Glaucophane schists and ophiolites of the northern California Coast Ranges: Isotopic ages and their tectonic implications" by F.W. Mc Dowell et.al (1984) https://pubs.geoscienceworld.org/gsa/gsabulletin/articleabstract/95/11/1373/189453/Glaucophane-schists-and-ophiolites-of-the-northern?redirectedFrom=fulltext)]. Also reference in McDowell is the unique development of the subduction zone near Goat Mountain to the west of the Site and the area near the town of Paskenta to the north. The Sites Reservoir is located in the Northern or Sacramento Valley Belt of Coast Range Ophiolites https://pubstest.er.usgs.gov/publication/70026861 which have been largely influenced by the historical development of the subduction zone caused by the collision of the Pacific and North American plates. This context is necessary to adequately assess future earthquake risk on the structure itself but also assess the risk of groundwater quality contamination caused by seepage and hydraulic head from the stored water in the Reservoir.	The commenter expresses several concerns related to the adequacy of descriptions of the seismotectonic setting, including the geologic development of the Sacramento Valley and Coast Range, the presence of the Great Valley Sequence and the Coast Range ophiolite, and the presence of the subduction zone, based on papers by McDowell et al. (1984), Shervais et al. (2004), and Orme and Surpless (2019). The seismotectonic evaluation by William Lettis & Associates (2002) describes and considers the tectonic development of the region (see Chapter 3.0, Neotectonic Characterization of Geologic Structures, of the William Lettis & Associates report), including the ancestral forearc basin, the Coast Range, the Cascadia subduction zone, the stratigraphy of the Great Valley Group, and the region's structural geology. It also describes the site-specific fault studies and kinematic model used in the analysis. The RDEIR/SDEIS references the site-specific studies conducted by William Lettis & Associates (2002) and incorporates the level of detail in the setting needed to understand the impact analysis. See, for example, Figure 12-3 in Chapter 12, Geology and Soils, which provides a geologic cross section and includes the Coast Range Ophiolite and Great Valley Thrust Fault. In addition, the papers cited by the commenter do not appear to present new seismic-related information but rather focus on the stratigraphy and chronology of the formation of Coast Ranges, which occurred more than 65 million years ago during the Mesozoic Era. Also, as described in the RDEIR/SDEIS, William Lettis & Associates (2002) conducted extensive seismotectonic studies in the vicinity of the proposed dams, and additional geotechnical information will be incorporated into the Project design as further studies are conducted

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		(Chapter 2, Project Description and Alternatives, Geotechnical Investigations). Therefore, these reports provide the context necessary to assess earthquake risk in the Project area and are suitably summarized in the RDEIR/SDEIS for the purposes of CEQA and NEPA. The commenter also expressed concern about groundwater quality if contaminated groundwater were to seep along faults under the reservoir. However, in the geologic feasibility report for the Project (California Department of Water Resources 2003b:32), DWR indicates that fault GG-2 may be acting as a groundwater barrier, and the springs near Golden Gate are a surface expression of the groundwater exiting downgradient of the fault. Also as described in Appendix 8A, existing groundwater quality in the Funks Creek and Antelope Creek Basins is fair, with a high mineral content measuring up to 2,190 µmhos/cm and TDS ranging up to 1,291 milligrams per liter. These groundwater basins are largely shallow (generally less than 100 feet below ground surface) alluvial deposits with limited groundwater resources based on poor water-bearing and water quality characteristics (California Department of Water Resources 2020:1; see also Chapter 12, Geology and Soils). Project operations would completely inundate these basins. This inundation is expected to improve local groundwater quality and reduce the existing salinity because the "weight of the reservoir could force additional percolation of surface water into the reservoir soils, resulting in higher quality surface water seeping into the reservoir floor and the shallow groundwater layer" (see the Alternatives 1, 2, and 3, Operation, Reservoirs section of Impact GW-1 in Chapter 8, Groundwater Resources).

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70-27	Table 12-2 and Figure 12-4. The Paskenta and Willows Fault needs to be included in the scope of this Chapter [12]. This is an important fault affecting potential movement of natural occurring contaminants and possible could be impacted by the extra hydraulic gradient from the Sites stored water aggravating the artesian and upconing gradient that already exists in the groundwater aquifer in the Colusa Subbasin. [(https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CSPA%20et%20al/part2/aqua_246.pdf)] The anticline near the recent Hamilton City earthquake should also be included https://earthquake.usgs.gov/earthquakes/eventpage/nc73545750/executive since this is the most recent land based earthquake near the Site.	In response to concerns brought up in this comment, Table 12-2 in Chapter 12, Geology and Soils, of the Final EIR/EIS has been modified to include the southern reach of the Corning Fault (which is interpreted to either splay from or terminate against the Willows Fault [William Lettis & Associates 2002:3-136]), and a new figure (Chapter 12, Geology and Soils, Figure 12-6) has been added to show the major structural features in the region and the site-specific faults mapped in the study area, as described by William Lettis & Associates (2002:Plate 1). This figure shows both the Paskenta and Willows Faults. In regard to the portion of the comment about the Paskenta and Willows Faults and their role in the movement of contaminated groundwater, based on the seismotectonic evaluation (William Lettis & Associates 2002), these faults do not appear to provide a conduit between the reservoir area and the Central Valley. William Lettis & Associates concludes that the Paskenta Fault does not project as far south as the Orland Buttes, does not connect or directly relate to the Willows-Corning Fault, and is 25.5 miles from the Sites and Golden Gate Dam sites at its closest approach (3-127, A-19). The seismotectonic evaluation also does not appear to show a connection between the reservoir area and the Corning-Willows Fault, as shown in Figures 2-2 to 2-4 of the William Lettis & Associates report. In addition, as stated in response to comment 70-26, in the geologic feasibility report for the Project (California Department of Water Resources 2003b:32), DWR indicates that fault GG-2 likely acts as a groundwater barrier. Stored water in Sites Reservoir is also not likely to negatively affect groundwater in the Central Valley because, as described by Ferriz (2001:19-22), the primary source of recharge is from surface water sources along the edges of the valley, such as

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		streams in the Coast Ranges, Cascade Range, and Sierra Nevada, with infiltration by precipitation being a secondary source. In regard to the portion of the comment about the Hamilton City earthquake, the earthquake that occurred on April 4, 2021, was a magnitude 1.8 (USGS 2021). As described by the Incorporated Research Institutions for Seismology (2011) website and associated factsheet, which are cited on the USGS (2022) informational page on earthquake magnitude, energy release, and shaking intensity, several hundred earthquakes magnitude 2 and smaller occur every day worldwide. These small earthquakes are not generally perceptible to humans. As described in the RDEIR/SDEIS, the new GCID Main Canal head gate structure that would be installed approximately 0.25 mile downstream of the Hamilton City Pump Station would be built to conform to seismic design criteria, such as the California Building Standards Code regulations for structures, and therefore would not be affected by these types of earthquakes.
70-28	Chapter 16 Comments – Recreation Resources Figure 16.1 should include the towns of Leesville, Lodoga and Stonyford since they are important bases for eco-exploration, eco-tourism and cultural heritage appreciation. These towns and the roads between them provide a great source of recreation and historical appreciation of the pioneer history of Colusa County. It is hard to believe that Figure 16.1 does not include the National Monument and National Forest adjacent to the Site. The south east part of Mendocino National Forest has several sites which are to the west of Stonyford	Figure 16-1 in Chapter 16, Recreation Resources, does not purport to only show recreational areas in the study area (the figure is labeled "...Recreation Near the Study Area") and provides an overview of the region surrounding the Project area and other recreational areas in this region. It covers a broad area from the San Francisco Bay north to beyond Shasta Lake. At this scale, only major urban areas are identified, not the smaller towns. While Leesville, Lodoga, and Stonyford are important from a recreational standpoint, recreational resources in these towns do not receive water from SWP or CVP facilities and therefore would not be affected by the Project. The figure focuses on recreational areas in the study area, as defined in Chapter 16, Section 16.1, Introduction, because these areas are identified as being potentially affected by the Project. Likewise, the

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	https://www.fs.usda.gov/recarea/mendocino/recreation/hiking/recarea/?recid=25250&actid=50	Mendocino National Forest and Berryessa and Snow Mountain National Monument have been added to the text, as they are of regional importance from a recreational standpoint; however, they have not been added to the figure because they were excluded from the study area. As described in Chapter 16, they do not receive water from SWP or CVP facilities and therefore would not be affected by the Project.
70-29	There are several recreational sites accessible from Stonyford to the Berryessa and Snow Mountain National Monument. These are highlighted on the North Map https://www.blm.gov/sites/blm.gov/files/docs/2021-04/BSMNM_Brochure_508_small.pdf There should be an extensive discussion of the Berryessa and Snow Mountain National Monument in this Chapter and a discussion on the recent expansion and future expansion possibilities. https://www.blm.gov/programs/national-conservationlands/california/berryessa-snow-mountain-national-monument	The national monument would not be affected by Project construction or operations. As addressed in Chapter 16, Recreation Resources, Project construction would not result in increased use of the national monument that would cause new or accelerated substantial physical deterioration of those facilities because there are no national monument recreational facilities in the construction areas. Recreation use at Sites Reservoir could result in a minor reduction in recreation use, at least initially, at other regional reservoirs and the national monument, and therefore Project operation would not result in increased use of existing recreational facilities in the national monument that would cause new or accelerated substantial physical deterioration of those facilities. In addition, there would be no perceptible change in water levels at the monument that would affect its use or enjoyment. The study area for the analysis of impacts resulting from the operation of the Project on recreational resources is defined in Chapter 16, Recreation Resources, of the RDEIR/SDEIS as regional SWP and CVP reservoirs (i.e., Shasta Lake, Lake Oroville, Folsom Lake, San Luis Reservoir); rivers downstream of SWP and CVP reservoirs; and recreational facilities or areas in the region, such as the Sutter and Yolo Bypasses and wildlife

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		areas and wildlife refuges, that receive water from SWP or CVP facilities. The national monument was excluded from the study area as it does not meet any of these criteria and is not hydrologically connected to the water management system that would be affected by the Project. In addition, the Berryessa and Snow Mountain National Monument recreation sites identified on the map at the provided URL are all at least 10 miles from the Project footprint, and neither access to these sites from Stonyford nor the use of these areas would be restricted, impaired otherwise impacted from construction or operation of Sites Reservoir. No information is provided in the comment to support any added discussion on how Sites Reservoir would affect future expansion possibilities of the monument.
70-30	Chapter 30 Comments - Environmental Justice and Socioeconomics There should be a discussion about the SWRCB DEI Resolution and the DWR HRTW requirements and how these State Agencies policies and requirements should be implemented in the economic opportunity from the construction of the project, recreation access from the process and the necessary protection from groundwater quality degradation from the Project.	Refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the relationship of the Project with other plans, programs, policies, and agencies. The Authority and Reclamation are the lead agencies with discretionary decision-making authority over the Project, and other agencies' internal policies and initiatives do not apply to the Project. Chapter 32, Other Required Analyses, Section 32.2.2, Construction, identifies that there would be benefits to local and regional economies associated with increased jobs during Project construction. Appendix 30A, Regional Economic Modeling, presents analysis related to job creation during construction. Recreational facilities included in the Project and alternatives are discussed in the Final EIR/EIS in Chapter 2, Project Description and Alternatives, Section 2.5.1.6,

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		Recreation Areas. These facilities would increase recreational opportunities in the region. Recreation impacts are further discussed in Chapter 16, Recreation Resources. Potential impacts on groundwater quality are discussed in Chapter 8, Groundwater Resources. As described in Chapter 8, the Project would not result in substantial groundwater degradation compared to the No Project Alternative/No Action Alternative.
71-1	I am submitting my comments on the Draft Environmental Report for the Sites Reservoir Project ("ER") on behalf of my family and with the objective of raising long term issues of concern for the people, environment and economy of Colusa and Glenn Counties. My family has been farming since 1860 in Colusa County and own property with historical ownership dating back to 1860 on the Colusa Basin Drain north of the town of College City.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS.
71-2	I want to make it clear that I support the Sites Project because its water storage is needed for the State of California but my concern is that important issues could be overlooked that could have serious long term environmental consequences since many local stakeholders have not been involved in the consideration of this historical project for Colusa and Glenn Counties. As you know, the Covid 19 pandemic has suppressed many social interactions including the public engagement for the Sites Reservoir project. Additionally many local stakeholders have what can best described as expectation fatigue whereby there is much skepticism that the Project will ever be completed and therefore many potential stakeholder comments have been likely suppressed due to the lack of confidence that the project will be completed.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for a discussion of commenter support for the Project and a discussion of public outreach and engagement. Master Response 1 also discusses the Authority's and Reclamation's process for considering and potentially approving the Project.
71-3	It takes a significant amount of time to comment and engage with a project of this magnitude and many have engaged and commented only to see the project not to move forward. This is a very important project for the State and the most important project in history for Colusa and Glenn Counties and that is why I have taken the time to comment. Again – I hope the	The commenter's support for the Project is appreciated and noted.

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	project is completed but I also hope that it is done the right way with win/win outcomes for both the State and the long term vitality and prosperity for Colusa and Glenn Counties and its residents.	
71-4	The Recent Racial Equity, Diversity, Inclusion, Access and Anti-Racism Resolution ("DEI") (SWRCB Resolution No. 2021-0050) of the SWRCB should be considered and incorporated into the EIR/EIS and well as the DWR's adoption of the State of California objectives in the Human Right to Water ("HRW") which was recently incorporated in the DWR Handbook. 78. A. The DEI and HTW objectives of the SWRCB and HTW of the DWR are particularly important to the stakeholders of Colusa and Glenn Counties due to the recent trends in the availability of fresh drinking water and in deteriorating water quality. • Tehama, Glenn and Colusa residents reported over 200 dry domestic wells in 2021 (See https://calmatters.org/environment/2021/08/california-groundwater-dry/), the Cities of Orland and Willows faced water supply challenges and the City of Williams reported that one of its public supply wells ran dry in 2021 (A City of Williams Member on the Colusa Groundwater Authority reported that one of its public supply wells ran dry in an August 2021 Meeting https://colusagroundwater.org/mdocs-posts/2021_08_24-cgaboard-meeting-minutes_final/) • The public supply systems for Maxwell currently have high TDS levels and face potential increases in TDS levels from the upward movement of groundwater with high TDS levels due to the common occurrence of upconing groundwater in the Colusa Subbasin. One of the wells for the Williams public supply system recently reported a TDS level of 790 and the public supply wells for both Maxwell and Williams which lie at the foot of the proposed reservoir have recorded TDS observations from 500 to 800 in recent years. The public supply system for the residents of	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the State Water Resources Control Board's DEI resolution and California Department of Water Resources' (DWR's) Human Right to Water (HRTW), as cited by the commenter. Master Response 1 discusses the Authority's and Reclamation's commitments to the principles of diversity, equity and inclusion. Please see also Chapter 1, Introduction, regarding the purpose, need, and objectives for the Project. Please see Chapter 8, Groundwater Resources, regarding the potential for impacts on groundwater wells as a result of construction or operation of the Project. As described in Impact GW-1 (violation of water quality standards or waste discharge requirements or otherwise substantial degradation of groundwater quality), the Project would have a less-than-significant impact on groundwater quality. Appendix 8A, Groundwater Resources Basin Setting, identifies an ongoing decline in groundwater levels within the Colusa Subbasin due to multiyear drought conditions, which resulted in land subsidence in the northern and southern portions of the subbasin. The subbasin designation is set as a high priority under the Sustainable Groundwater Management Act (SGMA). Therefore, groundwater sustainability is a known concern for the subbasin with groundwater sustainability projects and management actions required under the SGMA (§ 356.2.c). The conditions described in Chapter 8 and Appendix 8A constitute the baseline conditions. Chapter 8 identifies that impacts would be less than significant regarding water quality standards, waste discharge requirements, or degradation of

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	Grimes has arsenic contamination levels of approximately 25 Ug/L. These water quality challenges are most likely due to the upconing of high TDS connatewater from deeper levels in the aquifer in combination of aggravated redox chemical reactions as increased groundwater pumping and deeper wells bring previously anerobic groundwater into contact with oxygen causing the desorption of naturally occurring contaminates like arsenic and/or just drawing saltier water into the supply system aquifer. B. The DEI and HTW policies and objectives are also important from the perspective of Equity in general. Federal and State taxpayers will be allocating billions of dollars to bring fresh water to urban areas south of the areas of origin in the Sacramento Valley where public funds have been spent to provide conjunctive supply systems. The public supply systems in Tehama, Colusa and Glenn Counties are exclusively dependent on groundwater and currently faced both supply and water quality resiliency challenges that will be benefited by the water storage and supply from the Sites project. It is conceivable and probable that while there may not be enough clean drinking water for the City of Williams in the next 50 years that cities in Southern California will have access to clean drinking water stored less than 10 miles to the north west of Williams by virtue of the publicly subsidized water storage and water conveyance infrastructure of the Sites Reservoir. This seems fundamentally unfair and will result in a disproportionate impact on the primarily minority residents of affected Cities like the City of Williams. Now is the time to guarantee the HTW and DEI protections by using the Sites infrastructure for a water filtration system that can provide the public supply systems in Tehama, Glenn, Colusa and Northern Yolo County with conjunctive access to the surface water from the Sacramento River via a filtration system and pipelines that could be installed next to the Tehama Colusa Canal or the HWY 99 roadway that connects all	groundwater quality; decrease in groundwater supplies or substantial interference with groundwater recharge; or conflict with or obstruction of a sustainable groundwater management plan as described in detail in that chapter. The Authority and Reclamation recognize the ongoing multiple groundwater concerns across the State of California and recognize that SGMA was passed and is being implemented as a regulatory framework to protect groundwater resources. However, the Project was determined based on evidence in Chapter 8 and the Chapter 8 supporting appendices to have less-than-significant impacts on groundwater resources. Please see response to comment 70-14 regarding the redox chemical reactions and water quality issues related to groundwater basins. Water filtration systems and conveyance infrastructure are not part of the Project and not required as mitigation for groundwater impacts because no significant impacts on groundwater would occur. The socioeconomic effects associated with construction in the local and regional area have been evaluated in Chapter 30, Environmental Justice and Socioeconomics. As identified in Chapter 2, Project Description and Alternatives, and Appendix 2C, Construction Means, Methods, and Assumptions, local workforces will be considered for construction contracting purposes. In addition, local and regional economic effects were evaluated in Chapter 30 under operating conditions, primarily with respect to the recreation areas of the alternatives. It is expected the local and regional economy would benefit as a result of the operation of the reservoir. As described in Chapter 2 and evaluated throughout the EIR/EIS, Alternatives 1 and 3 include a bridge across the reservoir, whereas

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	of these communities. This could be incorporated with broadband infrastructure projects and electrical transmission line upgrades to optimize the resources spent on excavation and infrastructure. C. DEI policies and objectives should also address the distribution of economic opportunity from the construction of the project but also public ease of travel and access to current and future recreational facilities surrounding the Sites project. Construction jobs and contractor opportunities should be offered and solicited from local residents and especially minority residents who are people of color. There should be public workshops regarding jobs and contracting opportunities. Public access to the communities surrounding Sites such as Leesville, Lodoga, and Stonyford should be as easy and short as possible to offer ease of access especially for local residents who are likely to have less economic resources to travel longer distances. There also should be ease of access to current and future recreational areas including the Colusa and Glenn County portions of the Berryessa Snow Mountain National Monument.	Alternative 2 includes a road around the southern end of the reservoir. Significant and unavoidable impacts associated with Alternative 2 as a result of the road have been disclosed in various chapters (e.g., Chapter 18, Navigation, Transportation, and Traffic; Chapter 14, Land Use; and Chapter 30). The Authority and Reclamation acknowledge in the various impact analyses the longer travel time with respect to the Alternative 2 road. The Authority and Reclamation will determine whether, and if so how, to approve the Project or an alternative, after completion of the Final EIR/EIS. Please see response to comment 71-29 regarding Berryessa Snow Mountain National Monument.
71-5	Chapter 3 comments – Environmental conditions The operation of the Sites Reservoir is likely to affect future water supply and groundwater quality in the Colusa Subbasin if it promotes more water transfers and related groundwater substitution extractions from the aquifer. The California Water Commission is likely to approve inbasin groundwater trading which also could lead to more groundwater pumping especially in areas where deep wells are needed to achieve desired pumping volumes and where groundwater quality may be sacrificed for water quantity. The unique aspect of concern for the operation of the Sites Reservoir is it provides a physical connection between inbasin surface water transfers and surface water export sales by Settlement Contractors. With the ability to store and deliver water via the Tehama Colusa Canal and the Glenn Colusa	It is unlikely in-basin or out-of-basin transfers that involve groundwater substitution would increase as a result of the Project. These transfers can already occur with existing infrastructure. Out-of-basin transfers can occur by forgoing diversions from the Sacramento River. For example, GCID has transferred water to EBMUD by this mechanism (State Clearinghouse 2015). Water transfers within the Colusa Subbasin area are already possible using existing infrastructure. There is a 1,000-cubic feet per second (cfs), gravity-fed intertie connecting GCID Main Canal and TC Canal north of Funks Reservoir and a cross tie south of the city of Williams. Please see Chapter 5, Surface Water Resources, Section 5.2.1.2, Conveyance Systems, for more details regarding connectivity of the Colusa Basin canal system. In-basin water transfers to Tehama-Colusa Canal

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	Irrigation District facilities surface water sales become fungible whether or not it is from a diverter on the Sacramento River in the Colusa Subbasin or from stored water in Sites that ultimately be delivered via the Tehama Colusa Canal and the Dunningan interconnect via the Colusa Basin Drain into the Sacramento River downstream. There is also economic incentive to engage in water quality arbitrage whereby fresh water is sold from the Sacramento River and salty groundwater is pumped via a groundwater substitution well or otherwise. The control over the conveyance system into Sites which ultimately makes its way back to the Sacramento River via the Dunningan interconnect would allow degraded quality groundwater to be blended in route to inbasin use or exported using the conveyance system to blend. There should also be some consideration how the likely development of inbasin groundwater trading may lead to overpumping and groundwater quality degradation since the Sites Reservoir may be a storage and water market transfer clearinghouse for Sacramento Valley water transfers.	Authority (TCCA) members have been proposed in response to 2022 drought conditions using connections between the TCCA and GCID service areas or by reduction in Settlement Contractor diversions, depending on seller's location (Bureau of Reclamation and Tehama-Colusa Canal Authority 2022:2-6). Transfers are controlled by both environmental regulations and SGMA (e.g., Colusa Subbasin Groundwater Sustainability Plan (GSP) [Davids Engineering, Inc. et al. 2021]). As described in Chapter 8, Groundwater Resources, Impact GW-2, and Appendix 8B, Groundwater Modeling, the Project is likely to improve shallow groundwater conditions along the western margins of the Colusa Subbasin as a result of seepage from Sites Reservoir. In addition, groundwater pumping in the subbasin may decrease due to increased surface water supply during periods of drought.
71-6	Chapter 3 comments – Environmental conditions The comments on Page 3-3 regarding the relative slow growth of the Colusa and Glenn communities seems to contrary to the State of California's objectives for DEI economically focused economic opportunity and a reasonable affordable housing policy. Just because an area has had slow growth in the past it does not justify condemning an area to be an economic wasteland especially since it is the area of origin for most of the State's water resources and offers the best opportunity to meet the State's affordable housing objectives. For example, the City of Williams has grown significantly in the past decade and faces challenges to its water resiliency because it does not have access to the same Sacramento Surface water that Sites will store. The ER should consider the State's housing and affordable housing and DEI housing and economic policies when making these statements.	Chapter 3, Environmental Analysis, explains and defines the environmental baseline and No Project Alternative/No Action Alternative for the purposes of CEQA and NEPA compliance. This chapter identifies that "the physical environmental setting and land uses in Glenn and Colusa Counties, where the reservoir would be located, are not expected to materially change under the No Project Alternative." Chapter 3 is not intended to pass judgement on the growth in the area as the commenter suggests. As identified in Chapter 30, Environmental Justice and Socioeconomics, Impacts SOC-1 and SOC-2, the regional and local economies are expected to experience positive economic effects under the different alternatives associated with construction and operation of the Project. These positive economic effects are attributed to increased labor income and jobs in Glenn and Colusa Counties during construction and due to operation and maintenance of the associated facilities and

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		recreational areas compared to the No Project Alternative. However, despite the economic benefits, the Project is not expected to change the environmental justice and socioeconomic baseline conditions. The Project would not affect the city of Williams water supply. Construction and operation of the Project would also not result in substantial displacement of people or housing and would not necessitate the construction of extensive replacement housing elsewhere. Potential impacts on housing are addressed in Chapter 25, Population and Housing.
71-7	Chapter 3 comments – Environmental conditions The EIR/EIS does not acknowledge the cultural assets that come with the areas 150 year historical heritage or its rich ecological resources that are being increasing used for ecotourism and ecofriendly stakeholders. The area surrounding the proposed site encompassing the historical towns or Leesvile, Lodoga and Stonyford which have a rich pioneer heritage and current ranching related activities. Wilbur Springs has become a eco-focused resort and is used as an access point for many who want to enjoy the surrounding natural points of interest. Most importantly there does not appear to be any mention of the increased use of the Mendocino National Forest and/or the northern portion of the Berryessa Snow Mountain National Monument which has recently expanded and could expand more in the future. The access to Leesville, Lodoga and Stonyford is important to provide access for public use of the National Monument and National Forest.	The EIR/EIS describes the Antelope Valley in numerous chapters including Chapter 15, Agriculture and Forestry Resources, which acknowledges the current grazing activities, and Chapter 22, Cultural Resources, that discusses cultural resources. As identified in Chapter 2, Project Description and Alternatives, Alternatives 1 and 3 would include a bridge across Sites Reservoir providing east/west access between Lodoga and Maxwell. Alternative 2 would include a road around the south side of Sites Reservoir also providing east/west access between Lodoga and Maxwell. Therefore, access to resources to the west of the reservoir (e.g., National Monument and National Forest) would still be maintained. These resources are outside of the study area for the reservoir because these resources would continue to exist and would not be affected by the reservoir.
71-8	Chapter 3 comments – Environmental conditions The EIR/EIS does not address the loss of seasonal flooding that comes with historical flows from Stone Corral and Funks Creek. The confluence of these two Creeks occurs in the general wetland area and within part of the Willow	As described in Water Operations in Chapter 2, Project Description and Alternatives, operation of the Project would provide a base flow of between 0 and 100 cfs to Stone Corral and Funks Creeks, augmented by higher periodic pulse flows to maintain fluvial geomorphic processes in the stream channel. As discussed in Local

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	Creek – Lurline Wetland Management Area just west of the Delevan Nation Refuge and provides the historical flooding for seasonal wetlands outside the Delevan Refuge and the Colusa Refuge downstream. In addition there is substantial acreage set aside for seasonal wetlands in the western flood zone of the Colusa Basin Drain that provide food biomass for fish and aquatic species when the flood waters makes its way down the Colusa Basin Drain to the Sacramento River and it also provide vernal pool habitat and other benefits to the flora and fauna that are located in the riparian area of the Colusa Basin Drain. The riparian areas are important habitat for both the Delevan and Colusa Refuges but also downstream which was the historical confluence of the Sacramento River and Sycamore Slough. This area now provides a rich habitat for flora and fauna on the natural levee on the westside of the Colusa Basin Drain and the islands located in the channel of the Drain. Seasonally the flooding provides regenerative life to the seasonal flood zone. The EIR/EIS does not seem to consider how the diversions from Funks Creek and Stony Creek may affect these flows especially in dryer years where flood events may not happen as often over a water year cycle.	Drainages in Chapter 11, Aquatic Biological Resources, this proposed flow would be in compliance with California Fish and Game Code 5937, a requirement that dam operators provide sufficient flow below dams to keep fish in good condition. In addition, this flow would be consistent with the hydrological record from a USGS stream gage that operated on Stone Corral Creek near the town of Sites from April 1958 to September 1975. Given the age and limited amount of flow data provide by that gage, the Flow Characterization and Geomorphic Study in Section 2D.4.3 of Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, discusses a flow characterization and geomorphic study to confirm the appropriate operating regime consistent with the commitment to not encroach on ecological function, including wetlands function. The study will be conducted when access to necessary areas can be obtained and before construction begins to inform the Project design as needed. While the flow plan developed based on that study will protect downstream ecosystem functions, including wetlands function, it will also achieve the flood control benefits identified for the Project, as described in Water Operations in Chapter 2.
71-9	Chapter 7 - Fluvial Geomorphology The description of the Colusa Basin Drain on 7.2.4 should highlight that the Colusa Basin Drain is the source of seasonal surface water supplies from winter floods for the Delevan National Refuge and Colusa National Refuge and the native islands and wetlands south of the Colusa National Refuge. It is wrong to state that the whole area has been modified because the reclamation levee starts south of the Colusa National Refuge and because the area west of the Levee is similar to its natural state before settlement and contains islands with natural habitat in the channel of the Colusa Basin Drain but also on the natural levees and flood zone on the west side of the	Refer to Appendix 7A, Fluvial Geomorphic Setting Information, where additional information was available in the RDEIR/SDEIS regarding fluvial geomorphology. Chapter 7, Fluvial Geomorphology, referred the reader to this appendix in the RDEIR/SDEIS. The information in Appendix 7A, Section 7A.4, Colusa Basin Drain, focuses on the sediment regime of the Colusa Basin Drain (CBD). A brief description regarding seasonal CBD contributions to natural areas has been added. The hydrologic characteristics of the CBD and Knights Landing Ridge Cut are described further in Chapter 5, Surface Water Resources, Section 5.2.1.2, Conveyance Systems. Please see response

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	channel. Please refer to the map of the habitat for the Colusa National Refuge which is representative of the riparian habitat on the west side of the Drain and its islands and the area of seasonal flooding for the wetlands on the west side of the Drain south of the two Refuges https://www.fws.gov/uploadedFiles/Region_8/NWRS/Zone_1/Sacramento_Complex/Sacramento/Uploaded_Files/Maps_and_Brochures/Habitats/Colusa%20NWR%20Habitat%20Mgt%20201213.pdf	to comment 71-22 regarding flows and habitat in the CBD, Delevan National Refuge, and Colusa National Refuge.
71-10	Chapter 8- Groundwater Resources This Chapter relies on dated research for groundwater quality in the Colusa Subbasin. It relies on the work from Berkstresser which was done in 1973 which has elevated assumed levels for EC and TDS to determine Base to Fresh Water ("BFW") Assumptions. The reliance on Berkstresser does not reflect the most recent understanding of BFW and groundwater quality in the Sacramento Valley but more importantly does not provide the necessary information for the State to carry out its policy objectives for HRW and DEI concerns. The public supply system for all the impacted communities rely exclusively on groundwater and future trends in groundwater quality is paramount. Additionally the ER should be updated to discuss the loss of drinking water resources that was experienced during this last drought due to the failure of several hundred domestic wells and at least one public supply well. [(https://colusagroundwater.org/mdocs-posts/2021_08_24-cgaboard-_meeting-minutes_final/)].	The Berkstresser (1973) report was utilized solely for range to freshwater depth within the Sacramento Valley in Section 8A.2.3, Sacramento Valley Groundwater Basin, of Appendix 8A, Groundwater Resources Basin Setting. Specific groundwater depth from Colusa subbasin was determined using DWR's Bulletin 118-03 (California Department of Water Resources 2006). Groundwater quality conditions within the Colusa Basin were determined using the Groundwater Ambient Monitoring and Assessment Program's Groundwater Information System (California Water Boards 2020). Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding general methods and modeling. Chapter 30, Environmental Justice and Socioeconomics, Effect EJ-1 discusses effects on minority populations from construction and operation of the Project. Effect EJ-2 discusses effects on low-income populations from construction and operation of the Project. Assembly Bill 685, the Human Right to Water, and the State Water Resources Control Board Diversity, Equity, and Inclusion Resolution are discussed in Master Response 1. The April 2022 Colusa Subbasin GSP, Annual Report (Davids Engineering, Inc. and West Yost 2022) is now included in Section

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		8A.2.3.3, Colusa Subbasin (5-021.52), of Appendix 8A of the Final EIR/EIS. RDEIR/SDEIS Appendix 8A acknowledged an ongoing decline in groundwater levels within the Colusa Subbasin due to multiyear drought conditions that resulted in land subsidence in the northern and southern portions of the subbasin. The appendix also noted that the subbasin designation is set as a high priority under the SGMA (California Department of Water Resources 2020b). Therefore, groundwater sustainability is a known concern for the subbasin, with implementation of groundwater sustainability projects and management actions required under the SGMA (California Department of Water Resources 2020b:Section 356.2.c). The information added to Appendix 8A does not affect or change determinations made in Chapter 8, Groundwater Resources, Section 8.4, Impact Analysis and Mitigation Measures.
71-11	Chapter 8- Groundwater Resources The DWR has developed new BFW contour maps which should be relied on for the EIR/EIS. Fresh groundwater is defined by the DWR as containing less than 1,000 mg/total TDS and approximately 1,550 umhos/cm specific conductance instead of the 3,000 umhos/cm used in Berstresser. According to the DWR the BFW is an uneven boundary that in some places reflects major geologic structures underlying the Sacramento Valley, and in other areas, transgresses underlying geologic structures. In some areas, the BFW boundary is well above the base of post-Eocene marine strata. According to the DWR, this is most likely caused by high artesian pressure and upward vertical gradients in deep aquifers in the Sacramento Valley, which has been documented in DWR monitoring wells, including the most recent multi completion monitoring well north of Arbuckle on Hahn Road. The DWR research suggests that migration of poor quality water into continental sediments that previously contained fresh water has occurred over geologic	The Berkstresser (1973) report was not used to determine primary maximum contaminant level (MCL) exceedances for groundwater drinking water within the study area. Determination of primary MCL exceedances within Antelope Creek and Funks Creek Basins and Colusa, Red Bluff, and Yolo Subbasins was based on NODOS GW Quality Study Data (California Department of Water Resources 2007) and the Groundwater Ambient Monitoring and Assessment Program's Groundwater Information System (California Water Boards 2020). Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding general methods and modeling. The Berkstresser (1973) report was not used to determine primary MCL exceedances for groundwater drinking water within the study area. Determination of primary MCL exceedances within Antelope Creek and Funks Creek Basins and Colusa, Red Bluff, and Yolo

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	time. The DWRs findings is the basis for my concern about water quality and its implications for brackish and saline upconing beneath areas of prolonged groundwater pumping in the Colusa Subbasin and Sacramento Valley generally. Https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CSPA%20et%20al/part2/aqua_246.pd	Subbasins was based on NODOS GW Quality Study Data (California Department of Water Resources 2007) and the Groundwater Ambient Monitoring and Assessment Program's Groundwater Information System (California Water Boards 2020). Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding general methods and modeling. Groundwater recharge within the Central Valley is primarily from surface water sources along the edges of the valley, such as streams in the Coast Ranges, Cascade Range, and Sierra Nevada, with infiltration by precipitation being a secondary source. Generally, surface water enters the aquifer system at these valley edges where the hydraulic head in shallow water-table aquifers is greater than the head in deeper confined aquifers, resulting in a downward direction of infiltrating surface water, or percolation (Ferriz 2001). Under Project operations, surface water reliability is expected to increase within the Sacramento Valley. As noted in Chapter 5, Surface Water Resources, "On average, CVP and SWP deliveries are expected to increase with Alternatives 1, 2, and 3, with greater increases expected in association with CVP participation, particularly with Alternative 3." Additionally, in Chapter 8, Groundwater Resources, Impact GW-3, it is noted that "[Project] Operation would improve water supply and reliability by creating additional surface water storage to be used by SWP and CVP contractors. This increased water storage aligns with county GSP sustainability goals" and "Alternatives 1, 2, and 3 would provide a more reliable surface water supply for agricultural use, lowering dependency on groundwater pumping for crop irrigation in the Sacramento Valley and the San Joaquin Valley for Storage Partners. Surface water use could increase deep percolation that would subsequently increase groundwater storage and improve groundwater quality because surface water has been shown to have

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		better water quality than groundwater… This increase in groundwater storage could also reduce land subsidence and disconnections from surface water. The increased surface water use for agriculture would also decrease dependency on micro-irrigation systems, which rely on groundwater pumping and have been shown to result in little to no groundwater recharge and a buildup of salt in the upper layers of the soil profile, both due to lack of deep percolation (Fahey 2012)." Therefore, Project operations are expected to reduce reliance on groundwater pumping, due to providing a more reliable surface water supply, and are not expected to result in saline upconing within the Colusa Basin.
71-12	The groundwater quality information in Appendix 8 and relied on in Chapter should be reconciled with the USGS Gamma Scientific Investigations https://pubs.usgs.gov/sir/2011/5002/ regarding the status of groundwater quality in the Colusa Subbasin and also the Bureau of Reclamation's own data regarding groundwater quality for wells used for Groundwater Substitution should also be used https://ceqanet.opr.ca.gov/2020029001/2. Please note that the majority of the water quality samples for wells used for groundwater substitution by Glenn-Colusa Irrigation District are above the Specific Conductance Threshold of 700 umhos/cm pursuant to the Draft Technical Information for 2015 Water Transfers. The wells identified as Reister # 2 and Reister # 3 have continuous observations between 1800 and 2000 umhous/cm as set out in Appendix I of the Environmental Assessment 2020 Tehama-Colusa Canal Authority In-Basin Water Transfers as cited above. Chapter 8 should also reference the Minimum Threshold and Measurable Objective for groundwater quality in Table 5.1 of the Colusa Subbasin Groundwater Sustainability Plan. The Measurable Objective is the same 700 umhos/cm as the Draft Technical Information Paper and the	Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding general methods and modeling. Determination of groundwater quality in the Colusa Subbasin was based on Bulletin 118-03 (California Department of Water Resources 2006), the Groundwater Ambient Monitoring and Assessment Program's Groundwater Information System for the Colusa Subbasins (California Water Boards 2020), and the SGMA basin dashboard (California Department of Water Resources 2020b), whereas the referenced groundwater ambient monitoring and assessment (GAMA) scientific investigation (U.S. Geological Survey 2011) utilizes well data collected between 2005 and 2008, grouping the Sacramento Valley into three broader areas: north, middle, and south. Therefore, Chapter 8, Groundwater Resources, and the supporting Appendix 8A, Groundwater Resources Basin Setting, rely on more current groundwater quality data in a more focused area when compared to the U.S. Geological Survey GAMA scientific investigation report, providing a better representation of conditions in the Colusa Basin.

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	Minimum Threshold is 900 umhous/cm. The Draft Colusa Subbasin GSP can be accessed on https://colusagroundwater.org/	The Initial Study/Environmental Assessment of the 2020 Tehama-Colusa Canal Authority In-Basin Water Transfers (Bureau of Reclamation and Tehama-County Canal Authority 2020) looks at the entirety of the Sacramento Valley groundwater basin. This reference recognizes localized groundwater quality issues but summarizes that the groundwater quality within the basin is "sufficient for municipal, agricultural, domestic, and industrial uses" (Bureau of Reclamation and Tehama-Colusa Canal Authority 2020). The upper limit for specific conductance along the GCID Main Canal in Section 8A.2.3, Sacramento Valley Groundwater Basin, in Appendix 8A has been updated in the Final EIR/EIS to use the 2015 documented 1,950 micromhos per centimeter (µmhos/cm) noted in Appendix I of the 2020 Tehama-Colusa Canal Authority In-Basin Water Transfers (Bureau of Reclamation and Tehama-Colusa Canal Authority 2020:550). Specific conductance in Table 8-2 of Chapter 8 was not updated, as it utilizes water quality within a 1-mile radius of Project elements, and the location of Reister wells could not be determined beyond being within the Colusa Subbasin. Chapter 8, Impact GW-3 and Appendix 8A have been updated in the Final EIR/EIS to include the final Colusa Subbasin GSP, including noting the plan includes minimum threshold and measurable objectives (Davids Engineering, Inc. et al. 2021). As noted in Impact GW-1, construction and operation of the Project would have a less-than-significant effect on groundwater quality and so would not conflict with the Colusa Subbasin GSP minimum threshold and measurable objectives. The information added to Appendix 8A or Chapter 8 does not affect or change determinations made in Chapter 8, Groundwater Resources, Section 8.4, Impact Analysis and Mitigation Measures.

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71-13	Section 8.4 makes a point that there was not a need for a Project to mitigate potential water quality degradation impacts "given the rural nature of the study area". Is this type of logic consistent with the SWRB DEI Resolution or the DWR HTW Commitments. It should not matter if an area is rural or not if there is a Human Right involved. It should also be noted that local residents are likely to be persons of color so it there are negative impacts the impacted community would be the same community that the DEI Resolution is set out to protect.	See response to comment 71-10 regarding compliance with the State Water Resources Control Board Diversity, Inclusion, and Equity Resolution and the DWR Assembly Bill 685, the Human Right to Water, commitments. See response to comment 71-10 regarding compliance with the State Water Resources Control Board Diversity, Inclusion, and Equity Resolution and the DWR Assembly Bill 685, the Human Right to Water, commitments. Chapter 8, Groundwater Resources, refers to the rural nature of the study area. It should be noted this descriptor was referenced under the No Project section of Impact GW-1 and does not pertain to any potential effects during Project construction or operations. The intent of noting the rural nature of the study area was to reflect the infiltration rate of precipitation to groundwater when compared to more developed areas. Since rural areas are often less developed, with more vegetation, the infiltration rates are typically better than highly developed settings, which are dominated by hard surfaces and poor infiltration of stormwater. Chapter 8 notes that Sites Reservoir is likely to cause inundation in previously unsaturated areas, which would in turn produce higher groundwater in the shallow aquifer along the western margins of the Colusa Subbasin (in the immediate vicinity of Sites Reservoir). This inundation would improve nearby water quality by reducing current salinity levels in groundwater with high-quality surface water. During construction potential contamination of groundwater from dewatering will be avoided through the implementation BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002

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		for Limited Threat Discharges to Surface Water) and State Water Resource Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the permits and any amendments thereto).
71-14	Section 8.4 also makes a statement that there is no water quality contamination in the study area yet Table 2 sets out that an Arsenic contamination greater than the MCL for Arsenic and the EC for the Sites Reservoir is as high as 2190 umhou/cm which would equate to an approximate TDS level in excess of 1400 ug/L. Water is considered brackish at a TDS level of 1000. See https://pubs.usgs.gov/circ/1358/ for discussions regarding the degradation of groundwater due to Redox, the desorption of Arsenic that occurs in Redox conditions and the movement of naturally occurring contaminants via faults all of which are conditions affecting water quality in the Colusa Subbasin and the Sacramento Valley in general.	Chapter 8, Groundwater Resources, and its related appendices include the water quality issues in the Project vicinity. As documented in Appendix 8A, Groundwater Resources Basin Setting, there was a primary MCL exceedance for arsenic within 1 mile of the GCID Main Canal (California Department of Water Resources 2007). In the Colusa Subbasin, MCL arsenic exceedances occur at a depth of 430 feet or greater (California Department of Water Resources, Northern Regional Office 2020). Based on the depth of ground disturbance during construction for the GCID Main Canal Diversion and System Upgrades and implementation of BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002 for Limited Threat Discharges to Surface Water) and State Water Resource Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the permits and any amendments thereto), there is a low probability of arsenic affecting groundwater quality in the study area. As described in Appendix 8A, groundwater quality in the Funks Creek and Antelope Creek Basins is fair, with a high mineral content measuring up to 2,190 µmhos/cm and total dissolved solids ranging up to 1,291 milligrams per liter (Sites Project Authority 2017b:11-12). These groundwater basins are largely shallow (generally less than 100

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		feet below ground surface) alluvial deposits with limited groundwater resources based on poor water-bearing and water quality characteristics (California Department of Water Resources 2003a:159; see also Chapter 12, Geology and Soils). Project operations would completely inundate these basins. This inundation is expected to improve local groundwater quality and reduce the salinity due to the "weight of the reservoir could force additional percolation of surface water into the reservoir soils, resulting in higher quality surface water seeping into the reservoir floor and the shallow groundwater layer" (see the Alternatives 1, 2, and 3, Operation, Reservoirs section of Impact GW-1). Please see response to comment 71-11 regarding groundwater pumping. Based on this, redox conditions, which could increase mobilization of arsenic from geologic formations into groundwater due to anaerobic conditions, would not occur because of Project construction or operations. Groundwater use during construction is not expected to deplete aquifers or interfere with groundwater recharge. In addition, due to "the average well depth and total depth to water of local well infrastructure, nearby wells would be able to compensate for reductions in groundwater levels associated with dewatering during construction" since "the average well depth and total depth to water would … compensate for any localized reduction in groundwater levels" (Impact GW-2). Finally, changes in groundwater levels or recharge would be minimized through implementation of BMP-14. Based on groundwater conditions and site geology, increased inundation from the reservoir is expected to stay within the shallow groundwater aquifer resulting in a maximum of an additional 30 feet

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		immediately west of the reservoir. This shrinks to a depth of 5 feet roughly 4 miles to the east, near TRR East (see the Alternatives 1, 2, and 3, Operation, Reservoirs section of Impact GW-2). This is supported by the geologic feasibility report for the Project (California Department of Water Resources 2003b:32), which indicates the fault GG-2 may be acting as a groundwater barrier, and springs near Golden Gate are a surface expression of the groundwater exiting downgradient of the fault. The William Lettis & Associates (2002:xxiv,3-4) discussion of the structural geology further indicates that the S-2, GG-1, GG-2, GG-3, and Salt Lake faults terminate against the Funks segment of the Great Valley thrust fault. This surface expression of the groundwater discharge is further documented in Appendix 8B, Groundwater Modeling, in Figure 10A-3A, Figure 10A-3B, and corresponding discussion, which notes groundwater discharge occurs at streams and other low-lying areas and is largely similar between No Project Alternative conditions and the modeled alternatives (see Section 10A.3.2, Results, of Appendix 8B). Therefore, groundwater from the shallow aquifers of the Funks and Antelope Basins are unlikely to reach the Colusa Subbasins or other Central Valley subbasins. Finally, there would be no effect on current movement of groundwater via faults within the study area due to Project construction or operations, based on the depth of ground disturbance when compared to depth of impaired groundwater, implementation of BMP-14, and the primary groundwater recharge mechanism as discussed in response to comment 71-11.
71-15	Chapter 8 does not discuss groundwater quality degradation due to Redox at all. The USGS Circular 1358 referenced above and a Draft Technical Memorandum dated January 23, 2014 by CH2Mhilll " Arsenic in Groundwater, Soil, and Surface Water in Rice-Growing Areas of the Sacramento Valley " by Summer Bundy et. al. discuss the potential for	As noted in response to comments 71-11 and 71-14, Project construction and operations are not expected to result in groundwater overpumping or increase anaerobic groundwater conditions in the Project area. Response to comment 71-11 also

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	Redox conditions and how Redox conditions can be aggravated by changes in soil oxidation levels that come with overpumping of groundwater or the upconing of anoxic salt water into parts of the aquifer where the anoxic water is exposed to oxygen. Figures 1 and 2 of the CH2Mhill Memorandum are important because it makes it clear that the rice growing areas include the area encompassing Funks and Stone Corral Creeks downstream from the Reservoir and describes the Redox process well in Figure 2. Please note that there has been several studies finding anoxic wells in the Valley below the Reservoir Site – including Table E-5 and Figure E-5 of the USGS Gamma Scientific Investigations [https://pubs.usgs.gov/sir/2011/5002/].	discusses effects on water quality from inundation of surface water on the shallow groundwater aquifer. Increased inundation is expected to stay within the shallow groundwater aquifer reaching at most an additional 30 feet immediately west of the reservoir. This shrinks to a depth of 5 feet roughly 4 miles to the east, near TRR East (see the Alternatives 1, 2, and 3, Operation, Reservoirs section of Impact GW-2). As shown in Figure 15-1 in Chapter 15, Agriculture and Forestry Resources, the nearest rice cropland to a Project element is east of TRR East across from McDermott Road. Therefore, increased inundation from the reservoir on rice cropland is not expected to occur. Finally, this increase in water in the shallow aquifer would not expose oxygen to deeper geologic formations that may be anaerobic. Effects on rice crops due to arsenic because of Project operations are analyzed in Chapter 15, where it was determined "relatively low concentrations of arsenic from upstream along the Sacramento River followed by evapoconcentration would lead to small changes in arsenic concentrations" for rice. In addition, according to a study conducted for the California Rice Research Board (CH2M HILL 2014), arsenic is most often associated with alluvial soils and areas with volcanic or hydrothermal conditions. The alluvial soils in the Project area are relatively shallow, and volcanic and hydrothermal conditions are not present.
71-16	Chapter 8 does not address the potential for seepage of water or the seepage of brackish water from the Reservoir site into the Valley floor from faults or other geological features including the potential movement via active subduction zones from current geological structures or future geological deformation as a result of a future earthquake. When	Please see response to comments 71-10, 71-11, and 71-14 regarding degradation of groundwater quality from Project operations and relation to the State Water Resources Control Board Diversity, Equity, and Inclusion Resolution and the DWR Assembly Bill 685, the Human Right to Water, objectives and responsibilities.

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	constructed the Sites Reservoir will contain 1 to 1.5 million acre feet with a hydraulic head of 500 ft above the Valley Floor. Public supply and domestic wells are likely at least 200 feet below sea level so this hydraulic gradient has a great gravitational force to find its way to push saline groundwater into or aggravate the already existing high artesian pressures and upward vertical gradients in the deep aquifers referenced by the DWR [(https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CSPA%20et%20al/part2/aqua_246.pdf)]. It is clear that the Reservoir Site sits upon or is near a subduction zone or near the border of active or potentially active subduction zones. Figure 1 of the Paper " Glaucophane schists and ophiolites of the northern California Coast Ranges: Isotopic ages and their tectonic implications" by F.W. Mc Dowell et.al (1984) https://pubs.geoscienceworld.org/gsa/gsabulletin/articleabstract/95/11/1373/189453/Glaucophane-schists-and-ophiolites-of-the-northern?redirectedFrom=fulltext makes it clear that the subduction zone analysis is complex and that the Reservoir site is close to a boundary of ophiolitic materials and the deposits of the Great Valley Sequence. The area to the west of the Site near Goat Mountain and Stonyford and to the north of the Site near the town of Paskenta is also complex. The risk of this hydraulic head needs to be addressed in Chapter 8 and assessed in context of the SWRB DEI Resolution and the DWR HRTW objectives and responsibilities.	Chapter 12, Geology and Soils, provides a detailed discussion of earthquake risk in the Project area and references the site-specific studies conducted by William Lettis & Associates (2002), which incorporates the necessary level of detail in the setting to understand the impact analysis. The seismotectonic evaluation by William Lettis & Associates (2002:Chapter 3.0) describes and considers the tectonic development of the region, including the ancestral forearc basin, the Coast Ranges, the Cascadia subduction zone, the stratigraphy of the Great Valley Group, and the region's structural geology. It also describes the site-specific fault studies and kinematic model used in the analysis. See, for example, Figure 12-3 in Chapter 12, which provides a geologic cross section and includes the Coast Range Ophiolite and Great Valley thrust fault. Also, as described in Chapter 12, William Lettis & Associates (2002) conducted extensive seismotectonic studies in the vicinity of the proposed dams, and additional geotechnical information will be incorporated into the Project design as further studies are conducted (see Section 2.5.3.1, Geotechnical Investigations, of Chapter 2, Project Description and Alternatives). Therefore, these reports provide the context necessary to assess earthquake risk in the Project area and are suitably summarized in the RDEIR/SDEIS for the purposes of CEQA and NEPA. Please see response to comments 71-10, 71-11, and 71-14 regarding degradation of groundwater quality from Project operations and relation to the State Water Resources Control Board Diversity, Equity, and Inclusion Resolution and the DWR Assembly Bill 685, the Human Right to Water, objectives and responsibilities. Chapter 12, Geology and Soils, provides a detailed discussion of earthquake risk in the Project area and references the site-specific

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		studies conducted by William Lettis & Associates (2002), which incorporates the necessary level of detail in the setting to understand the impact analysis. The seismotectonic evaluation by William Lettis & Associates (2002:Chapter 3.0) describes and considers the tectonic development of the region, including the ancestral forearc basin, the Coast Ranges, the Cascadia subduction zone, the stratigraphy of the Great Valley Group, and the region's structural geology. It also describes the site-specific fault studies and kinematic model used in the analysis. See, for example, Figure 12-3 in Chapter 12, which provides a geologic cross section and includes the Coast Range Ophiolite and Great Valley thrust fault. Also, as described in Chapter 12, William Lettis & Associates (2002) conducted extensive seismotectonic studies in the vicinity of the proposed dams, and additional geotechnical information will be incorporated into the Project design as further studies are conducted (see Section 2.5.3.1, Geotechnical Investigations, of Chapter 2, Project Description and Alternatives). Therefore, these reports provide the context necessary to assess earthquake risk in the Project area and are suitably summarized in the RDEIR/SDEIS for the purposes of CEQA and NEPA. Regarding the comment on the fault near Paskenta and its role in the movement of contaminated groundwater, based on the seismotectonic evaluation (William Lettis & Associates 2002), the Paskenta and Willows faults (both of which are between the reservoir area and the Central Valley) do not appear to provide a conduit between the reservoir area and the Central Valley. William Lettis & Associates (2002) conclude that the Paskenta fault does not project as far south as the Orland Buttes, does not connect or directly relate to the Willows-Corning fault, and is 25.5 miles from the Sites and Golden Gate Dams sites at its closest approach (3-127,A-19). The

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		seismotectonic evaluation also does not appear to show a connection between the reservoir area and the Corning-Willows fault (William Lettis & Associates 2002:Figures 2-2, 2-3, 2-4). In addition, as noted in response to comment 71-14, in the geologic feasibility report for the Project (California Department of Water Resources 2003b:32), the DWR indicates that fault GG-2 likely acts as a groundwater barrier. Regarding the comment that Sites Reservoir could affect the hydraulic gradient so that saline groundwater would be "pushed" up into deep groundwater aquifers, as noted in response to comment 71-14, increased groundwater from Sites Reservoir is expected to stay within the shallow groundwater aquifer and be discharged to surface waterways similar to present conditions.
71-17	The upconing of salt water in the Sacramento Valley is of great concern and there are many data gaps regarding this issue. What is clear is that groundwater extraction is occurring in a fresh water aquifer above a subduction zone and that over pumping degrades the fresh water aquifer either because previously anoxic salt water is exposed to oxygen and the Redox process occurs and/or the natural upward pressure gradient or artesian influences are also accelerating the contamination and Redox process. We need more data and to do that we need more multi-completion observation wells especially on the west side of the Sacramento Valley – groundwater quality needs to observed at multiple depths and the hydraulic gradient of each observation site needs to be observed and monitoring. The required analysis should be a time series of observations and these observations should focused on current hydrological conditions and futures hydrological conditions that may come with having the hydraulic head of the water storage sitting 500 feet above the Valley floor. There may be no influence but then there could be material influence especially as a result of a movement in a fault or an earthquake event. In	Please see response to comments 71-11 and 71-15 regarding whether the Project would cause a need for overpumping, resulting in degraded water quality in the Colusa Subbasin. In addition, monitoring in the Sacramento Valley Basin for groundwater quality and levels is currently occurring as part of the Groundwater Ambient Monitoring and Assessment Program and SGMA. Chapter 4 of the Colusa Subbasin GSP is dedicated to establishing a groundwater monitoring network to track groundwater levels and quality, surface/groundwater interactions, and extent of land subsidence (Davids Engineering, Inc. et al. 2021).

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	order to monitor this potential contamination, the Project should invest in a series of monitoring wells in the Colusa Subbasin and finance this monitoring process working with the local Groundwater Authorities and Irrigated Lands.	
71-18	After assessing all the groundwater quality concerns in conjunction with the State's objectives and responsibilities from the DEI resolution and HRTW, the logic for a Sacramento Valley West Side Filtration System is a compelling mitigation project that could be combined with other public infrastructure projects such as broadband and buried power lines running north and south via the Hwy 99 infrastructure adjacent to I-5. Policy makers will spend billions of dollars on a project that will primarily urban residents down stream from the Reservoir but may end up leaving the residents and communities at the base of the project without a sustainable supply of fresh water either because there is not supply or because the Reservoir project itself caused degradation of the fresh water supply by seepage or increased hydraulic and artesian pressures forcing salt water into domestic wells and public supply systems like the public supply systems for Maxwell and the City of Williams.	Please see response to comments 71-10, 71-11, 71-14, and 71-16 regarding commenter-specific concerns related to groundwater.
71-19	Section 9.3 appears to ignore the riparian and seasonal wetlands on the Colusa Basin Drain. Since this is the habitat that encompasses thousands of acres of wetland easements and two National Refuges this seems like a very material omission. Section 9.3.1. should include the discussion of the vegetation and wetlands in the Delevan and Colusa Refuges and all the wetland habitat on the Colusa Basin Drain below the two Refuges.	The CBD receives inputs from numerous sources other than Stone Corral Creek, including Willow Creek, Logan Creek, Bounde Creek, and various agricultural return flows. Due to the number of inputs that are not associated with the Project, operation of the Project is not expected to affect the hydrology of the CBD nor the riparian and seasonal wetlands associated with it. Similarly, no substantial effects would be anticipated on the Delevan or Colusa National Wildlife Refuges (NWRs). Delevan NWR receives water from the CBD, several agricultural drains, and Stone Corral Creek. The main water inputs to Colusa NWR are from the CBD and Powell Slough. In addition, an increase in level 4 water supply to the refuges is an ecosystem benefit of the Project.

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71-20	In 10.2.2.4 – It is incorrect to group the Colusa Basin Drain habitat with the TC Canal or the GCID Main Canal. The Colusa Basin Drain is historical habitat that dates back before European Settlement that includes two National Refuges downstream, thousands of acres of designated wetlands, extensive riparian natural levee on the west side of the channels and several islands within the channel of the Colusa Basin Drain. It also delivers water for the ecosystem that is unique to seasonal flooded areas both within the Delevan and Colusa National Refuges and all the wetland easement areas south of the Site. The Wildlife Resources representative for the Sacramento Valley National Wildlife complex https://www.fws.gov/refuge/Sacramento/habitats.html which includes Delevan and Colusa National Refuges is also representative of the riparian natural levee on the west side of the Colusa Basin Drain, the islands in its channel and the wetland easements on the west side of the Colusa Basin Drain.	The CBD is an earth-lined constructed channel more than 15 feet wide that is used for irrigation, and therefore was mapped as the "Canal" land cover type. Chapter 10, Wildlife Resources, and Appendix 10A, Wildlife Species Lists, Special-Status Wildlife Table, and Non-Listed Wildlife Species Accounts, identifies Canal, including the CBD, as suitable habitat for giant gartersnake, western pond turtle, and bank swallow, and as a water source for special-status bats. Including the CBD in the "Canal" group does not mean that it is not a valuable natural resource or that it does not provide valuable habitat for wildlife.
71-21	There should be a discussion in 10.2.3 regarding the habitat for Vernal Pool Fairy Shrimp and Conservancy Fairy Shrimp at the seasonally flooded wetlands east of I-5 near the confluence of Funks Creek and Stone Corral Creek. If the winter flows are restricted too much because the flood waters are diverted to the Reservoir this habitat could be endangered. This habitat includes part of the Willow Creek – Lurline Wetland Management Area https://www.fws.gov/uploadedFiles/Region_8/NWRS/Zone_1/Sacramento_Complex/Sacramento/Uploaded_Files/Maps_and_Brochures/Location/Willow%20Creek%20Lurline%20WMA%20Location%20Map%202012.pdf As you can see from the Map, there is a portion of the Willow Creek – Lurline Management Area that is located where Funks Creek and Stone Corral Creek traverse I-5 and join before running into the Delevan National Wildlife Refuge and the Colusa Basin Drain. This type of habitat exists for the wetland easements and riparian areas of the Colusa Basin Drain.	Flood water from creeks is generally not a good source of water for vernal pools, as overflow from creeks into vernal pools can introduce fish and other species that prey on fairy shrimp. Suitable vernal pool branchiopod habitat is inundated by precipitation. Regarding the Project's potential effect on wetlands near the confluence of Funks and Stone Corral Creeks, the Project has the capacity to provide a range of releases to Stone Corral and Funks Creeks (0 to 100 cfs), augmented by higher periodic pulse flows, if necessary, to maintain fluvial geomorphic processes in the stream channel, as described in the Water Operations section of Chapter 2, Project Description and Alternatives, of the RDEIR/SDEIS. Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, describes the technical studies (Stone Corral Creek and Funks Creek Aquatic Study Plan) that would help determine the release

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	The discussion regarding the impact on Vernal Pool Branchipods should consider the effect of limiting the flood flows from Funks and Stone Corral Creek due to the diversion of these Creeks into the Reservoir. These vernal pools exist on much of the two Refuges and wetland easements on the Colusa Basin Drain.	schedule and volumes, should releases be found necessary to comply with California Fish and Game Code Section 5937, a requirement that dam operators provide sufficient flow below dams to keep fish in good condition, as discussed in Section 11.2.7, Local Drainages, of Chapter 11, Aquatic Biological Resources. Section 2D.4.3, Flow Characterization and Geomorphic Study, in Appendix 2D describes the flow characterization and geomorphic study, which would confirm the appropriate operating regime, consistent with the commitment to not encroach on existing water rights or ecological function, including wetland function. The study will be conducted prior to construction of dams on Funks and Stone Corral Creeks to establish the unaltered hydraulic regime and unaltered geomorphic conditions. While the flow plan developed based on that study will protect downstream water rights and ecosystem functions, including wetland function, it will also achieve the flood control benefits identified for the Project, as described in the Water Operations section of Chapter 2.
71-22	Generally – the discussion regarding all fauna discussed in this Chapter should be done in context to the natural habitat provided by the Colusa Basin Drain. Parts of the Drain like the portions encompassed by the Delevan and Colusa National Refuges have habitat on both sides of the Drain. South of the Colusa Refuge there is a levee on the east side of the Drain but the area between the toe of the levee on the east side all the way to the wetland easements on the west side is abundant habitat for Wildlife Resources. This is particularly the case in the area north of College City where the historical confluence of Sycamore Slough and the Colusa Basin Drain occurs. The was the historical confluence for the Sacramento River and the Colusa Basin Drain waterway before it was modified for Reclamation purposes.	As the commenter notes, the CBD has been highly modified over the years for the primary purpose of agriculture. As identified in Chapter 5, Surface Water Resources, Section 5.2.1.2, Conveyance Systems, in the CBD and Knights Landing Ridge Cut subsection, "The CBD is a human-made channel designed to convey agricultural return flows and storm runoff from the Colusa Basin to the Sacramento River or the Yolo Bypass, with direction of flow controlled by the Knights Landing Outfall Gates (KLOG) near the downstream end of the CBD." The CBD receives water from numerous sources, including Willow Creek, Logan Creek, Bounde Creek, and various agricultural return flows. Due to the number of sources of water that are not associated with the Project, operation of the Project is not expected to affect the hydrology of the CBD nor the associated riparian and seasonal wetlands that provide habitat for wildlife. Similarly, no substantial

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		effects would be anticipated on the Delevan or Colusa NWRs. Delevan NWR receives water from the CBD, several agricultural drains, and Stone Corral Creek more than 3 miles downstream of its confluence with Funks Creek. The main water inputs to Colusa NWR are from the CBD and Powell Slough. In addition, an increase in level 4 water supply to the refuges is an ecosystem benefit of the Project.
71-23	The discussion in 11.2.2.2 regarding Nutrients and Foodweb Support should include a discussion regarding the Nigiri Project. https://www.nigiriproject.com/. The seasonal flooding on the Colusa Basin Drain is an important part of the Foodweb as illustrated by the findings of the Nigiri Project. To the extent that flood flows from Funks Creek and Stone Corral Creek are diverted the Foodweb highlighted in the Nigiri Project will be diminished especially regarding the seasonal wetlands and inundated riparian corridor along the Colusa Basin Drain.	A discussion of the Nigiri Project at Knaggs Ranch has been added to the Final EIR/EIS, as suggested by the commenter (see the reference to Katz et al. 2017 in Chapter 11, Aquatic Biological Resources, Section 11.2.4.3, Yolo Bypass, under Aquatic Habitat). Flows into the Nigiri Project come from the Knights Landing Ridge Cut and generally would be quite similar under the No Project Alternative and Alternatives 1, 2, and 3. For Final EIR/EIS CALSIM modeling, the differences in mean monthly Knights Landing Ridge Cut flows from December through April are generally less than 1%, except in December of Below Normal Water Years, when flows are up to 11% less under Alternatives 1, 2, and 3. Alternatives 1, 2, and 3 would not be expected to have any effect on the ability to operate the Nigiri Project.
71-24	Fish Passage and Entrapment – Page 11-16 Salmon are present in the Colusa Basin Drain and have become entrapped https://www.fws.gov/fieldnotes/regmap.cfm?arskey=33853	The link provided by the commenter no longer works. The page number (11-16) cited by the commenter pertains to fish passage in the Delta; presence of adult salmon in the CBD is discussed on page 11-30 in the RDEIR/SDEIS.
71-25	Discussion regarding Funks and Stone Corral Creek Page 11-299. The area of the confluence of Funks and Stone Corral Creeks on the east side of I-5, this area includes a portion of the Willow-Creek- Lurline Wetlands Management Area. What is missing from discussion and from this Chapter generally is any discussion regarding the aquatic species that live in the Colusa Basin Drain. Salmon have been found in the Colusa Basin Drain. Local fisherman have fished for catfish on the Drain for years and Red	In Chapter 11, Aquatic Biological Resources, the analysis focused on the "stream reaches of interest." These are the reaches below the dam sites on Stone Corral Creek and Funks Creek and the point at which the creeks are integrated into the water delivery systems of GCID and TCCA. For Stone Corral Creek, this is the point at which it crosses the GCID Main Canal. Below this point, the creek is supplied with water for use on agricultural fields and receives drain water from those

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	Swamp Crayfish is abundant. Also missing from this discussion is the contribution to the Foodweb from seasonal flooding on the Colusa Basin Drain. The Colusa Basin Drain is ALIVE and is an important source of food for aquatic life in its channel but also downstream of Knights Landing where the confluence of the Colusa Basin Drain and the Sacramento River. Historically the confluence was via Sycamore Slough before Reclamation so wild life species have depended on the Colusa Basin Drain habitat since the end of the Great Valley Sequence. Since Reclamation the confluence is at Knights Landing but the importance of its habitat has existed for millions of years since the Great Valley Sequence made it the low lying waterway and wetlands for the west side of the Sacramento Valley.	fields. For Funks Creek, it is the point at which it enters Funks Reservoir. Below the reservoir, the creek is sustained by seepage from the Funks Reservoir dam, and, below the GCID Main Canal, it also receives water for delivery and drain water from agricultural fields. In addition, Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, Section 2D.4, Stone Corral Creek and Funks Creek Aquatic Study Plan and Adaptive Management, describes an Aquatic Study Plan and adaptive management plan for Stone Corral and Funks Creeks. These studies will evaluate fish resources in the creeks and update information on flow and geomorphology of the creeks. This information will be used to evaluate and, if necessary, refine the proposed release provisions designed to maintain these intermittent streams. The CBD is maintained by agricultural return flows and flow from several other westside streams (e.g., Hunters Creek, Freshwater Creek, Salt Creek, and Cortina Creek). The change in the flow pattern in Stone Corral and Funks Creeks is not expected to affect the aquatic life in the CBD. Although salmon have been found in the CBD, the CBD is not suitable habitat for salmon. There is no suitable spawning or rearing habitat in the CBD, and there is no return to the Sacramento River from the CBD upstream of the Knights Landing Outfall. The fisheries agencies are actively pursuing actions to exclude salmon from the drain (e.g., Wallace Weir fish facility) (National Marine Fisheries Service 2014).
71-26	Chapter 12 Comments – Geology and Soils Section 12.2 is missing a discussion regarding the geologic issues associated with the geologic development of the Sacramento Valley as an archetypal forearc basin https://pubs.geoscienceworld.org/gsa/geology/article/47/8/757/571454/Th	The commenter expresses several concerns related to the adequacy of descriptions of the seismotectonic setting, including the geologic development of the Sacramento Valley and Coast Range, the presence of the Great Valley Sequence and the Coast Range ophiolite, and the presence of the subduction zone, based on papers by McDowell et al. (1984), Shervais et al. (2004), and Orme and Surpless

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	e-birth-ofa-forearc-The-basal-Great-Valley The geology at the Reservoir Site has a complex geological structure due to the existence of the subduction zone beneath and around the Site. The Site is near a border of ophiolitic rocks and the deposits of the Great Valley Sequence – See Figure 1 from McDowell [(Glaucophane schists and ophiolites of the northern California Coast Ranges: Isotopic ages and their tectonic implications" by F.W. Mc Dowell et.al (1984) https://pubs.geoscienceworld.org/gsa/gsabulletin/articleabstract/95/11/1373/189453/Glaucophane-schists-and-ophiolites-of-the-northern?redirectedFrom=fulltext)]. Also reference in McDowell is the unique development of the subduction zone near Goat Mountain to the west of the Site and the area near the town of Paskenta to the north. The Sites Reservoir is located in the Northern or Sacramento Valley Belt of Coast Range Ophiolites https://pubstest.er.usgs.gov/publication/70026861 [Corrected link: https://pubs.er.usgs.gov/publication/70026861] which have been largely influenced by the historical development of the subduction zone caused by the collision of the Pacific and North American plates. This context is necessary to adequately assess future earthquake risk on the structure itself but also assess the risk of groundwater quality contamination caused by seepage and hydraulic head from the stored water in the Reservoir.	(2019). The seismotectonic evaluation by William Lettis & Associates (2002) describes and considers the tectonic development of the region (see Chapter 3.0, Neotectonic Characterization of Geologic Structures, of the William Lettis & Associates report), including the ancestral forearc basin, the Coast Range, the Cascadia subduction zone, the stratigraphy of the Great Valley Group, and the region's structural geology. It also describes the site-specific fault studies and kinematic model used in the analysis. The RDEIR/SDEIS references the site-specific studies conducted by William Lettis & Associates (2002) and incorporates the level of detail in the setting needed to understand the impact analysis. See, for example, Figure 12-3 in Chapter 12, Geology and Soils, which provides a geologic cross section and includes the Coast Range Ophiolite and Great Valley Thrust Fault. In addition, the papers cited by the commenter do not appear to present new seismic-related information but rather focus on the stratigraphy and chronology of the formation of Coast Ranges, which occurred more than 65 million years ago during the Mesozoic Era. Also, as described in the RDEIR/SDEIS, William Lettis & Associates (2002) conducted extensive seismotectonic studies in the vicinity of the proposed dams, and additional geotechnical information will be incorporated into the Project design as further studies are conducted (Chapter 2, Project Description and Alternatives, Geotechnical Investigations). Therefore, these reports provide the context necessary to assess earthquake risk in the Project area and are suitably summarized in the RDEIR/SDEIS for the purposes of CEQA and NEPA. The commenter also expressed concern about groundwater quality if contaminated groundwater were to seep along faults under the

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		reservoir. However, in the geologic feasibility report for the Project (California Department of Water Resources 2003b:32), DWR indicates that fault GG-2 may be acting as a groundwater barrier, and the springs near Golden Gate are a surface expression of the groundwater exiting downgradient of the fault. Also as described in Appendix 8A, existing groundwater quality in the Funks Creek and Antelope Creek Basins is fair, with a high mineral content measuring up to 2,190 µmhos/cm and total dissolved solids ranging up to 1,291 milligrams per liter. These groundwater basins are largely shallow (generally less than 100 feet below ground surface) alluvial deposits with limited groundwater resources based on poor water-bearing and water quality characteristics (California Department of Water Resources 2020:1; see also Chapter 12, Geology and Soils). Project operations would completely inundate these basins. This inundation is expected to improve local groundwater quality and reduce the existing salinity because the "weight of the reservoir could force additional percolation of surface water into the reservoir soils, resulting in higher quality surface water seeping into the reservoir floor and the shallow groundwater layer" (see the Alternatives 1, 2, and 3, Operation, Reservoirs section of Impact GW-1 in Chapter 8, Groundwater Resources).
71-27	Table 12-2 and Figure 12-4. The Paskenta and Willows Fault needs to be included in the scope of this Chapter [12]. This is an important fault affecting potential movement of natural occurring contaminants and possible could be impacted by the extra hydraulic gradient from the Sites stored water aggravating the artesian and upconing gradient that already exists in the groundwater aquifer in the Colusa Subbasin. [(https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/exhibits/docs/CSPA%20et%20al/part2/aqua_246.pdf)]	In response to concerns brought up in this comment, Table 12-2 in Chapter 12, Geology and Soils, of the Final EIR/EIS has been modified to include the southern reach of the Corning Fault (which is interpreted to either splay from or terminate against the Willows Fault [William Lettis & Associates 2002:3-136]), and a new figure (Chapter 12, Geology and Soils, Figure 12-6) has been added to show the major structural features in the region and the site-specific faults mapped in the study area, as described by William Lettis & Associates

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	The anticline near the recent Hamilton City earthquake should also be included https://earthquake.usgs.gov/earthquakes/eventpage/nc73545750/executive since this is the most recent land based earthquake near the Site.	(2002:Plate 1). This figure shows both the Paskenta and Willows Faults. In regard to the portion of the comment about the Paskenta and Willows Faults and their role in the movement of contaminated groundwater, based on the seismotectonic evaluation (William Lettis & Associates 2002), these faults do not appear to provide a conduit between the reservoir area and the Central Valley. William Lettis & Associates concludes that the Paskenta Fault does not project as far south as the Orland Buttes, does not connect or directly relate to the Willows-Corning Fault, and is 25.5 miles from the Sites and Golden Gate Dam sites at its closest approach (3-127, A-19). The seismotectonic evaluation also does not appear to show a connection between the reservoir area and the Corning-Willows Fault, as shown in Figures 2-2 to 2-4 of the William Lettis & Associates report. In addition, as stated in response to comment 70-26, in the geologic feasibility report for the Project (California Department of Water Resources 2003b:32), DWR indicates that fault GG-2 likely acts as a groundwater barrier. Stored water in Sites Reservoir is also not likely to negatively affect groundwater in the Central Valley because, as described by Ferriz (2001:19-22), the primary source of recharge is from surface water sources along the edges of the valley, such as streams in the Coast Ranges, Cascade Range, and Sierra Nevada, with infiltration by precipitation being a secondary source. In regard to the portion of the comment about the Hamilton City earthquake, the earthquake that occurred on April 4, 2021, was a magnitude 1.8 (USGS 2021). As described by the Incorporated Research Institutions for Seismology (2011) website and associated factsheet, which are cited on the USGS (2022) informational page on

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		earthquake magnitude, energy release, and shaking intensity, several hundred earthquakes magnitude 2 and smaller occur every day worldwide. These small earthquakes are not generally perceptible to humans. As described in the RDEIR/SDEIS, the new GCID Main Canal head gate structure that would be installed approximately 0.25 mile downstream of the Hamilton City Pump Station would be built to conform to seismic design criteria, such as the California Building Standards Code regulations for structures, and therefore would not be affected by these types of earthquakes.
71-28	Chapter 16 Comments - Recreation Resources Figure 16.1 should include the towns of Leesville, Lodoga and Stonyford since they are important bases for eco-exploration, eco-tourism and cultural heritage appreciation. These towns and the roads between them provide a great source of recreation and historical appreciation of the pioneer history of Colusa County. It is hard to believe that Figure 16.1 does not include the National Monument and National Forest adjacent to the Site. The south east part of Mendocino National Forest has several sites which are to the west of Stonyford https://www.fs.usda.gov/recarea/mendocino/recreation/hiking/recarea/?recid=25250&actid=50	Figure 16-1 in Chapter 16, Recreation Resources, provides an overview of the region surrounding the Project area and other recreational areas in this region. It covers a broad area from the San Francisco Bay north to beyond Shasta Lake. At this scale, only major urban areas are identified, not the smaller towns. While Leesville, Lodoga, and Stonyford are important from a recreational standpoint, they would not be affected by the Project. The figure focuses on recreational areas in the study area, as defined in Chapter 16, Section 16.1, Introduction, because these areas are identified as being potentially affected by the Project. Likewise, the Mendocino National Forest and Berryessa and Snow Mountain National Monument have been added to the text, as they are of regional importance from a recreational standpoint; however, they have not been added to the figure because they would not be affected by the Project.
71-29	There are several recreational sites accessible from Stonyford to the Berryessa and Snow Mountain National Monument. These are highlighted on the North Map https://www.blm.gov/sites/blm.gov/files/docs/2021-04/BSMNM_Brochure_508_small.pdf There should be an extensive discussion of the Berryessa and Snow Mountain National Monument in this Chapter and a discussion on the	The national monument would not be affected by Project construction or operations. Project construction would not result in increased use of the national monument that would cause new or accelerated substantial physical deterioration of those facilities because there are no national monument recreational facilities in the construction areas. Recreation

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	recent expansion and future expansion possibilities. https://www.blm.gov/programs/national-conservationlands/california/berryessa-snow-mountain-national-monument	use at Sites Reservoir could result in a minor reduction in recreation use, at least initially, at other regional reservoirs and the national monument, and therefore Project operation would not result in increased use of existing recreational facilities in the national monument that would cause new or accelerated substantial physical deterioration of those facilities. In addition, there would be no perceptible change in water levels at the monument that would affect its use or enjoyment. The study area for the analysis of impacts resulting from the operation of the Project on recreational resources is defined in Chapter 16, Recreation Resources, of the RDEIR/SDEIS as regional SWP and CVP reservoirs (i.e., Shasta Lake, Lake Oroville, Folsom Lake, San Luis Reservoir); rivers downstream of SWP and CVP reservoirs; and recreational facilities or areas in the region, such as the Sutter and Yolo Bypasses and wildlife areas and wildlife refuges, that receive water from SWP or CVP facilities. The national monument was excluded from the study area as it does not meet any of these criteria and is not hydrologically connected to the water management system that would be affected by the Project. In addition, the Berryessa and Snow Mountain National Monument recreation sites identified on the map at the provided URL are all at least 10 miles from the Project footprint, and neither access to these sites from Stonyford nor the use of these areas would be restricted, impaired otherwise impacted from construction or operation of Sites Reservoir.

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		No information is provided in the comment to support any added discussion on how Sites Reservoir would affect future expansion possibilities of the monument.
71-30	Chapter 30 Comments - Environmental Justice and Socioeconomics There should be a discussion about the SWRCB DEI Resolution and the DWR HRTW requirements and how these State Agencies policies and requirements should be implemented in the economic opportunity from the construction of the project, recreation access from the process and the necessary protection from groundwater quality degradation from the Project.	Refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the relationship of the Project with other plans, programs, policies, and agencies. The Authority and Reclamation are the lead agencies with discretionary decision-making authority over the Project, and other agencies' internal policies and initiatives do not apply to the Project. Chapter 32, Other Required Analyses, Section 32.2.2, Construction, identifies that there would be benefits to local and regional economies associated with increased jobs during Project construction. Appendix 30A, Regional Economic Modeling, presents analysis related to job creation during construction. Recreational facilities included in the Project and alternatives are discussed in the Final EIR/EIS in Chapter 2, Project Description and Alternatives, Section 2.5.1.6, Recreation Areas. These facilities would increase recreational opportunities in the region. Recreation impacts are further discussed in Chapter 16, Recreation Resources. Potential impacts on groundwater quality are discussed in Chapter 8, Groundwater Resources. As described in Chapter 8, the Project would not result in substantial groundwater degradation compared to the No Project Alternative/No Action Alternative.
72-1	The Coalition is submitting extensive comments because we are concerned that the environmental benefits of the proposed Sites Reservoir are a foregone conclusion in state policy -- before environmental legal review and required permitting is complete. Project benefits remain speculative, and environmental harms of Sites have yet to be properly assessed. Therefore, it is important to the members of the NGO Coalition for these	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for a discussion of commenter support or opposition to the Project. Please see Master Response 5, Aquatic Biological Resources, for a discussion of benefits associated with the Project. No decision has yet been made on whether to approve the Project. The Authority and Reclamation will decide

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	comments to be considered in the public record by the Sites Project Authority ("Project proponents" or "Sites Authority") before moving forward with the proposed Project.	whether, and if so how, to approve the Project or an alternative only after the environmental review is completed and the appropriate findings have been made based on that review and other information in the administrative record.
72-2	Overall, the NGO Coalition believes the RDEIR/SDEIS does not meet the legal requirements of the California Environmental Quality Act ("CEQA") and the National Environmental Policy Act ("NEPA") because it: -fails to consider a reasonable range of alternatives, -fails to provide an accurate and stable project description, -fails to accurately assess environmental impacts, -fails to adequately assess environmental impacts, -fails to account for National Wild and Scenic Protections, and finally -is critically deficient in important information and therefore recirculation of a revised EIS/EIR is required.	Thank you for your comments; individual comments are responded to below. In addition, please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding general comments about environmental impact assessments and requirements for recirculation. Please see Master Response 2, Alternatives Description and Baseline, regarding the adequacy of the project description. Please see Master Response 9, Alternatives Development, regarding the reasonable range of alternatives. Please see response to comment 72-148 regarding the National Wild and Scenic Protections. The EIR/EIS meets CEQA and NEPA requirements to evaluate and disclose the relative change to the physical environment as a result of the alternatives, identify potentially significant impacts or substantial adverse effects based on the relative change, and identify feasible mitigation measures.
72-3	78. I. The RDEIR/SDEIS Fails to Consider A Reasonable Range of Project Alternatives. The California Environmental Quality Act ("CEQA") and the National Environmental Policy Act ("NEPA") require that the RDEIR/SDEIS consider a reasonable range of alternatives. [Footnote 1: Cal. Pub. Res. Code §§ 21002, 21061, 21100; tit. 14, Cal. Code Regs. ("CEQA Guidelines") § 15126.6; 42 U.S.C. § 4332; 40 C.F.R. §§ 1502.1, 1502.14, 1508.25(b).] However, the RDEIR/SDEIS fails to consider a reasonable range of alternatives because it only considers a single operational alternative, whereas other operational alternatives could reduce or avoid adverse environmental impacts. The failure to include any	The Authority and Reclamation considered multiple operational scenarios over the course of the Project development that were designed to meet the Project objectives, purpose, and need; enhance Project benefits; and reduce or avoid impacts. The features of alternatives, including Sites Reservoir capacity, conveyance systems, and operational scenarios, were conceptually developed and refined over time to maximize the achievement of the objectives. This process is described in Appendix 2A, Alternatives Screening and Evaluation, and Appendix 2B, Additional Alternatives Screening and Evaluation. Please see Master Response 9, Alternatives Development, regarding operational criteria development.

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	operational alternatives that could reduce or avoid adverse environmental impacts violates NEPA and CEQA. See, e.g., Citizens of Goleta Valley v. Board of Supervisors, 52 Cal.3d 553, 566 (1990) (EIR must consider a reasonable range of alternatives that offer substantial environmental benefits and may feasibly be accomplished); Muckleshoot In[di]an Tribe v. U.S. Forest Serv., 177 F.3d 800, 813 (9th Cir. 1999) (NEPA analysis failed to consider reasonable range of alternatives where it "considered only a no action alternative along with two virtually identical alternatives"); Natural Res. De[f.] Council v. U.S. Forest Serv., 421 F.3d 797, 813 (9th Cir. 2005).	
72-4	The RDEIR/SDEIS should have evaluated reasonable and feasible alternatives that result in comparatively reduced water diversions from the Sacramento River (particularly during all but wet water year types and during periods of moderate and low flows), because they would result in reduced adverse effects on native fish and wildlife in the Sacramento River and Bay-Delta estuary. The best available science shows that increased flows in the Sacramento River during the winter-spring period and increased Delta outflows are necessary to protect and restore native fish and wildlife populations and their habitats and comply with state and federal law.	Please see Chapter 2, Project Description and Alternatives, Section 2.1, Alternatives Development Process, for information about the diversions evaluated as part of the value planning process. Please refer to Master Response 5, Aquatic Biological Resources, regarding the use of best available science and data to evaluate impacts associated with river flow on native fish. Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, regarding the adequacy of the terrestrial biological resources impact analysis and mitigation measures. Please refer to Master Response 9, Alternatives Development, regarding operational criteria refinements and increased bypass flows and identified adverse effects on fish and wildlife disclosed in the EIR/EIS that would not be substantially lessened as a result of reduced water diversions.
72-5	Several commenters, including Pacific Coast Federation of Fishermen's Associations (PCFFA) et al. and the California Department of Fish and Wildlife ("CDFW"), submitted NEPA/CEQA scoping comments in January of 2018 specifically stating that the earlier NEPA/CEQA process was seriously flawed and must analyze more than one operational alternative in order to identify alternatives that would minimize or avoid adverse environmental impacts of the project. The RDEIR/SDEIS should evaluate one or more operational scenarios that do not result in substantial reductions in Delta	The Authority and Reclamation considered multiple operational scenarios over the course of the Project development that were designed to meet the Project objectives, purpose, and need; enhance Project benefits; and reduce or avoid impacts. The features of alternatives, including Sites Reservoir capacity, conveyance systems, and operational scenarios, were conceptually developed and refined over time to maximize the achievement of the objectives. This process is described in Appendix 2A, Alternatives Screening and Evaluation,

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	outflow during the winter and spring months, as well as one or more operational alternatives that result in increased Delta outflow during these months. CDFW's scoping comments directed that several operational scenarios should be analyzed, including one that was consistent with the water operational requirements being proposed for the California WaterFix project and another that would fully minimize operational impacts. Moreover, in 2016 and 2017, CDFW submitted potential operational criteria to the Project proponents that included Sacramento River bypass flows and Delta outflow requirements that were designed to reduce adverse environmental impacts of the project on salmon, sturgeon, longfin smelt, Delta smelt, and other native fish species. However, none of these proposed operational criteria were evaluated in the RDEIR/SDEIS. Instead, the RDEIR/SDEIS only analyzes what is clearly in effect just a single operational scenario in the alternatives that are analyzed. [Footnote 2: See, e.g., RDEIR/SDEIS at 3-102, 105-107.] As discussed on the pages that follow, that operational scenario results in significant adverse environmental impacts and could not lawfully be permitted by state and federal agencies. As a result, the RDEIR/SDEIS violates NEPA and CEQA because it fails to consider a reasonable range of alternatives.	and Appendix 2B, Additional Alternatives Screening and Evaluation. Please see Master Response 9, Alternatives Development, regarding operational criteria development. The RDEIR/SDEIS evaluates different alternatives as compared to those evaluated in the 2017 Draft EIR/EIS. Please refer to Master Response 2, Alternatives Description and Baseline, regarding refinements to Project operations. Please see Master Response 9, Alternatives Development, regarding the reasonable range of feasible alternatives and the operational criteria considered and evaluated over the years, including bypass flows. Please also refer to Master Response 9 regarding identified adverse effects on fish and wildlife disclosed in the EIR/EIS that would not be substantially lessened as a result of reduced water diversions. Chapter 31, Cumulative Impacts, qualitatively considers cumulative impacts associated with the construction and operation of the Delta Conveyance Project (a project that is similar to but different than the commenter-referenced California WaterFix that would result in similar cumulative impact results).
72-6	In the prior round of NEPA documents, on January 15, 2018, PCFFA et al. and others submitted NEPA/CEQA scoping comments stating that the Project proponents must consider one or more alternatives that did not include a surface water reservoir and instead relied on groundwater storage, conjunctive use, and/or reoperation of reservoirs to improve water supplies and ecosystem protection. Such an alternative would likely cost dramatically less money to construct and operate, and could result in lower environmental impacts, making it a potentially feasible and reasonable alternative. However, the current RDEIR/SDEIS failed to consider such an alternative, in violation of NEPA and CEQA.	Please see Master Response 9, Alternatives Development, regarding the consideration of alternatives and the CALFED alternatives screening process.

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72-7	II. The RDEIR/SDEIS Fails to Provide an Accurate and Stable Project Description. [Footnote 3: For the entirety of Section II, the NGO Coalition requests the Sites Project Authority also refer to the analysis contained in the NRDC et al. RDEIR/SDEIS comments as well.] The RDEIR/SDEIS violates CEQA because it fails to use an accurate and stable project description. In particular, the modeling of operations in the RDEIR/SDEIS, which is the basis for the analysis of potential environmental impacts throughout the document, does not include the proposed mitigation measure FISH-2, Wilkins Slough Flow Protection Criteria. As a result, the quantitative analysis and modeling in the RDEIR/SDEIS does not analyze the project that is proposed in the RDEIR/SDEIS. [Footnote 4: See, e.g., RDEIR/SDEIS Appendices at 5A1-29, 5A2-28 to 5A2-33.] Additionally, different RDEIR/SDEIS chapters and appendices use different modeling and analyses, making inconsistent analysis throughout the document and therefore not a stable project description.	Please see Master Response 2, Alternatives Description and Baseline, regarding a stable Project description and Mitigation Measure FISH-2.1. Mitigation measures can be incorporated into the Project, eliminating the mitigation measure but retaining the substance of the requirement. Mitigation Measure FISH-2.1 was required to reduce potential life stage effects on salmonids by increasing the bypass flow requirement at Wilkins Slough based on peer-reviewed scientific information. The Final EIR/EIS Project description now incorporates the requirements of Mitigation Measure FISH-2.1, which have been refined and made more restrictive. The bypass flow requirement at Wilkins Slough is an element of the Project because it is an integral component of Project operations in terms of its water diversion criteria, rather than a separate measure distinct from Project operations and diversion criteria. Please also see Master Response 3, Hydrology and Hydrologic Modeling, regarding the modeled representation of Project operations. The impact analyses in the resource chapters evaluate the descriptions of Alternatives 1 through 3 in Chapter 2, Project Description and Alternatives. The exchanges and diversion criteria described in Chapter 2 are part of the alternatives. Operation of the alternatives, including diversion criteria and the use of exchanges, is incorporated in the modeling of the alternatives. Chapter 2 is supported by Appendices 2C, Construction Means, Methods, and Assumptions, and 2D, Best Management Practices, Management Plans, and Technical Studies, as well as the modeled representation of the alternatives described in Appendices 5A, Surface Water Resources Modeling of Alternatives; 5B, Water Resources System Modeling; and 5C, Upper Sacramento River Daily River Flow and Operations Model.

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72-8	Despite the absence of a complete Reservoir Operations Plan, the RDEIR/SDEIS also assumes that there will be water exchanges with Shasta and Oroville reservoirs in certain years. [Footnote 5: RDEIR/SDEIS at ES-12, 2-35 to 2-37, 5A-2-30 to 5A-2-33, Because these exchanges would be intended to "assist the [Central Valley Project] and [State Water Project] in meeting their regulatory obligations," RDEIR/SDEIS at 2- 35, these exchanges do not provide public benefits that justify public taxpayer expenditures for this project. These exchanges are effectively water supply benefits to the contractors of the CVP and SWP who are obligated to pay for meeting regulatory requirements of the CVP and SWP. Additionally, the NGO Coalition that this supposed benefit from the Project will incentive less spill at Oroville in the spring, an important seasonal time for cold-water fisheries.] However, there are no proposed agreements for such exchanges between the Central Valley Project ("CVP") or State Water Project ("SWP") and Sites, and this element of the Project is hypothetical. [Footnote 6: See id. At ES-10 ("exchanges of water may occur with the CVP and SWP") (emphasis added); id. At 2-35 (acknowledging that the Sites Reservoir Authority is in discussions with the U.S. Bureau of Reclamation ("USBR") and the California Department of Water Resources ("DWR") regarding potential exchanges).] Equally important, the RDEIR/SDEIS does not analyze the potential adverse effects that would result from such exchanges, including potential changes in river flows, redd dewatering, or reductions in juvenile salmon survival, and completely ignores the effects of exchanges with Folsom Reservoir. [Footnote 7: See RDEIR/SDEIS at 5-27; id. At 11-103 (admitting that the RDEIR/SDEIS needs to "better reflect the exchanges in the model," that these exchanges are difficult to model, and that the RDEIR/SDEIS underestimates the extent of potential exchanges that could occur under the proposed project). The RDEIR/SDEIS also admits that Sites Reservoir cannot release water to Glenn-Colusa Irrigation District ("GCID") and other participants located between the Hamilton City Pump Station and	Please see response to comment 72-7 regarding the Project description. The Project would work in conjunction with other reservoirs in the system (e.g., Shasta Lake), as described in Chapter 2, Project Description and Alternatives. As described in Section 2.5.2.1, Water Operations, subsection Coordination with CVP and SWP, this would allow other reservoirs to be operated such that they could release water for cold-water pool purposes (e.g., Shasta Lake). In addition, the diversion criteria described in the Chapter 2, Diversion Criteria section are part of the Project. Operation of the Project, including the diversion criteria and the use of exchanges, was incorporated in the modeling as part of the Project for the RDEIR/SDEIS and as described in Chapter 2. Exchanges are not speculative because they currently occur under existing conditions and because the Project would be integrated into the overall system of the State of California. Under existing conditions, the CVP and SWP each have responsibility for meeting objectives as defined in the Coordinated Operations Agreement, but they collaboratively decide the timing for each project to contribute to meeting objectives. Therefore, there are times when releases from Shasta Lake may be prioritized over Folsom Lake, and vice versa. Sites Reservoir exchanges with Folsom Lake were considered in the RDEIR/SDEIS as a potential benefit but were not included in the CALSIM modeling. Therefore, they are no longer included in operations of the Project in the Final EIR/EIS, and modeling results have not changed. Please refer to Master Response 3, Hydrology and Hydrologic Modeling, for further descriptions of Shasta Lake and Lake Oroville exchanges. The modeling has been refined for the Final EIR/EIS and is reflected in the impact analysis throughout the document. Chapter 5, Surface Water Resources, Section 5.4.1, CALSIM, summarizes some of the modeling results and assumptions related to exchanges. The impacts related to

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	Knights Landing, and that deliveries of water to those participants would be made by GCID and USBR. RDEIR/SDEIS at 2-34. The RDEIR/SDEIS does not appear to analyze the effects of additional Shasta Dam releases by the USBR to fulfill such exchanges, which could be particularly impactful to the environment in drier years.] As a result of all these deficiencies, all of the modeling of proposed operations in the RDEIR/SDEIS does not actually model or analyze the effects of the proposed Project or alternatives, and instead is inconsistent with the actual proposed Project. Therefore, the document fails to analyze the likely environmental impacts of the proposed Project and alternatives altogether.	changes in flow, redd dewatering, or reductions in juvenile salmon survival as a result of exchanges are addressed using modeling results and multiple lines of evidence in Chapter 11, Aquatic Biological Resources, including how Folsom Lake is currently operated under the 2020 environmental baseline conditions to meet requirements that would remain in place under operation of the Project. For a discussion of the modeling assumptions and baseline, please refer to Chapter 3, Environmental Analysis. Please refer to Master Response 5, Aquatic Biological Resources, regarding benefits to aquatic biological resources, including the benefits to the cold-water pool.
72-9	Key documents that make up the administrative record for this Project fail to consider the same project alternatives. The RDEIR/SDEIS considers four alternatives, including No Action, Alternative ("Alt") 1 (1.5 MAF reservoir), Alt. 2 (1.3 MAF reservoir), and Alt. 3 (1.3 MAF reservoir (with changes in partner investment compared to Alt. 2). The Final Feasibility Report prepared by the USBR in 2020 examines five alternatives, including, No Action, Alt. A (1.3 MAF reservoir with Delevan pipeline for intake and release), Alt. B (1.8 MAF reservoir with Delevan pipeline for release only), Alt. C (1.8 MAF reservoir with Delevan pipeline for intake and release), and Alt. D (1.8 MAF reservoir with Delevan pipeline for intake and release, for "Local Considerations"). [Footnote 8: North-of-the-Delta Offstream Storage Investigation Final Feasibility Report, USBR, December 2020.] The RDEIR/SDEIS considers 1.3 MAF and 1.5 MAF reservoir alternatives with no Delevan pipeline, while the feasibility study considers one 1.3 MAF reservoir alternative and three 1.8 MAF reservoirs, all with the Delevan pipeline. These two important documents fail to correlate. The feasibility report monetizes project benefits to determine the feasibility of the Project.	As described in Master Response 9, Alternatives Development, the features of alternatives, including Sites Reservoir capacity, conveyance systems, and operational scenarios, were conceptually developed and refined over time to maximize the achievement of the objectives. This process is described in Appendix 2A, Alternatives Screening and Evaluation, and Appendix 2B, Additional Alternatives Screening and Evaluation. Reclamation's federal feasibility process, the California Water Commission process, and the NEPA/CEQA processes are all separate though related. The processes move forward on different timelines and meet differing requirements of multiple entities. While Reclamation has issued a feasibility report with different alternatives when compared to those evaluated in the RDEIR/SDEIS, Reclamation is able to do so consistent with the federal feasibility process. Reclamation will align the feasibility report with the EIS through the preparation of an addendum to the feasibility report, which will evaluate the feasibility of a 1.5 MAF reservoir without the Delevan Pipeline. This addendum would be completed prior to any potential future Record of Decision.

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	And yet the alternatives reviewed in the report are not the same alternatives analyzed in the RDEIR/SDEIS. The documents' failure to consider the same alternatives makes it very difficult for the Coalition, let alone the general public, to understand the decision-making process for this Project.	Please see Master Response 2, Alternatives Description and Baseline, regarding the refinements to Project facilities and operations, and the timing of the CEQA and NEPA analyses and agency decisions.
72-10	III. The RDEIR/SDEIS fails to accurately assess environmental impacts. First and foremost, the regulatory baseline selected for analysis should not assume or include the United States Bureau of Reclamation's ("USBR") 2019 Biological Opinions because they have been withdrawn for reconsultation, and are subject to Court Orders in PCFFA, et al. vs. Raimondo and CNRA vs. Raimondo. The environmental baseline should, however, include all state-mandated clean water standards of D-1641 and WRO 90-5.	Please refer to Master Response 2, Alternatives Description and Baseline, regarding the baseline and information regarding the biological opinions, D-1641, and Water Right Order 90-5.
72-11	Second, the RDEIR/SDEIS' analysis of significant environmental impacts violates NEPA and CEQA because it assumes that changes in flow or storage less than 5 percent and/or 10 percent are insignificant. However, changes in flow and/or storage less than 5 percent or 10 percent frequently results in these levels dropping below key thresholds relating to the survival of native fish species, including species listed under the California Endangered Species Act ("CESA") and the federal Endangered Species Act ("ESA"). As a result, even changes in flow or storage levels that are a less than 5 percent change from the baseline clearly can and do cause significant adverse impacts to native fish species. Moreover, for salmon and other species, reductions in flow less than 5 percent have synergistic impacts that can be devastating for these species, as reduced flows reduce survival in multiple reaches of the Sacramento River and through the Delta, resulting in cumulatively significant reductions in survival. As a result, the RDEIR/SDEIS fails to disclose significant impacts of the proposed Project and alternatives to species listed under CESA and the ESA, for which mandatory findings of significance are warranted. The RDEIR/SDEIS must be revised to eliminate	The 5% or 10% values are not used as thresholds in making impact determinations in the EIR/EIS. Please see Master Response 5, Aquatic Biological Resources, for discussions of (1) thresholds and criteria used in analyses, (2) baseline and special-status fish species, and (3) how the permitting and planning processes differ.

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	the assumption that changes in flow or storage less than 5 percent and less than 10 percent are insignificant.	
72-12	The RDEIR/SDEIS claims that the CALSIM 2 model is not accurate enough to assess changes in flow or storage less than 5 percent, stating that, "Incremental flow and storage changes of 5% or less in modeled results are generally considered within the standard range of uncertainty associated with model processing. Therefore, for the purposes of the impact analysis, flow changes of 5% or less were considered to be similar to the NAA for comparative purposes. Changes in flow exceeding 10% were considered to represent a potentially meaningful difference." [Footnote 9: RDEIR/SDEIS at 11-57.] These 5 percent and 10 percent thresholds of significance are arbitrary, inconsistent with other NEPA/CEQA documents prepared by the USBR, and not supported by substantial evidence. Moreover, to the extent that CALSIM 2 fails to accurately assess impacts, the RDEIR/SDEIS fails to explain why it does not use the CALSIM 3 model, which has been publicly released by DWR and incorporates more recent hydrological data.	The 5% or 10% values are not used as thresholds in making impact determinations in the EIR/EIS. Please see Master Response 5, Aquatic Biological Resources, for discussions of thresholds and criteria used in analyses, as well as uncertainty. Please see Master Response 3, Hydrology and Hydrologic Modeling, for a discussion on the use of CALSIM II.
72-13	The RDEIR/SDEIS Is Fundamentally Flawed. First, the RDEIR/SDEIS provides no justification for why changes in flow less than the 10 percent threshold would not be considered a potentially meaningful difference. The lack of any explanation for this assumption regarding the 10 percent threshold makes it plainly arbitrary and capricious.	The 10% values are not used as thresholds in making impact determinations in the EIR/EIS. Please see Master Response 5, Aquatic Biological Resources, which addresses the adequacy of thresholds and criteria used in analyses.
72-14	The justification for the 5 percent threshold is also irrational and not supported by substantial evidence. Because CALSIM modeling is used in a comparative manner (meaning that it is used to model conditions under both the environmental baseline and action alternatives), there is no need for the 5 percent or 10 percent thresholds. Importantly, there is no basis to conclude that Sacramento River flow reductions due to diversions to storage under the proposed project are an illusory modeling artifact; instead, reduced flow in the Sacramento River is an inevitable and necessary	The 5% or 10% values are not used as thresholds in making impact determinations in the EIR/EIS. Please see Master Response 5, Aquatic Biological Resources, for a discussion of thresholds and criteria used in analyses, as well as uncertainty. Please see Master Response 3, Hydrology and Hydrologic Modeling, for a discussion on the use of CALSIM II.

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	consequence of diverting water from the Sacramento River to fill Sites Reservoir. While the CALSIM model does have significant flaws, failing to disclose changes in flow that are 5 percent (or 10 percent) or less as a significant impact misleads the public and decisionmakers. In fact, other CEQA/NEPA documents that use CALSIM modeling do not use a 5 percent or 10 percent thresholds for determining whether changes in flow or storage constitute a significant impact. For instance, the final CEQA/NEPA documents for the California WaterFix project did not use these thresholds, and the RDEIR/SDEIS provides no reasoned explanation why these assumptions are necessary since they have been omitted from other CEQA/NEPA analyses where CALSIM is used.	
72-15	The RDEIR/SDEIS does not consistently employ these thresholds. If a 5 percent change is significant, then to avoid impacts the project could simply limit diversions to levels that produce a less than 5 percent change in flow, yet it fails to do this. In addition, changes in Delta outflow from the proposed project are generally less than 5 percent, [Footnote 10: RDEIR/SDEIS at Table 5B3-5-1a.] yet as the RDEIR/SDEIS admits, the reduction in abundance of Longfin Smelt that results from reduced Delta outflow would be a significant impact requiring mitigation. [Footnote 11: See Id. at 11-271.]	Please see Master Response 5, Aquatic Biological Resources, for a discussion of thresholds and criteria used in analyses, as well as flow-related effects on longfin smelt.
72-16	Using these 5 percent and 10 percent thresholds results in the RDEIR/SDEIS failing to disclose significant environmental impacts for which mitigation is required. For instance, the RDEIR/SDEIS claims that the project and alternatives would cause a significant impact to winter-run Chinook salmon if diversions by the proposed project or alternatives caused flows in the Sacramento River to drop below 10,700 cubic feet per second ("cfs"). [Footnote 12: RDEIR/SDEIS at 11-130 to 11-131.] However, because the RDEIR/SDEIS assumes that a 5 percent reduction in flows in the Sacramento River is simply a modeling artifact and not a real change, the RDEIR/SDEIS would not identify operations that reduce flows by 4 percent, but drop	The 5% or 10% values are not used as thresholds in making impact determinations in the EIR/EIS. Please see Master Response 5, Aquatic Biological Resources, for a discussion of thresholds and criteria used in analyses. For the Final EIR/EIS, the OBAN model has been updated to adjust for flow-survival relationships. Note that the OBAN model provides only one piece of evidence forming the weight of evidence supporting impact conclusions. SALMOD assesses potential effects of water temperature and flows on annual juvenile Chinook salmon production, which is calculated as the

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	below 10,700 cfs, as a significant effect. Similarly, although the IOS life cycle model used in the RDEIR/SDEIS finds that on average, winter-run Chinook salmon escapement is 3 percent lower under Alternative 1A and 4 percent lower under Alternative 1B, with greater reductions in escapement in wetter water year types, see RDEIR/SDEIS at 11-128, the RDEIR/SDEIS wrongly concludes this is a less than significant effect. [Footnote 13: As the RDEIR/SDEIS admits, the OBAN model does not account for the flow:survival relationship in the Sacramento River, RDEIR/SDEIS at 11-129 to 11-130, and therefore the OBAN model does not provide an accurate assessment of the effects of the proposed project and alternatives on salmon. Similarly, the SALMOD model does not accurately assess the effects of the proposed project and alternatives, including because it does not account for the flow:survival relationships in the Sacramento River and through the Delta; SALMOD is an outdated and discredited model should not be relied upon.]	number of juveniles at the location of the RBDD. As such, and as characterized in the EIR/EIS, SALMOD ends at the location of the RBDD and makes no claim to assess effects in the Sacramento River downstream of this location or in the Delta. SALMOD has been used in several analyses of changing water infrastructure and operations projects. It has not been discredited or characterized as outdated in these documents. As with OBAN, it is one of several analyses used to form the weight of evidence approach to the impact analysis.
72-17	The use of arbitrary thresholds for identifying significant impacts is inconsistent with the CEQA guidelines, which require a mandatory finding of significance if a project would "cause a fish or wildlife population to drop below self-sustaining levels" or "substantially reduce the number or restrict the range of an endangered, rare or threatened species." Cal. Code Regs., tit. 14, § 15065(a)(1). Where, as here, populations of winter-run Chinook salmon, Longfin Smelt, Delta Smelt, and other species are below self-sustaining levels, any further impacts that causes those populations to further drop below self-sustaining levels is a per se significant impact under CEQA requiring mitigation. [Footnote 14: In addition, we note that CESA requires that the impacts of the project on listed species be fully mitigated and not jeopardize the continued existence of the species, see Cal. Fish and Game Code § 2081, regardless of whether those impacts are designated as significant under CEQA.] As one example, the RDEIR/SDEIS finds, using the IOS life cycle model, that Alternative 1A would reduce the long-term	Please refer to Master Response 5, Aquatic Biological Resources, regarding the thresholds and criteria used in the analysis. Impact determinations are not based on a single result or analysis but on the judgement of fish experts reviewing multiple lines of evidence and analyses reflecting the most current and best available science. In addition, Master Response 5 discusses CEQA and NEPA requirements, how they differ from the permitting processes (including under the California Endangered Species Act [CESA]), and the application of California Code of Regulations, Title 14, Section 15065(a)(a) as it relates to baseline conditions and special-status species.

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	abundance of winter-run Chinook salmon by 3 percent on average, as a result of reducing survival through the Sacramento River by 1 percent and through the Delta by 1-2 percent. RDEIR/SDEIS at 11-128 to 11-129. The population of winter-run Chinook salmon is not self-sustaining under baseline conditions, and the impact of Alternative 1A is therefore per se a significant impact requiring mitigation. Cal. Code Regs., tit. 14, § 15065(a)(1).	
72-18	The RDEIR/SDEIS fails to accurately analyze environmental effects and disclose significant environmental impacts because of the use of these arbitrary 5 percent and 10 percent thresholds. The RDEIR/SDEIS must be revised to exclude these improper assumptions regarding the effects of the proposed project and alternatives.	78. The 5% or 10% values are not used as thresholds in making impact determinations in the EIR/EIS. Please refer to Master Response 5, Aquatic Biological Resources, which addresses the adequacy of thresholds and criteria used in the analyses.
72-19	A. Impacts to the Trinity River. The modeling for Sites RDEIR/SDEIS purports not to harm the Trinity River because it shows no changes in the current pattern of exports, river releases and storage for the Trinity River Division ("TRD") of the Central Valley Project ("CVP"). However, since no operating plan for Sites has been released along with the RDEIR/SDEIS, it is impossible to ascertain if real time operations would impact the Trinity River. In fact, Chapter 11 categorically excludes impacts on the Trinity River (and thus on the Klamath River as a whole) from any analysis: "As described in Chapter 2, Project Description and Alternatives, the Project would not affect or result in changes in the operation of the CVP, Trinity River Division facilities (including Clear Creek) and thus Trinity River resources are not discussed or analyzed further in this chapter." (Page 11-2) This exclusion is not appropriate, especially as the USBR would (at least under Alternatives 1 or 3) be entitled to the use of between 7 percent and 25 percent of the volume of the Reservoir as an investment partner (i.e., entitled to storage in proportion to their investment), and would thus be able to store Trinity-origin water destined for the CVP in the Project	As explained in Master Response 8, Trinity River, the Project is not proposing to modify Trinity River operations, and it would not change or affect those operations or conditions (including temperature) in the Trinity River. See also Master Response 2, Alternatives Description and Baseline, regarding the purpose, timing, and content of the Reservoir Operations Plan, which is not needed for a thorough and adequate environmental analysis of the Project (as described in detail in Chapter 2, Project Description and Alternatives, of the EIR/EIS) and its potential impacts.

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	reservoir for various later uses. While this additional Trinity-origin water storage may not increase the total withdrawal of water from the Trinity by the USBR (which is bounded by the 2000 Record of Decision (ROD)), it would nonetheless mean that the timing and use of Trinity-origin flows to the CVP would or could substantially change. The environmental implications of these timing and use changes of Trinity-origin water should be at least discussed and analyzed.	
72-20	Furthermore, the Trinity River does not have temperature protection incorporated into USBR's state water permits. Until the State Water Resources Control Board (SWRCB) updates USBR's Trinity River water permits, objections to Sites Reservoir are valid because impacts can and will occur.	Please refer to Master Response 8, Trinity River, which addresses the status of Reclamation's water rights with respect to transbasin diversions from the Trinity River system into the Sacramento River system. Reclamation operates under State Water Resources Control Board (State Water Board) Water Right Order 90-5, which includes not adversely affecting the Trinity River temperatures for the benefit of the Sacramento River temperature. As the Project is not proposing any statutory, legal, contractual, or operational changes in the Trinity River system, and CVP water would not be stored in Sites Reservoir under the Project, no impacts on Trinity River water temperatures would result from the Project.
72-21	The Sites Project Authority claims that it has no authority to change TRD operations, which is true. However, it cannot say the same for one of its member agencies that controls the TRD - the USBR. Given that the USBR owns, operates, and has full control of the TRD and has a percentage ownership in Sites Reservoir, it's very clear that construction and operation of Sites could and likely would negatively impact the Trinity River.	Please refer to Master Response 8, Trinity River, regarding the ability to divert CVP water into Sites Reservoir, the protection of existing water rights, Reclamation's investment in the Project, and the scope of analysis with regard to the Trinity River system. Trinity River origin water is water appropriated under Reclamation's CVP water rights and would not be stored in Sites Reservoir under the Project. The Project would not result in any statutory, legal, contractual, or operational changes in the Trinity River system.
72-22	For instance, examination of the modeling for the 2017 Sites DEIR/DEIS found that during drier years, USBR would export more Trinity water to the Sacramento River in spring and late winter, while concurrently reducing Trinity exports during critical fall spawning months when Lewiston Reservoir	Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the adequacy of analysis; Master Response 2, Alternatives Description and Baseline, regarding coordination with the SWP and CVP and

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	warms substantially. The modeling, if done adequately, should have shown increased temperatures for spawning salmon in the Trinity River. This so-called "modeling error" has been corrected for the current RDEIR/SDEIS. However, without an operations plan, the modeling is meaningless, but the previous modeling exercise gives a clear example of how Sites could negatively impact the Trinity River through USBR operations.	exchanges and regarding a reservoir operation plan; Master Response 8, Trinity River, regarding the ability to divert CVP water into Sites Reservoir, the protection of existing water rights, Reclamation's investment in the Project, water temperature impacts on the Trinity River, and the scope of analysis with regard to the Trinity River system. The Project would not result in any statutory, legal, contractual, or operational changes in the Trinity River system.
72-23	The issue is "How can the Sites Project Authority be held responsible for USBR's actions related to the operation of Sites Reservoir?" There is a way to ensure that the Trinity River is not harmed by USBR's partial ownership of Sites, and that is through amendment of USBR's Trinity River water permits. The legislative and legal history of the TRD of the CVP is rife with requirements to "do no harm" to the Trinity River and its fishery. The proposed Sites Reservoir clarifies the need for USBR to have its state water permits amended to not harm the Trinity River because under the current regulatory scenario, harm to the Trinity River is inevitable.	Please refer to Master Response 8, Trinity River, regarding the protection of existing water rights, Reclamation's investment in the Project, and the scope of analysis with regard to the Trinity River system. The Project would not result in any statutory, legal, contractual, or operational changes in the Trinity River system.
72-24	What Constitutes "Harm" to the Trinity River. State Water Resources Control Board Water Rights Order ("WRO") 90-5 [Footnote 15: See State Water Resources Control Board Water Rights Order 90-05. Available online: https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/1990/wro90-05.pdf, last accessed 24 January 2022.] partly identifies what is "harm" to the Trinity River as it relates to the export of Trinity water for temperature control in the Sacramento River: "IT IS FURTHER ORDERED that Permits 11966, 11967, 11968, 11969, 11970, 11971, 11973, 12364, and 12365 and License 9957, on Applications 5627, 5628, 15374, 15375, 15376, 16767, 17374, 17376, 17375, and 15424, be amended to add a condition as follows:	Please refer to Master Response 8, Trinity River, regarding the Project water right application, ability to divert CVP water into Sites Reservoir, the protection of existing water rights, Reclamation's investment in the Project, water temperature impacts on the Trinity River, and the scope of analysis with regard to the Trinity River system. The Project would not result in any statutory, legal, contractual, or operational changes in the Trinity River system.

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	Permittee shall not operate its Trinity River Division for water temperature control on the Sacramento River in such a manner as to adversely affect salmonid spawning and egg incubation in the Trinity River. Adverse effects shall be deemed to occur when average daily water temperature exceeds 56°F at the Douglas City Bridge between September 15 and October 1, or at the confluence of the North Fork Trinity River between October 1 and December 31 due to factors which are (a) controllable by permittee and (b) are a result of modification of Trinity River operations for temperature control on the Sacramento River. If the temperatures in the Trinity River exceed 56°F at the specified locations during the specified periods, Permittee shall immediately file with the Chief of the Division of Water Rights a report containing project operational data sufficient to demonstrate that the exceedance was not due to modifications of Trinity River operations for water temperature control on the Sacramento River. If, within fifteen days, the Chief of the Division of Water Rights does not advise Permittee that it is violating this condition of its water right, Permittee shall be deemed not to have caused the exceedance in order to control temperature on the Sacramento River. This term is not to be construed as interfering with the U. S. Department of Interior Andrus Decision dated January 14, 1981, relative to Trinity River releases." The Trinity River protections found in WRO 90-5 do not provide any protection from other projects or purposes such as diversions to Sites Reservoir, hydropower production or water supply. Water Right Order 90-5 only limits USBR's export of Trinity River to do no harm to Trinity River salmon because of operations for temperature control on the Sacramento River. A more comprehensive definition of harm to the Trinity River can be found in the North Coast Regional Water Quality Control Board's "Water Quality	

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	Control Plan for the North Coast Region" (North Coast Basin Plan). [Footnote 16: "Water Quality Control Plan for the North Coast Region" Footnote 5, Table 3-1, page 3-8.00: Accessed at http://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/083105-bp/04_water_quality_objectives.pdf Daily Average Not to Exceed Period River Reach 60°F July 1- Sept 15 Lewiston to Douglas City Bridge 56°F Sept 15- Oct 1 Lewiston to Douglas City Bridge 56°F Oct 1- Dec 31 Lewiston to North Fork Confluence] While the North Coast Basin Plan Trinity River 56° temperature objective is included in WRO 90-5, the 60°F July 1- September 15 temperature objective is not. The USBR has made it very clear that because the 60°F objective is not included in WRO 90-5, that the USBR is not required to meet it and clearly does not meet it in many years such as 2021. Therefore, WRO 90-5 is not adequately protective of Trinity River salmon. In this case, the 60°F temperature objective is intended to protect holding adult spring Chinook salmon prior to spawning. Trinity River spring Chinook were recently listed as threatened under the California Endangered Species Act.	
72-25	The lack of full protection for the Trinity River from diversions for various uses other than temperature control on the Sacramento River leaves the Sites Project Authority vulnerable to criticism that the project will harm the Trinity River and the Lower Klamath River below the Trinity confluence because the USBR will have the ability to move Trinity water into Sites. How can this be fully mitigated? The answer lies with the history of WRO 90-5 dating back to 1989 and the need for promises to be kept, not broken.	Please refer to Master Response 8, Trinity River, regarding the ability to divert CVP water into Sites Reservoir, the protection of existing water rights, Reclamation's investment in the Project, and the scope of analysis with regard to the Trinity River system. Trinity River origin water is water appropriated under Reclamation's CVP water rights and would not be stored in Sites Reservoir under the Project. The Project would not result in any statutory, legal, contractual, or operational changes in the Trinity River system.

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	In 1989, State Water Resources Control Board WRO 89-18 [Footnote 17: See State Water Resources Control Board Water Quality Order 89-18. Available online: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/1989/wq1989_18.pdf, last accessed 24 January 2022.] directed that the Central Valley Basin Plan temperature objectives for the Sacramento River would be met through the water rights process, not Waste Discharge Requirements. It directed that the water right hearing for WRO 90-5 be initiated to amend USBR's CVP water rights to include temperature protection for Sacramento River salmon. The County of Trinity participated in the hearing, concerned that protections for Sacramento salmon might harm the Trinity River. As a result, the SWRCB made the following finding: "The State Board should conduct water right proceedings to consider whether the Bureau's permits should be modified to establish temperature limitations or other conditions to assure adequate water quality for protection of the fishery in the Trinity River." [Footnote 18: Id. At 17.] The SWRCB directed that a water right hearing on Trinity River temperatures be held: "IT IS FURTHER ORDERED that the Division of Water Rights shall initiate proceedings for the State Board to consider modifying the Bureau's permits for the Trinity River Unit of the Central Valley Project to set appropriate conditions to maintain water quality in the Trinity River. The State Board may review Trinity River water quality in the same water rights proceedings as it reviews upper Sacramento River water quality, or in subsequent proceedings to the extent that the issues may properly be considered separately." [Footnote 19: Id. At 18.]	

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	The commitment to protect the Trinity River water quality in Water Quality Order 89-18 was also carried into WRO 90-5: "We have already announced our intention to conduct a water right proceeding to consider whether the Bureau's Trinity River water rights should be modified to establish temperature limitations and other controls on water quality to protect the fishery in the Trinity River. See Order No. WQ 89-18. The proceedings on the Bureau's Trinity River water rights are expected to be commenced late this year. Our hearing record -for this decision is not adequate to set fishery protections for the Trinity River." [Footnote 20: State Water Resources Control Board Water Rights Order ("WRO") 90-5, pg. 31.] Unfortunately, the water right hearing to consider a full range of temperature protection measures for amendment of USBR's water permits has yet to be scheduled thirty-three years later. The USBR has expressed opposition to imposing any additional terms and conditions on its Trinity River water rights, calling it "unnecessary and ill-advised." The USBR's objection to conforming its Trinity River water permits to the North Coast Basin Plan water quality objectives stands as a roadblock in assuring that Sites Reservoir will not harm the Trinity River's fishery resources. If the USBR opposes updating its Trinity River water permits, objections to Sites are valid and will be the basis of water right protests.	
72-26	The Coalition therefore recommends a mitigation measure be added to the approvals for the Record of Decision, Notice of Determination, water rights and operating plan for the proposed Sites Reservoir as follows: Sites Reservoir operations by the Sites Project Authority and its members do not cause harm to the Trinity River, as defined by violation the Trinity River Temperature Objectives contained in the "Water Quality Control Plan for the North Coast Region." [Footnote 21: Ibid.] Construction permits shall not be issued, and construction shall not commence until the State Water Resources Control Board amends the Bureau of Reclamation's Trinity River	Please refer to Master Response 2, Alternatives Description and Baseline, regarding a reservoir operations plan and Master Response 8, Trinity River, regarding Reclamation's investment in the Project and the scope of analysis with regard to the Trinity River system. The Project would not result in any statutory, legal, contractual, or operational changes in the Trinity River system.

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	Water Permits to implement North Coast Basin Plan temperature objectives for the Trinity River.	
72-27	B. Impacts to the Sacramento River. The withdrawal of any water from the normal flows of the Sacramento River will have ecological consequences, those impacts being largely only a matter of degree. The Sacramento River Riparian Ecosystem Is Flow Driven -- Project-Induced Flow Changes Could Significantly Impact Riparian Habitat and Riparian-Dependent Species. In 1988, as little as two percent of the riparian, or riverside, forests along the Sacramento River remained. These forests support a wide variety of fish and wildlife species, many of which are declining towards extinction due to the loss of habitat. While the river's threatened and endangered salmon and steelhead depend on riverside forests to provide shaded riverine habitat and large woody debris for cover, threatened and endangered wildlife dependent on the Sacramento River's riparian habitat include: Western yellow-billed cuckoo (WYBC) -- The WYBC was listed as a threatened distinct population segment by the USFWS in 2014. A neotropical migrant, the WYBC typically nests in willow dominated riparian woodlands and forage in the expansive stands of Fremont cottonwood and willows. Continuing habitat succession has been identified as important in sustaining breeding populations. Historically common in riparian habitat throughout the Central Valley, only the Sacramento River and Sutter Bypass between Red Bluff and Colusa currently sustain isolated breeding populations. In addition to the adverse impact associated with the chronic loss of riparian habitat due to agricultural clearing and development, changes in channel dynamics resulting from the operation of water storage and conveyance facilities in the Sacramento River are major factors in the reduction of suitable cuckoo habitat. The continued operation of dams and	The RDEIR/SDEIS evaluates impacts on flow in the Sacramento River in Chapter 5, Surface Water Resources; Chapter 7, Fluvial Geomorphology; and Chapter 11, Aquatic Biological Resources. Impacts on vegetation and wetlands are evaluated in Chapter 9, Vegetation and Wetland Resources. Impacts on special-status wildlife, including western yellow-billed cuckoo and bank swallow, associated with the Sacramento River and riparian habitat from flow changes are discussed in Chapter 10, Wildlife Resources. Project operations effects on the Sacramento River are described in Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis.

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	diversions will likely have compounding effects on riparian habitats into the future. The effects of dam-induced reduction of mean annual peak discharge flow (CALFED 2000), reduction of flood discharge volume (Greco 2013), reduction in stream power (Fremier 2003), sediment starvation (Michalková et al. 2010), and reduced bank erosion rates and overbank deposition (Buer et al. 1989) all contribute to changes in successional riparian forest ecosystems. As the ability of the river channel to migrate laterally is restricted (Larsen et al. 2006) and the quantity of new land production reduces, the amount of new pioneer riparian forests is subsequently decreased (Greco et al. 2007). Even as the WYBC along the Sacramento River have continued to decline under current dam operations, Sites diversions could contribute to the loss of new riparian habitat required by the WYBC. [Footnote 22: Biological Opinion for the Reinitiation of Consultation on the Coordinated Operations of the Central Valley Project and State Water Project, USFWS 2019, pgs. 363-392.] Valley elderberry longhorn beetle (VELB) -- Listed by the USFWS in 1980 as a threatened species, the VELB was known to occupy only 10 locations on the American and Merced Rivers, and Putah Creek. Subsequent surveys have documented additional populations on the Sacramento and Feather Rivers, and other streams in the Central Valley, where the VELB is considered to be endemic. Even with the additional occupied sites identified, the VELB occupies less than 25 percent of its remaining Central Valley habitat due to fragmentation of riparian habitat. Elderberry shrubs are necessary for the VELB life cycle and is found in a variety of riparian and non-riparian habitats where its roots can reach the water table. Sites-induced flow changes in the Sacramento River between Red Bluff and Colusa could impact VELB habitat by reducing river flows that feed groundwater. Loss of riparian habitat due to development, infrastructure construction, and land conversion to agriculture, and the effects of non-	

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	native species have greatly contributed to the loss and fragmentation of VELB habitat. [Footnote 23: Ibid, pgs. 326-343.] Bank swallow (BS) -- A neotropical migrant found primarily in riparian and other lowland habitats in California during the spring-fall period, the BS nests in eroded banks along the Sacramento. Channelization and stabilization of banks of nesting rivers, and other destruction and disturbance of nesting areas, are major factors causing the marked decline of the BS in recent decades, leading to its listing as a state threatened species in 1989. Extirpated from southern California, the BS populations along the Sacramento and Feather Rivers comprise about 64 percent of its breeding colonies and up to 90 percent of the total California population. [Footnote 24: https://www.sacramentoriver.org/bans/index.php?id=bankswallows] The core of California's BS population, and therefore the most important habitat for long-term maintenance and recovery of the species, is found along the Sacramento River and its major tributaries. The most practical, and probably also the most cost-effective, system to maintain suitable BS habitat in perpetuity is through conservation of a natural riverine system. The BS is most affected by flooding and erosion disturbances, which can have positive and negative effects to this species. Flooding in freshwater environments causes erosion and soil deposition. Erosion creates the vertical banks needed for nesting, while the alluvial soils deposited during flood events are needed for burrows. Rapidly fluctuating water levels from reservoirs and storms can cause bank undercutting during the breeding season and the loss of nesting colonies. [Footnote 25: http://www.prbo.org/calpif/htmldocs/species/riparian/bank_swallow_acct2.html] Major modifications to riverine systems will make it difficult to save species like the BS from eventual extinction. Recovery of BS populations in California will not be possible without the protection of nesting habitat along the Sacramento River and its major tributaries. [Footnote 26: Bank	

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	Swallow Recovery Plan, CDFW 1992.] Riparian habitat along the Sacramento River was maintained by the river's natural flow regime -- with high flows in the winter/spring and low flows in the summer/fall. High flows erode banks and sand/gravel bars, destroying habitat but also renewing habitat by depositing sediment and seeds to create new sand/gravel bars. Willows initially populate new sand/gravel bars. Overtime, the willows help capture sediment, which may build the sand/gravel up to a terrace where a climax riparian forest of Fremont cottonwood and valley oak can be sustained. Shasta Dam and other reservoirs on tributaries have altered this natural flow regime, and significant diversions from the river to the Sites Reservoir has the potential to alter flows even further. Recognizing the importance of the Sacramento River's riparian ecosystem, state and federal agencies, as well as non-governmental organizations (NGOs) have spent millions of dollars (largely from state and federal taxpayers) to protect and restore riparian habitat along the Sacramento River. But little has been done to assure that flows in the Sacramento River are maintained to support this endangered ecosystem. As a result, taxpayer investments in the restoration of habitat along the river may be lost or stranded. Despite RDEIR/SDEIS assurances that impacts will be less than significant, Sites-induced flow changes have the potential to significantly impact the river's riparian habitat and species.	
72-28	Sacramento River Minimum Flow Standards Do Not Address Riparian Ecosystem Requirements. Minimum flows wer[e] established for the Sacramento River early in the 20th century to facilitate commercial navigation. They were later modified to provide for specific flows and water temperatures for the migration and spawning of salmon and steelhead. The current flow standard for the Sacramento River is 3,250 cfs from October through March in the segment of the Sacramento River affected by Sites diversions. [Footnote 27: NMFS	The Project is required to and will comply with existing standards for the Sacramento River. Water temperatures in the Sacramento River are and will continue to be managed through water releases from Shasta and Keswick Dams in accordance with the State Water Resources Control Board water rights and water quality criteria related to the CVP and SWP operations under the Project. The existing minimum bypass flows in the Sacramento River will remain unchanged under the Project (3,250 cubic feet per second [cfs] at the Red Bluff Diversion Dam and 4,000 cfs downstream at the Hamilton

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	Biological Opinion 1993.] The minimum flow from April to August is only 2,300 cfs. [Footnote 28: WRO 90-5.] Historically, flows in the Sacramento River have always been well above the minimum flows, but an extended multi-year drought may force the river to its near minimum flow (for example, the flow of the river at Bend in April 2015 was below 4,000 cfs). The flow standard does not address flows needed to maintain the Sacramento River's flow-driven riparian ecosystem.	City Pump Station), with the rate of diversion controlled by fish screen design, meeting all requirements mentioned in the comment. Flows at Bend Bridge would not be affected by diversions to Sites Reservoir because Bend Bridge is located upstream of the diversions, and, in severe drought years like 2015, there is unlikely to be water available for the Project to divert. Reclamation may decide to work with the Authority and the Project to provide additional temperature control in the upper Sacramento River. Reclamation could deliver water from Sites Reservoir in exchange for conserving cold water in Shasta Lake for temperature management. Under this Project-driven condition, flows at Bend Bridge could be reduced. Reclamation's decision to provide additional temperature control through the use of Shasta Lake is currently and would be required to be made in consultation with Reclamation's temperature task group and submitted to the State Water Board, pursuant to Water Rights Order 90-5. The Project is not required to change existing standards of the Sacramento River to maintain riparian ecosystems but rather evaluate and compare conditions using existing standards against conditions expected under the Project. Different agencies, including the State Water Resources Control Board, hold the authority to establish and change standards on the Sacramento River. The Final EIR/EIS analyses, described in Chapter 11, Aquatic Biological Resources, and Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis, show minor reductions in Sacramento River side-channel habitat. Using these side-channel effects as an indicator of water level changes along the main stem of the Sacramento River, there would also be small reductions in water levels in the river. Riparian ecosystems depend on groundwater, as well as the interaction between groundwater and streamflow, depending on the proximity of riparian species to a river

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		or floodplain. Many riparian tree and shrub species commonly found along the Sacramento River, including box elder, cottonwood, valley oak, willows, elderberry, and coyote brush, are phreatophytes, which have deep taproot systems to access the capillary fringe above groundwater (California Department of Water Resources 2022; The Nature Conservancy 2018). Small changes in the flow of a large perennial stream, such as the Sacramento River, under Project conditions would cause very minor, if any, decreases in the water table within the adjacent riparian habitat and would not decrease groundwater to a level below that accessed by riparian tree and shrub root systems.
72-29	CALSIM II and USRDOM Models May Produce Questionable Results. The RDEIR/SDEIS uses the CALSIM II and USRDOM models to estimate flow impacts on the Sacramento River. [Footnote 29: RDEIR/SDEIS Chap. 7, pg. 7-9.] Use of these models may produce questionable results. Much of the RDEIR/SDEIS analysis depends on the use of computer models with known deficiencies, particularly CALSIM II. CALSIM II's "daily flow disaggregation below Red Bluff Diversion Dam (RBDD) is known to be flawed...flows below RBDD are for testing and demonstration purposes only." [Footnote 30 ESSA Technologies, March 2008, SacEFT Analysis Results Appendix F, pg. F-3 (emphasis added).] According to a National Academy of Sciences assessment, many CALSIM II users believe that the model's primary limitation is its monthly time step and that the model should be used primarily for comparative analysis between scenarios, but its use for absolute predictions should be discouraged. This same assessment found that although use of models like CALSIM II is justified despite flaws, these models do not go far enough toward an integrated analysis of reasonable and prudent alternatives, and improvements were needed. [Footnote 31: National Academy of Sciences 2010, A Scientific Assessment of Alternatives for Reducing Water Management Effects on Threatened and Endangered	Please refer to Master Response 3, Hydrology and Hydrologic Modeling, regarding the accuracy and reliability of CALSIM II and Upper Sacramento River Daily Operations Model (USRDOM) and the use of these models because they are the best available tools. At the time of RDEIR/SDEIS analysis, CALSIM II was the only systems operation model that was jointly supported by California Department of Water Resources (DWR) and Reclamation. The SacEFT Analysis Results (ESSA Technologies Ltd. 2008, which is Appendix F to the Sacramento River Ecological Flows Study Final Report [ESSA Technologies Ltd. 2008]) and the Fish and Wildlife Coordination Act Report Appendix: Shasta Lake Water Resources Investigation, California (Bureau of Reclamation 2013, which is an appendix to the Shasta Lake Water Resources Investigation Draft EIS) are describing the disaggregation of CALSIM II flows with the Sacramento River Water Quality Model (SRWQM). Instead of SRWQM, the RDEIR/SDEIS relies upon HEC5Q for its temperature analysis and USRDOM for daily flow analyses. Please review Appendix 5C, Upper Sacramento River Daily River Flow and Operations Model Sections 5C.1, Introduction, and 5C.2, Methods, for more information.

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	Fishes in California's Bay Delta.] Further, even the USBR admits that the CALSIM II disaggregation process used to simulate daily flows for modeling water quality "results in a crude representation of flow and temperature conditions on a daily time scale." [Footnote 32: United States Bureau of Reclamation (USBR), Fish and Wildlife Coordination Act Report Appendix, Shasta Lake Water Resources Investigation, June 2013.] The RDEIR/SDEIS asserts that the problems with CALSIM II have been rectified with a new model, USRDOM. No information is provided as to the provenance and accuracy of this model, or whether it has been peer reviewed. It is referenced with an ambiguous notation – CH2M HILL 2011 – but neither this document or anything approximating a peer review is available on the internet. The USBR provided a copy of the 2011 CH2M-HILL report on USRDOM, which states: USRDOM allows the user to establish bounds on availability and operating criteria for diversion of excess flows to NODOS. It simulates realistic daily flow conditions in the Sacramento River based on the operations specified by CALSIM II under projected conditions (future) or historical operations for use in river morphology and fisheries analyses for NODOS. It also can be used to evaluate NODOS performance for ecosystem restoration objectives. Finally, it can be used to demonstrate incremental environmental impacts of various NODOS scenarios. [Footnote 33: USRDOM Development, Calibration, and Application, USBR & CH2MHILL, Aug. 2011, pg. 1-1.] Based on this description, we must note that the ability of USRDOM to evaluate Sites performance for ecosystem restoration objectives is only as good as the evaluator's basic assumptions. If the evaluator assumes that a less than 5 percent modification in current flows is minimal, they will assume less than significant impacts. It is just another modeling tool that can simulate changes but not necessarily determine whether those changes are significant.	In A Scientific Assessment of Alternatives for Reducing Water Management Effects on Threatened and Endangered Fishes in California's Bay Delta (National Research Council 2010), the concluding remarks specifically note the lack of life-cycle models as an issue with the quantitative analysis, not the use of CALSIM II. Two life-cycle analyses, IOS and OBAN, for its quantitative analysis are used in the EIR/EIS.

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	In response to a query, a Bureau of Reclamation employee stated that as far as they know, USRDOM has not been formally peer reviewed. Four other models utilized to analyze various Sites operations impacts on the Sacramento River are based on the CALSIM II/USRDOM models, which increases risk and uncertainty if these models are inadequate and/or inaccurate.	
72-30	When it comes to specific flows needed for specific purposes, averages are virtually useless. If CALSIM II says the average flow in the Sacramento River during the month of March is 10,000 cfs, the public has no way of knowing whether this average reflects 10,000 cfs of flow for all days of that month or 20,000 cfs of flows for half of the month and zero flows for the other half. A crude example perhaps, but a world of consequences, intended or not, can be hidden in documents based on the monthly average flow. A 2006 review of the CALSIM II model for the San Joaquin River raised this significant issue: Users must take responsibility for model selection and application, and they must accept the responsibility for decisions that they make with information produced by the model. Relying on an external body to provide a blanket endorsement covering all possible applications is a dangerous practice. It tempts users to avoid accountability for their work. It tempts decisionmakers to place responsibility on general model reviews which are remote from a particular application. Further, it opens the door to intentional and unintentional abuse, negligence or complacency by model users and developers, or their managers who may shift responsibility to tools or some external general review panel for decisions made or actions recommended based on their use of a model. [Footnote 34: San Joaquin River Valley CALSIM II Model Review, D. Ford, L. Grober, T. Harmon, J.R. Lund (Chair), D. McKinney, California Bay Delta Authority Science Program and California Water and Environmental Modeling Forum, 2006.]	Please refer to Master Response 3, Hydrology and Hydrologic Modeling, regarding the use of CALSIM II for the impact analysis. Results are used and presented in the EIR/EIS depending on the impact mechanism evaluated. The methods of analysis for the impact assessments vary, ranging from qualitative to reliance on general conclusions from the CALSIM II results, to detailed post-processing of monthly CALSIM II or daily USRDOM results, to secondary modeling based on CALSIM II or USRDOM results. The methods rely on the most appropriate and best available information and are described in each methodology section of the EIR/EIS chapters. The quoted text in the comment from the California Bay-Delta Authority Science Program and California Water and Environmental Modeling Forum [2006 review of the CALSIM II model] is retrieved from the Model Endorsements section. In the section, the authors do not "in any way certify or endorse the model [CALSIM II] presented. On the other hand, we do not disapprove of or discourage its use by knowledgeable users." To continue the quoted text from the comment, "Good decisions require good information. Careful application of an appropriate model will yield that information. Certification of the model does not guarantee production of good information. Lack of certification does not preclude it" (Ford et al. 2006). As noted in Master Response 3, Hydrology and Hydrologic Modeling, the CALSIM II model is the best available science for this analysis. CALSIM II has been carefully applied to support the

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		quantitative effects analysis. Appropriate use is documented in Appendix 5B, Water Resources Modeling System.
72-31	CALSIM II/USRDOM Predicted Flow Changes May Not Be as Minimal as They Appear Because Riverine/Riparian Ecosystems Are Very Sensitive to Human-Caused Flow Changes. Using the CALSIM II/USRDOM models, the RDEIR/SDEIS predicts monthly average flow changes ranging from a 1 percent increase in February at the Bend Bridge to up to a 5 percent decrease in flows below Red Bluff in February. [Footnote 35: RDEIR/SDEIS, Table 7-4, Chap. 7, pg. 7-18.] Please note that these percentages are monthly averages -- daily flow changes may be much greater but are not shown by the CALSIM II model. Based on these low "system-wide" averages, the RDEIR/SDEIS concludes that Alternatives 1-3 will not substantially alter the natural river geomorphic processes and existing river geomorphic characteristics, and impacts would be less than significant and would have no adverse effect on the Sacramento River. [Footnote 36: The RDEIR/SDEIS determines that this impact is Less Than Significant (LTS) under CEQA and No Effect (NE) under NEPA. For the CEQA analysis, the document concludes that operations under Alternatives 1-3 "...would not substantially alter natural river geomorphic processes and existing geomorphic characteristics and impacts would be less than significant." For the NEPA analysis, it also concludes that Alternatives 1-3 "...would have no adverse effect." RDEIR/SDEIS, Chap. 7, pgs. 7-19, 7-21, 7-22.] Riverine ecosystems are governed by patterns of temporal variation in river flows. Flows will be modified due to climate change and the near-ubiquitous human control of river flow, with severe effects on fish and wildlife species. Riverine ecosystems are particularly susceptible to flow	A key feature of hydrologic conditions in California is high year-to-year variability. This variability has been captured into both CALSIM II and USRDOM via the large period of record. While daily flow changes may sometimes be greater or less than the monthly flow changes, the differences between the daily values and the monthly values would be relatively minimal at the larger flows that perform geomorphic work due to diversions being limited by pumping capacity at Red Bluff and Hamilton City. At lower flows, percent reductions in river flow associated with the Project would be limited by diversion restrictions that protect flow in the Sacramento River. Diversions would primarily occur in high flow conditions during which geomorphic processes and changes to riparian vegetation establishment are anticipated to remain relatively unchanged compared to the No Project Alternative. Based on the analysis presented, minor flood reduction is expected to occur within the Sacramento River, and the decrease in monthly average flows would become smaller in the downstream direction (i.e., percent decreases in flow would be most pronounced in the vicinity of the actual diversions). As described in Chapter 28, Climate Change, the effects of climate change are expected to increase hydrologic variability and precipitation falling as rain instead of snow, and flooding and drought may increase. Climate change is expected to cause more extreme precipitation events and larger floods. It is also expected to raise winter temperatures, causing more precipitation to fall as rain instead of snow, which accelerates runoff timing, concentrates runoff in higher peak flows, and leaves less snow available to melt and augment flows later during the lower flow season. Diversions to

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	changes. A scientific study summarized the sensitivity of riparian ecosystems: "even slight modifications to the historic natural flow regime had significant consequences for the structure of riparian plant networks. Networks of emergent interactions between plant guilds were most connected at the natural flow regime and became simplified with increasing flow alteration. The most influential component of flow alteration was flood reduction, with drought and flow homogenization both having greater simplifying community-wide consequences than increased flooding. These findings suggest that maintaining floods under future climates will be needed to overcome the negative long-term consequences of flow modification on riverine ecosystems. [Footnote 37: Flow regime alteration degrades ecological networks in riparian ecosystems, Jonathan D. Tonkin, et al., Nature Ecology & Evolution, published online Nov. 27, 2017.]	storage in Sites Reservoir and pulse flow protections set by operating criteria could mitigate more severe flooding and severe low flows caused by climate change while supporting natural flow regimes. Riparian/riverine ecosystems are sensitive to changes in flow regime, particularly flooding; however, riparian ecosystems are also highly dependent on groundwater, as well as the interaction between groundwater and streamflow, depending on the proximity of riparian species to a river or floodplain. The riparian tree and shrub species commonly found along the Sacramento River are phreatophytes, which have adapted to fluctuating water supplies by developing deep root systems to access groundwater. Many riparian tree and shrub species commonly found along the Sacramento River, including box elder, cottonwood, valley oak, willows, elderberry, and coyote brush, are phreatophytes, which have deep taproot systems to access the capillary fringe above groundwater (California Department of Water Resources 2022; The Nature Conservancy 2018). Groundwater level decline can have negative effects on riparian vegetation. However, the small changes in the flow of a large perennial stream, such as the Sacramento River, would cause very minor, if any, decreases in the water table within the adjacent riparian habitat. As described in Chapter 8, Groundwater Resources, Impact GW-2, simulated Sacramento River groundwater elevations for Project operations were almost identical to the No Project Alternative conditions. Project operations would, therefore, not decrease groundwater to a level below that accessed by riparian tree and shrub root systems. With only minor changes to water levels in the Sacramento River, stress from lack of water on riparian vegetation would not be anticipated to occur. Based on the physical-biological interactions of riparian habitat with groundwater and streamflows and the current modeling results,

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		described above, riparian habitat would not be adversely affected by Project operations. Refer to Master Response 3, Hydrology and Hydrologic Modeling, regarding the use of CALSIM II and USRDOM and best available tools. Please see Master Response 5, Aquatic Biological Resources, regarding the use of USRDOM and the results it provides.
72-32	In Below Normal to Critically Dry Years, The Percentage of Total Flows That Are Subject to Project Withdrawal Will Be Most Important in Terms of Their Ecological Consequences. The NGO coalition notes that RDEIR/SDEIS Table 11-6 (Red Bluff) withdrawals are projected to be as high as 14 percent of total river flow in Below Normal-classed years, 10 percent in some Dry years, but scaled down to a maximum of 4 percent in some Critically Dry years, depending upon the alternative chosen. These rates do not appear alarming, if correct. But in Table 11-7 (Hamilton City), diversions are projected to be up to 25 percent of total flows in Below Normal years for some alternatives, and up to 24 percent in some Dry years (June) and up to 25 percent in some Critically Dry years. Additionally, these two diversions would be cumulative, i.e., they are separate diversions at different points -- but from the same river. What are the total reductions in instream flow that result?	The 25% mean diversion rate at Hamilton City cited by the commenter (i.e., in June of Critically Dry Water Years) is essentially the same as the No Project Alternative and therefore reflects the type of diversions occurring under baseline conditions. For the example that the commenter gave at Red Bluff, the up-to-4% mean diversions occurred in the month of March in Critically Dry Water Years (with 0% diversions under the No Project Alternative). The corresponding mean diversion at Hamilton City in March of Critically Dry Water Years is 1% under the No Project Alternative, as well as Alternatives 1, 2, and 3. As the commenter notes, the Red Bluff and Hamilton City intakes are separate diversions from the same river; there are other points of diversion as well as points of addition (i.e., tributaries) between the two intakes. Therefore, the diversions are best thought of as percentages of the flow approaching each intake. In the example month of March of Critically Dry Water Years cited by the commenter, the total mean diversion is 4% of flow at Red Bluff and 1% of flow at Hamilton City.
72-33	Another concerning aspect of Table 11-7, there seems to be little difference in Critically Dry Years during May through November -- under both NAA and all the Alternatives -- with even less withdrawals projected in some scenarios as between NAA and the Alternatives during these months, as follows [Footnote 38: RDEIR/SDEIS, pg. 11-91.] [See Exhibit 1]. There is no explanation why, in the without the Project scenario (NAA), up to 24% of the	Table 11-7 in Chapter 11, Aquatic Biological Resources, of the RDEIR/SDEIS presents the total diversions at Hamilton City, averaged by month and water year type. The total diversions at Hamilton City may include: GCID diversions (which exist in the No Project Alternative) and Sites diversions. Any diversions presented under the No Project Alternative represent the GCID diversions from the

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	total volume of the Sacramento River is nevertheless withdrawn, while under the Alternatives there may in fact be less water withdrawn than under the NAA scenario. There are similar anomalies elsewhere in the Table. The Coalition would appreciate clarification from the Project proponents on this discrepancy.	Sacramento River. Per the in-lieu exchange operation (documented in the Project description), there are times when GCID diversions under Alternatives 1, 2, and 3 are lower than GCID diversions under the No Project Alternative. Table 11-7 in Chapter 11, Aquatic Biological Resources, of the RDEIR/SDEIS presents the total diversions at Hamilton City, averaged by month and water year type. The total diversions at Hamilton City may include: GCID diversions (which exist in the No Project Alternative) and Sites diversions. Any diversions presented under the No Project Alternative represent the GCID diversions from the Sacramento River. Per the in-lieu exchange operation (documented in the Project description), there are times when GCID diversions under Alternatives 1, 2, and 3 are lower than GCID diversions under the No Project Alternative. Additionally, the commenter may consider differences in percentage of river flow diverted as concerning anomalies in terms of the Alternatives 1, 2, and 3 having lower percentages of river flow diverted. Lower percentage of river flow does not necessarily equate to less water withdrawn because the percentage diverted depends not only on the amount of water withdrawn, but also the amount of flow in the river approaching the intake. However, as shown in plots provided in the RDEIR/SDEIS such as Figures 5B1-2-6 and 5B1-2-7 in Appendix 5B1, Project Operations, for example, there are lower absolute rates of diversion at Hamilton City under Alternatives 1, 2, and 3 in May through August. These lower rates are attributable to overall Project operations, wherein less flow is required to be diverted during these months and water year types as a result of water being available for release by Sites Reservoir.

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72-34	[Exhibit 1: Table showing values from Table 11-7]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
72-35	There also appears to be no effort to calculate the cumulative total withdrawal with both diversions (i.e., Red Bluff and Hamilton City intakes) in operation versus the total flow. There is also no way to assess how different the current Sacramento River flow is today from "unimpeded" or natural pre-development flows, and as a result, there is no way to compare resulting Project-created impaired flow to unimpaired flows. There are, of course, also numerous other existing water withdrawals from the Sacramento River north of Hamilton City, and those have also cumulatively reduced total flows. As detailed in other sections of these comments, the Coalition believes the assessment of the cumulative impacts of all these current withdrawals should be made in order to place planned Project withdrawals into ecological and hydrological perspective.	The effects of past projects are incorporated into the No Project Alternative and are therefore included in the impact analysis. Please see Master Response 5, Aquatic Biological Resources, regarding the baseline conditions of fishery resources. While the CEQA and NEPA regulations regarding analysis of cumulative impacts differ slightly, they both require analysis of the impacts of the proposed action together with past actions (or baseline) and reasonably foreseeable future actions. The baseline for aquatic biological resources is described in Chapter 11, Aquatic Biological Resources, and analyzed in that chapter to assess the effects of the project on aquatic resources. Chapter 31, Cumulative Impacts, assesses the cumulative impacts of the project, including impacts on aquatic species. The environmental setting of Chapter 11 describes current conditions for special-status fish species as already affected by past and current actions, including reservoir construction, diversions, and other hydrologic modifications. These current conditions and their effects on survival (such as effects on spawning area and entrainment) are part of the reason these fish are listed as special-status species. Dam construction has diminished upstream spawning area but provides some level of protection against dewatering as a result of controlled reservoir releases. These current conditions are represented in the No Project Alternative and are considered in the impact assessments in Chapter 11.

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		Both the diversions at Red Bluff and Hamilton City intakes as well as total Sites Reservoir diversions are presented in the output tables in Appendix 5B1, Project Operations. These diversions are included in the modeling, and results for Sacramento River flows consider the effects of the combined Sites Reservoir diversions. The Red Bluff diversion was previously built to accommodate up to a total capacity of 2,500 cfs and, as described in Chapter 2, Project Description and Alternatives, " …two additional 250-cfs, 600 horsepower (hp) vertical axial-flow pumps [are to be installed] into [two] existing concrete pump bays at the Red Bluff Pumping Plant (RBPP). The addition of these two pumps would increase the capacity from 2,000 to 2,500 cfs." Please refer to Master Response 3, Hydrology and Hydrologic Modeling, regarding the modeled representation of diversions throughout the watershed. The CALSIM II simulations include the existing water withdrawals from the Sacramento River that are mentioned in the comment.
72-36	Summary. Overall, due to the problems with the CALSIM II/USRDOM models, the RDEIR/SDEIS may be underestimating potential impacts associated with Sites-induced diversions on the flow-dependent Sacramento River riparian habitat. Even if the models are accurate, the RDEIR/SDEIS is ignoring the scientific consensus that Sacramento River riparian habitat is ultra-sensitive to even slight modifications in the natural flow regime. Riparian dependent species along the Sacramento River have continued to decline under the extensively modified flow regime caused by Shasta Dam operations and will likely continue to decline under even minor flow modifications caused by	Please see Master Response 3, Hydrology and Hydrologic Modeling, regarding the use of CALSIM II and USRDOM and best available tools used in the EIR/EIS. Impacts on flow in the Sacramento River are evaluated in Chapter 5, Surface Water Resources; Chapter 7, Fluvial Geomorphology; and Chapter 11, Aquatic Biological Resources. Project operations effects on the floodplains and the Sacramento River are described in Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis. Chapter 9, Vegetation and Wetland Resources, describes the baseline conditions of riparian habitat along the Sacramento River and discusses operations impacts on riparian

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	Sites operations. The RDEIR/SDEIS should be withdrawn and a revised analysis provided that better assesses potential adverse impacts to the Sacramento River's riparian habitat and species and proposes mitigation measures to reduce these impacts to less than significant.	habitats in the Methods of Analysis, Operation section and Impact VEG-2. Riparian habitats along the Sacramento River have been identified as natural communities associated with groundwater and are therefore most dependent on and vulnerable to decreases in groundwater levels (Groundwater Resource Hub 2021). As described in response to comment 72-28, small changes in the flow of a large perennial stream, such as the Sacramento River, under Project conditions would cause very minor, if any, decreases in the water table within the adjacent riparian habitat and would not decrease groundwater to a level below that accessed by riparian tree and shrub root systems.
72-37	78. 1. Accounting of Sacramento River Flows I've [Greg Kamman with CBEC Eco Engineering] completed a monthly accounting of long-term full simulation changes in Sacramento River flow for Alternative 1A minus No Action using data reported in Appendices 5B2 (River Operations) and 5B1 (Project Operations). Using these data, I was able to account for all flow changes due to project diversions and return flows on the Sacramento River except for those reported between Hamilton City and Wilkins Slough. I assume that increases in river flow under Alternative conditions may be due to reduced (relative to No Action) high flow diversions via the Ord Ferry, Moulton, Colusa, and Tisdale weirs. The reduction in flow diversions via the weirs is due to lower peak flows on the river resulting from upstream diversion to Sites Reservoir. The increase in river flow rates under Alternative conditions due to reductions in weir diversions occur in the winter months and in similar proportions to diversions reported for Freemont Weir -- the only weir diversions reported in appendices 5B1 and 5B2. Appendix 5A-7 describes daily spill pattern via Ord Ferry, Moulton, Colusa and Tisdale weirs and indicates that daily patterns were developed and	Appendix 5B2, River Operations, in the Final EIR/EIS has been revised to include spills into the Sutter Bypass. These results complete the mass balance, and the new information does not change the environmental impact findings/analysis.

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	integrated into the USRDOM and CalSim II modeling. However, no record of these daily spills is provided in DEIS/R appendices. This is the most logical explanation for the additional flow under Alt 1A as I don't see any major drainages contributing flow to the Sacramento River along this reach. At the very least, this unreported/unaccounted for change in flow should be addressed in the environmental document.	
72-38	2. Sites Reservoir Temperature Modeling Appendix 6C presents River temperature modeling results including the Sacramento River at various locations between Keswick Reservoir (upstream) and Butte City (downstream). Butte City is located downstream of both Sites Reservoir diversion sites (Red Bluff and Hamilton City), but approximately 50-miles upstream of the location where return flows from Sites Reservoir enter the Sacramento River. It is my opinion that the RDEIR/SDEIS should have completed River temperature modeling for this 50-mile intervening stretch, as well as downstream of the Colusa Basin Drain (CBD) discharge point into the Sacramento River, to fully address changes in river water temperature and potential impacts to instream aquatic habitat. In short, temperature modeling presented in the RDEIR/SDEIS does not adequately evaluate how the project may impact Sacramento River water quality and habitat conditions downstream of Hamilton City and through the Yolo Bypass, as discussed below.	Although the HEC5Q water temperature model of the Sacramento River ends at Butte City, the Sites Reservoir Discharge Temperature Model (in Appendix 6D, Sites Reservoir Discharge Temperature Modeling) estimates the temperature effect of Colusa Basin Drain discharges into the Sacramento River. Therefore, the EIR/EIS evaluates water temperature using multiple tools from all locations that could be affected as a result of diversions or releases under operating conditions.
72-39	3. Impacts of Sites Reservoir of Yolo and Sutter Bypass Fishery Habitat Review of Appendix 11M indicates that all three alternatives will impact fishery rearing potential in both the Sutter and Yolo Bypasses. These impacts occur in two ways. First, modeling results indicate that there will be a reduced opportunity for juvenile fish to enter the Sutter and Yolo Bypasses for rearing under all Alternatives. This results in less fish available to take advantage of rearing habitat in the Bypasses.	Analyses of juvenile fish passage for Chinook salmon into the Yolo Bypass via Fremont Weir and at the three Sutter Bypass weirs have been added to the Final EIR/EIS using several different methods. These additions can be found in Chapter 11, Aquatic Biological Resources, Section 11.4, Impact Analysis and Mitigation Measures, Impact FISH-2: Operations Effects on Winter-Run Chinook Salmon, under the subheadings Juvenile Entry into Yolo Bypass at Fremont Weir and Juvenile Entry into Sutter Bypass at Mouton, Colusa, and

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	The second impact is reduced duration of inundated rearing habitat. Modeling results indicate a reduced duration of inundated habitat from January through June in the Yolo Bypass, with the largest reduction (-7%) if inundation occurring during dry year-types under all Alternatives (Table 11M-1). Table 11M-2 also indicates large reductions (average -7.0 to - 8.4%) in average daily inundated habitat during the month of July for all alternatives. Modeling results do not indicate reductions in daily inundated habitat for juvenile salmonids in the Sutter Bypass (Table 11M-4). Habitat modeling results for Yolo Bypass indicate increases in daily inundation habitat during the months of August through November for Alternative 1A and 1B. However, the RDEIR/SDEIS does not address how this change may affect juvenile salmon rearing in the bypass so late in the year.	Tisdale Weirs. The results of all methods, as discussed in Chapter 11, Aquatic Biological Resources (under Impact FISH-2: Operations Effects on Winter-Run Chinook Salmon, under the subheadings Juvenile Entry into Yolo Bypass at Fremont Weir and Juvenile Entry into Sutter Bypass at Moulton, Colusa, and Tisdale Weirs), show similar or somewhat less entry of juveniles into the bypasses under Alternatives 1, 2, and 3 relative to the No Project Alternative, which does not result in a change in impact determination. The July reductions in inundated habitat acreage under Alternatives 1, 2, and 3 are small in absolute terms (<10 acres), and California native fish species that rely on Yolo Bypass inundated habitat largely have already emigrated from it by July (Sommer et al. 2001). For the same reasons, the increases in Yolo Bypass inundation from August through November would not affect native fish species, except perhaps winter-run Chinook salmon juveniles, which may enter the bypass with spills that periodically occur as early as November. The potential effects on the most affected fish species caused by the changes in inundated floodplain acreages resulting from Alternatives 1, 2, and 3 are discussed in Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis, Section 11M.3.1, Yolo Bypass Weir Spill Events and Inundated Floodplain Habitat Area.
72-40	1. Are there juvenile salmon present in Yolo Bypass at this time of year (August through November) to take advantage of these increases in inundation?	Except in Novembers with flows high enough to cause the Fremont Weir to spill, there are no juvenile salmon in the Yolo Bypass from August through November. When the Fremont Weir spills in November, juvenile salmon are expected to take advantage of inundated habitat in the Yolo Bypass, which would be facilitated by the notching of Fremont Weir (see, for example, Table 2 of Acierto et al. 2014).

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72-41	2. Is there any benefit to the juvenile salmon due to the late season increases in inundation?	See response to comment 72-40 regarding seasonal inundation of the Yolo Bypass.
72-42	3. What is the temperature of the water being delivered into the Yolo Bypass via Sites conveyance canal/pipeline [Footnote 40: Page 2-21 of the RDEIR/SDEIS states, "During Project operations, water released from Sites Reservoir would be conveyed south of the reservoir using the existing TC Canal and a new Dunnigan Pipeline. The water would flow south about 40 miles to near the end of the TC Canal, where it would be diverted through a new intake to the Dunnigan Pipeline. The flows would subsequently be conveyed to the CBD and ultimately reach the Sacramento River."]?	The temperature of the water being delivered to Yolo Bypass via the Sites Reservoir conveyance canal/pipeline is provided in Appendix 6D2, Water Temperature at Downstream Locations, Figures 6D2-5-1, 6D2-6-1, 6D2-5-11, 6D2-6-11, 6D2-5-12, and 6D2-6-12.
72-43	Like the River water temperature modeling results presented in Appendix 6C and discussed under item 2 above, Appendix 11D (Fisheries Water Temperature Assessment) does not provide an evaluation of project effects on water temperature and salmonid habitat below Hamilton City. Thus, the RDEIR/SDEIS does not provide an adequate impact assessment that addresses how return flows from Sites Reservoir to the Sacramento River or Yolo Bypass impact adult or juvenile salmonid habitats.	The downstream limit of the HEC5Q model is Hamilton City, precluding analysis in the same manner used to populate Appendix 11D, Fisheries Water Temperature Assessment, results. However, results of modeling Sites Reservoir discharge temperatures into the Sacramento River are presented in Appendix 6D, Sites Reservoir Discharge Temperature Modeling. Temperature-related impacts on each salmonid and sturgeon species are included in the Sites Reservoir Release Effects subsection of each applicable fish impact in Chapter 11, Aquatic Biological Resources, Section 11.4, Impact Analysis and Mitigation Measures.
72-44	The RDEIR/EIS does not disclose impacts to fish production from lack of inundation of Yolo Bypass. The Coalition is very concerned with the impacts to floodplain habitat for Tribal Trust and endangered species habitat and fish production from the changes in flows from the Sites Project. These impacts will undermine millions of dollars of commitment to fisheries restoration. As hydrologist Greg Kamman alludes to above, the most severe impacts seem like they will occur in the Yolo Bypass and nearby floodplain areas due to low bypass flows and the changing of timing and duration of inundation. By not	The impact analyses in Chapter 11, Aquatic Biological Resources, and Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis, of the RDEIR/SDEIS identify reductions in the acreage of Yolo Bypass inundated habitat during the winter-spring period, when juvenile salmonids are most likely to access the bypass via Fremont Weir, as an adverse effect of the Project (see Appendix 11M, Section 11M.3.1, Yolo Bypass Weir Spill Events and Inundated Floodplain Habitat Area, and Chapter 11, Section 11.4, Impact Analysis and Mitigation Measures, Impact FISH-2: Operations Effects on Winter-Run Chinook Salmon, subheading Yolo Bypass Inundated Area). However, as shown

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	protecting a bypass flow of 14,000 cfs for the months of December through May, this Project will substantially impact spring run, winter run, and fall run Chinook salmon production and survival rates.	in Table 11-14, the largest overall reduction for this period is about 100 acres (<2%). Any reduction in habitat acreage has a potential to affect fish production, but given the small acreages generally affected, the effect would likely not be substantial, as indicated in Impact FISH-2: CEQA Significance Determination for Alternatives 1, 2, and 3.
72-45	The draft Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project EIS/EIR states: "Based on analysis of rotary screw trap (RST) data at Knights Landing and Delta fish survey data, a large pulse of juvenile winter-run Chinook salmon have been observed to emigrate past Knights Landing and into the Delta during and shortly after the first large fall storm event where flows reach approximately 14,000 cfs at Wilkins Slough (del Rosario et al. 2013). Although juvenile Chinook salmon are in the Sacramento River throughout the year, they can only access the Yolo Bypass floodplain following a Fremont Weir overtopping event. Juveniles have been observed in the Yolo Bypass between December and July, with presence peaking between February and April (DWR 2016, as cited in DWR and Reclamation 2017)." [Footnote 41: See USBR draft Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project EIS/EIR, pgs. 8-10, 8-11.] Review of Appendix 11M indicates that all three Project alternatives will impact fisher rearing potential in both the Sutter and Yolo Bypasses. These impacts will occur in two ways. First, modeling results indicate that there will be a reduced opportunity for juvenile fish to enter the Sutter and Yolo Bypasses for rearing under all Alternatives. This results in less fish available to take advantage of rearing habitat in the Bypasses. On the same page, the draft Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project EIS/EIR also states: "Adult Chinook salmon enter the Yolo Bypass from the south, often straying from the adjoining Sacramento River in response to tidal exchange or	Regarding the Sutter Bypass, there are almost no differences between Alternatives 1, 2, and 3 and the No Project Alternative in either the duration or acreages of floodplain inundations (Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis, Table 11M-4 and Figure 11M-8). There are reductions in the frequency of spills into the Sutter Bypass, but these occur primarily for spills >3,000 cfs. Steady state flow >3,000 cfs produces reductions in acreage of suitable juvenile salmonid rearing habitat in the Sutter Bypass (Appendix 11M, Figure 11M-2). Regarding the Yolo Bypass, there are increases and reductions in spill frequencies and in both the duration and acreage of inundations (Appendix 11M, Table 11M-2 and Figure 11M-7), but as discussed in Appendix 11M, Section 11M.3.1, Yolo Bypass Weir Spill Events and Inundated Floodplain Habitat Area, none of these differences were considered large enough to substantially affect availability of suitable juvenile rearing habitat of the salmonid species. Master Response 5, Aquatic Biological Resources, provides a detailed discussion under the topics of uncertainty and thresholds and criteria used in the analyses concerning how differences were evaluated in the analyses with regard to significance determinations. See response to comment 72-39 for a discussion of results of new analyses added to the Final EIR/EIS on fish passage for juvenile Chinook salmon into the Yolo Bypass via Fremont Weir and at the three Sutter Bypass weirs.

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	substantial flow pulses coming from the Yolo Bypass. While adults have been documented in the Yolo Bypass each month that sampling has occurred, the majority have been caught between October and December. Although juvenile Chinook salmon are in the Sacramento River throughout the year, they can only access the Yolo Bypass floodplain following a Fremont Weir overtopping event. Juveniles have been observed between December and July, with peak presence occurring between February and April (DWR 2016, as cited in DWR and Reclamation 2017." [Footnote 42: Id.] The second impact is reduced duration of inundated rearing habitat. Modeling results indicate a reduced duration of inundated habitat from January through June in the Yolo Bypass, with the largest reduction (-7 percent) if inundation occurring during dry year-types under all Alternatives (Table 11M-1). Having inundated habitat in the Yolo Bypass has substantial impacts on fisheries growth and survival. A 2001 study showed that "During 1998 and 1999, salmon increased in size substantially faster in the seasonally inundated agricultural floodplain than in the river, suggesting better growth rates. Similarly, coded-wire-tagged juveniles released in the floodplain were significantly larger at recapture and had higher apparent growth rates than those concurrently released in the river. Improved growth rates in the floodplain were in part a result of significantly higher prey consumption, reflecting greater availability of drift invertebrates." [Footnote 43: See T.R. Sommer, M.L. Nobriga, "Floodplain rearing of juvenile chinook salmon: evidence of enhanced growth and survival", 2001.] Without proper mitigation, the Coalition is concerned that the lack of inundation at the Yolo Bypass will have serious ecological impacts on fisheries. [Footnote 44: Pacific lamprey and important Tribal trust species and a California species of special concern may also be impacted by	

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	changing inundation in the Yolo Bypass. See 8-12 Draft Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project EIS/EIR 8-10.]	
72-46	The Alleged "Environmental Benefits" From This Project Are Vague and Not Substantiated. "Environmental benefits" and "environmental purposes" of the Project used in part to justify the Project are vague and largely undefined. Insofar as any of those benefits accrue to in-river conditions and aquatic species (such as Chinook salmon and steelhead) in the Sacramento River, only Alternative 2 makes provisions for returning waters captured from the Sacramento in the winter directly back into the Sacramento (presumably in the summer and fall) to provide cold water benefits for ESA-listed winter run Chinook, spring-run Chinook and steelhead, and also non-listed but declining as well as economically valuable harvested fall-run Chinook in the river. In any event, those "environmental purposes" should be spelled out as "including providing cold water within the Sacramento River to help meet the needs of the Sacramento-Shasta Temperature Management Plans, D-1641 and WRO 90-5 and other relevant water quality standards, and to prevent temperature-dependent mortalities for anadromous salmonids and other aquatic species as specified in those plans and in any later Biological Opinions for ESA and/or CESA-listed aquatic species." Protecting ESA-listed species is not optional, and rather is legally a higher priority for water use than any conceivable irrigation use, whether by contract or regular water right. The USBR and State must protect these species and abide by relevant Biological Opinions to the best of what is physically possible.	Please refer to Master Response 5, Aquatic Biological Resources, for discussions regarding the benefits of the Project, including clarifications about the potential to provide cold-water benefits under all alternatives (not just Alternative 2) through exchanges with Storage Partners. The Project is required to and will comply with existing standards for the Sacramento River. Water temperatures in the Sacramento River are and will continue to be managed through water releases from Shasta and Keswick Dams in accordance with the State Water Resources Control Board water rights and water quality criteria related to the CVP and SWP operations under the Project, as well as relevant biological opinions. For instance, any decision by Reclamation to provide additional temperature control through the use of Shasta Lake under Project conditions would be required to be made in consultation with Reclamation's existing temperature task group and submitted to the State Water Board, pursuant to Water Rights Order 90-5, as is currently the case. Please also refer to Master Response 5 for discussions of CEQA/NEPA requirements as they pertain to special-status fish species and how these planning processes and standards differ from the permitting ones (e.g., biological opinions).
72-47	"Environmental benefits" for salmon are also questionable in terms of providing more cold water for cold-water evolved anadromous species. Additional water returned to the Sacramento from Sites Reservoir will likely be warmer water than the ambient temperatures of the river, not cold water, as it will have been sitting in a relatively shallow reservoir with	Please refer to Master Response 5, Aquatic Biological Resources, regarding benefits to aquatic biological resources, including the benefits to the cold-water pool that are achieved through exchanges with upstream Storage Partners, not direct releases from Sites Reservoir.

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	considerable surface area through which to absorb solar energy while in the reservoir. Nowhere in the Project NEPA documents are these "environmental benefits" -- particularly use of stored Project water for reduction of high-water temperatures that threaten anadromous fishes -- spelled out or modeled in any detail.	
72-48	There Is A Potential for Project Impacts on Aquatic Biological Resources Due to Changes in Flow Patterns in The Sacramento River. The Coalition would like to know the net annual reduction of total water available through: (a) ground seepage from the reservoir; (b) evaporation; and (c) various conveyance losses. These types of water losses would all likely be increased by the process of diverting, storing and then channeling back waters stored in Sites Reservoir. Such water losses should be quantified at the very least so as to determine whether the Project as proposed would even be an effective way to manage water.	Potential Project effects on aquatic biological resources due to changes in flow in the Sacramento River are evaluated in Chapter 11, Aquatic Biological Resources; Master Response 5, Aquatic Biological Resources; and multiple responses to comments, including responses to comments 72-16, 72-32, 72-33, 72-58, 72-59, 72-64, 72-65, and 72-67. Please see Master Response 3, Hydrology and Hydrologic Modeling, which quantifies the losses from (1) seepage from Sites Reservoir as less than 3.5 thousand acre-feet (TAF) per year, or 1%-2% of long-term average annual diversion volume; (2) evaporation as 27 TAF per year on average, or 10% of long-term average annual diversion volume; and (3) conveyance losses as 1%-13% of diversions depending on diversion location and time of year (see Table MR3-1).
72-49	Another question to ask is what will be the reduction of high winter-time "flushing flows" because of Project diversions, and how those reductions affect natural scouring mechanisms that reduce the incidence and spread of such fish pathogens as Ceratanova shasta, and the avoidance of harmful algal blooms (HABs), both of which have become more prevalent throughout the hydrological system	Potential changes in flow regime and geomorphic processes are analyzed in Chapter 7, Fluvial Geomorphology, under Impacts FLV-2 and FLV-3. Please also see the response to comment 72-31 regarding limited effect on flood flows within the Sacramento River. There is some empirical and modeling evidence from other systems that would not be affected by the Project (e.g., Klamath/Trinity Rivers, where ceratomyxosis is more prevalent) that high flows and high velocity can reduce the density of the intermediate polychaete host

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		for the fish pathogen Ceratonova shasta and reduce infectious spores' concentrations. As identified in Chapter 7, Sites Reservoir operations would not lead to significant reduction in scouring due to high flows (Table 7-4). Diversions would primarily occur in high flow conditions during which scouring, and other geomorphic processes are anticipated to remain relatively unchanged compared to the No Project Alternative. Diversion would be limited in low flow periods; as such, there would be no exacerbation of conditions favorable to the development of harmful algal blooms (HABs) or increases in pathogen concentrations in the Sacramento River. "Flushing flows" during high flow periods would be kept intact under the flow protection criteria (Chapter 11, Aquatic Biological Resources, Impacts FISH-2 through FISH-5). In addition, as described in Chapter 2 and Master Response 2, Alternatives Description and Baseline, the operational criteria have been refined such that the Wilkins Slough criterion is 10,700 cfs from October 1 to June 14, no diversions to storage are allowed from June 15 to August 31, and the Wilkins Slough criterion is 5,000 cfs in September. The Bend Bridge pulse flow protection criteria have also been refined. These two project refinements further preserve high winter "flushing flows." Refinement of these criteria changed the impact conclusions for Impacts FISH-2 through FISH-5 from significant to less than significant.
72-50	There also are unacceptable high likely impacts on ESA-listed winter-run Chinook at Hamilton City and Red Bluff intakes: "All winter-run Chinook salmon spawning occurs upstream of Red Bluff (Azat 2019), so all juvenile winter-run migrating downstream would need to pass the two intake locations at Red Bluff and Hamilton City. . . It is possible that a relatively large proportion of downstream-migrating juvenile salmonids could pass relatively close to the Red Bluff and Hamilton City	The commenter suggests that the possibility of relatively large proportions of juvenile winter-run Chinook salmon passing near the Red Bluff and Hamilton City intakes is an unacceptable amount of take. The potential for a relatively high proportion of fish to pass near the intakes and possibly be exposed to the fish screens does not equate to take (which in Endangered Species Act [ESA] terms is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct;

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	intakes, particularly during nighttime periods when most migration occurs [citations omitted]… "[I]t would be expected that approximately 10-30% of downstream-migrating juvenile salmonids approaching the river-oxbow split would enter the oxbow and have the potential to be exposed to the Hamilton City intake screen." [Footnote 45: RDEIR/SDEIS, pgs. 11-84 to 85.] This is an unacceptable amount of "take" for an ESA-listed species (winter-run Chinook) already on the verge of extinction. At a minimum these two intakes must be redesigned to absolutely minimize "take" of these fish, including repositioning them so that there are adequate natural sweeping flows sufficient to guide juvenile fish away from these intakes, and with screens positioned far enough from the intake current to keep juvenile fish from entrainment. These design elements need to be in place in the Plan. It is not sufficient to merely plan future studies on these issues, as currently stated: "Potential exposure of juvenile salmonids to the Red Bluff and Hamilton City fish screens would be addressed by technical studies focused on diversions at these locations during high winter flow conditions when Project diversions would occur (Appendix 2D)." [Footnote 46: RDEIR/SDEIS, pg. 11-86.]	please also see discussion of permitting regarding take in ESA terms vs. significance in CEQA terms in Master Response 5, Aquatic Biological Resources); the analysis in the subsequent paragraph then discusses in depth the potential for negative effects as a result of exposure to the fish screens. The commenter implies that there are inadequate "natural sweeping flows" at the Red Bluff and Hamilton City fish screens and that the intakes require redesign. As described in Chapter 2, Project Description and Alternatives, Section 2.5.1.1, Sacramento River Diversion and Conveyance to Regulating Reservoirs, of the RDEIR/SDEIS, the fish screens at both facilities meet National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW) criteria. These criteria include sweeping velocity. Note that the Hamilton City intake was subject to study and redesign as part of an earlier fish screen improvement project, part of which included construction of a rock training wall to enhance sweeping velocity past the screen (Vogel 2008:1). The potential for near-field effects, including entrainment, is analyzed with best available information, indicating limited potential for effect. As noted in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, Section 2D.6, Fish Monitoring and Technical Studies Plan and Adaptive Management for Diversions, technical studies would verify the facilities' performance during high winter flow conditions under which the Project would be diverting in the future, a situation that currently does not occur. This would be part of adaptive management for the diversions. The technical studies will describe factors such as juvenile salmonid migration survival in high flow conditions prior to Project operations, compliance with

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		protective criteria for screen hydraulics in high flow conditions, and changes resulting from initial and continued Project operations in high flow conditions. These additional studies will provide data and reports to document compliance with NMFS and CDFW fish screen performance criteria in high flow conditions when Project diversions would occur; the studies will be submitted to NMFS, U.S. Fish and Wildlife Service, and CDFW for review and to inform adjustments or refinements in Project operations for the protection of fish species as part of adaptive management.
72-51	Again, without an adequate and stable description of all aspects of the Project plan, its likely impacts simply cannot be analyzed, and this violates the very purposes of both CEQA and NEPA. It is simply not enough to state, as is done above, [quote from RDEIR/SDEIS, pg. 11-86: "Potential exposure of juvenile salmonids to the Red Bluff and Hamilton City fish screens would be addressed by technical studies focused on diversions at these locations during high winter flow conditions when Project diversions would occur (Appendix 2D)."] that all these issues would somehow be addressed later in time, i.e., long after the CEQA and NEPA stage has passed.	Please see Master Response 2, Alternatives Description and Baseline, regarding a stable Project description. The quote identified by the commenter is selected from a much larger impact analysis in Chapter 11, Aquatic Biological Resources, Impact FISH-2, that includes multiple lines of evidence, including the spatial distribution of migrating fish in the Sacramento River channel at the Red Bluff and Hamilton City intakes, operation of the intakes, peer-reviewed scientific literature, and estimates of potential entrainment and impingement. The impact analysis concludes, based on multiple lines of evidence, that "Entrainment risk would be expected to be similar between NAA [No Project Alternative] and Alternatives 1, 2, and 3 for juvenile winter-run Chinook salmon." It further concludes that "The available information generally suggests that impingement and screen passage/contact-related negative effects of the operation of the Red Bluff and Hamilton City intakes would be limited, particularly given that these effects would only apply to the subset of juvenile winter-run Chinook salmon encountering the intakes. The Red Bluff and Hamilton City fish screens are designed to protective standards for Chinook salmon fry and so near-field effects would be expected to be limited." The Final EIR/EIS finding of significance for Impact FISH-2 is less than significant, and therefore does not require mitigation.

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		The potential for near-field effects, including entrainment, is analyzed in the RDEIR/SDEIS with best available information, indicating limited potential for Project effects. As noted in Section 2D.6, Fish Monitoring and Technical Studies Plan and Adaptive Management for Diversions, of Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, technical studies would verify the facilities' performance during high winter flow conditions under which the Project would be diverting in the future, a situation that currently does not occur. These technical studies would be part of adaptive management for the diversions. The technical studies would describe factors such as juvenile salmonid migration survival in high-flow conditions prior to Project operations, compliance with protective criteria for screen hydraulics in high-flow conditions, and changes resulting from initial and continued Project operations in high-flow conditions. Additional studies would provide data and reports to document compliance with NMFS and CDFW fish screen performance criteria in high-flow conditions when Project diversions would occur; the studies would be submitted to NMFS, U.S. Fish and Wildlife Service, and CDFW for review and to inform adjustments or refinements in Project operations for the protection of fish species. An Adaptive Management Science Team (AMS Team) would use the results to determine if and what actions may be needed (e.g., adjustments in diversion operations timing).
72-52	This effort to indefinitely defer actual analysis of entrainment impacts simply begs the question: "What happens if entrainment at these intakes is found to be unacceptably high?" The current Project plan does not seem to answer this question, but rather it goes through a convoluted reasoning process [Footnote 47: RDEIR/SDEIS, pgs. 11-91 to 97.] to justify the largely still unsupported assertion that:	The commenter suggests there is an effort to defer analysis of entrainment. Please see response to comment 72-51 regarding existing fish screens, entrainment, near-field effects, and potential impacts. Also see Master Response 5, Aquatic Biological Resources, for response to comments on entrainment.

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	"The Red Bluff and Hamilton City fish screens are designed to protective standards for Chinook salmon fry and so near-field effects would be expected to be limited. Impingement could be monitored at the Red Bluff and Hamilton City intakes during high winter flow conditions when Project diversions would occur (Appendix 2D)." This is more like simply taking these pre-existing intakes as they now are, rather than bringing them up to higher standards based on best available design criteria -- and hoping for the best. At the least, if there is to be meaningful monitoring in accordance with Appendix 2D, there should be certain entrainment "triggers" and caps above which, if these levels are reached, the intakes will be redesigned or operated to minimize such problems.	The cited information (pages 11-91–11-97 in the RDEIR/SDEIS) in the comment is a review of the available literature regarding the potential for negative near-field effects. This literature review, combined with designing fish screens to meet fish agency criteria, informs the conclusion that near-field effects would be limited. The commenter does not provide any information that would contradict this conclusion. The AMS Team, as described in response to comment 72-51, would use the results of the technical studies and adaptive management to determine if and what actions may be needed (e.g., adjustments in diversion operations timing) similar to the commenter's suggestion that there be certain "triggers" and caps for entrainment.
72-53	Temperature Effects from Irrigation Diversions on Winter-run Chinook Must Be Considered Cumulatively, Not in Isolation. Project analysis categorically dismisses most (but not quite all) increased temperature impacts on winter-run Chinook as (1) being less than 5 percent greater under the alternatives than under the NAA, and (2) the exceedance per day was generally less than 0.5° F. greater than under the NAA. The RDEIR/SDEIS then states: "Because these biologically meaningful effects occurred in only one month of one water year type, they are not expected to be persistent enough to affect winter-run Chinook salmon at a population level." [Footnote 48: RDEIR/SDEIS, pg. 11-105.] And later: "Overall, effects of Alternatives 1, 2, and 3 on water temperature-related effects to winter-run Chinook salmon in the Sacramento River are expected to be biologically inconsequential due to the low frequency and small magnitude of differences between Alternatives 1, 2, and 3 and the NAA." [Footnote 49: RDEIR/SDEIS, pg. 11-107.]	Please see Master Response 5, Aquatic Biological Resources, for a discussion of CEQA and NEPA requirements as they pertain to special-status fish species and how these planning processes differ from the permitting ones (including those under the federal and state ESAs).

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	However, requiring "a population level" effect is not the appropriate standard here. The finding of a "take" of this ESA-listed species does not require "population level" impacts -- and lack of population level effects does not excuse a "take" of an endangered species.	
72-54	The winter-run Chinook is a federally ESA-listed species that has been pushed extremely close to extinction already, and lays eggs which are also very temperature sensitive at ambient water temperature thresholds above 53.5° F. Temperature-dependent egg mortalities (TDM) do not change in a linear fashion with increased temperature, they are threshold related. Water temperature increases above that particular biological threshold (now all too common in the Sacramento River system) can result in very large temperature-dependent egg mortalities even with very small increases in ambient water temperature above that key biological threshold. In that context even a 0.5° F. water temperature increase above that threshold can result in much larger egg mortalities. (See Figure 1) [See Exhibit 2]. Generally speaking, the extent of TDM in a cohort of Chinook Salmon eggs is a function of by how much river temperatures exceed 53.5°F at the location of redds, and for how long these conditions persist. Egg mortality rates increase very rapidly at daily average temperatures above 53.5°F (11.94oC) (Martin et al. 2016), and TDM is above 70 percent when eggs are incubated at constant temperatures of 55oF (~12.8oC) and above (see Figure 1); this is likely an underestimate because river temperatures are not constant over the course of a day -- a 55oF average temperature means the eggs will be exposed to even higher temperature "spikes" during the hottest parts of each sunny day. Figure 1 [Exhibit 2] also illustrates neatly why the Project RDEIR/SDEIS's broad assumption that impacts that are less than 5 percent of NAA status quo can be categorically assumed to be "insignificant" is false, as well as in conflict with NEPA and CEQA standards. In this TMD instance, and in many	Please see Master Response 5, Aquatic Biological Resources, for a discussion of CEQA and NEPA requirements as they pertain to special-status fish species and how these planning processes differ from the permitting ones (including those under the federal and state ESAs). Master Response 5 also addresses the uncertainty in interpreting modeling results, the use of the best available tools and the adequacy of thresholds in evaluating potential Project impacts. The analysis in Chapter 11, Aquatic Biological Resources, Impact FISH-2, considers the information provided in the comment regarding temperatures near the index values, including 53.5°F. The analysis uses 53.5°F as an index value for analysis of Chinook salmon spawning and egg incubation. Further, the analysis utilizes the Martin and Anderson models, which use the 53.5°F value. In addition, an additional analysis was added to the winter-run Chinook salmon egg temperature analysis in the Final EIR/EIS that looks more closely into this temperature index value for salmonid temperature-dependent egg mortalities (TDM) related to summer cold-water pool management. Results from this analysis do not change the impact determination of less than significant with mitigation (CEQA) and findings of no adverse effect (NEPA).

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	other instances of "threshold" triggers, once that threshold has been reached, even very small additional impact increases above that threshold "tipping point" can result in major changes to a finely balanced ecosystem. In this case, changing ambient water temperatures for cold-adapted salmonid eggs from 53.5°F a mere 0.5 degree upwards to 54.0°F would result in TMD levels rocketing from zero to 30 percent or more.	
72-55	{Exhibit 2] Figure 1: Temperature-dependent mortality (% TDM) of winter-run Chinook Salmon eggs as a function of water temperatures, as modeled by NMFS based on research published by Martin et al. 2016. Note that eggs begin to die when exposed to constant temperatures above 53.5°F and mortality increases rapidly as temperatures increase. In particular, exposure to constant temperatures of 55°F corresponds to temperature-dependent mortality of greater than 70 percent. In the wild, temperatures are not constant; it is likely that TDM is higher at any given average temperature than it is at the corresponding constant temperature depicted here. (Source: Graph provided to parties by federal defendants October 21, 2021; reprinted from PCFFA, et al. vs. Raimondo, U.S. Dist. Court of Northern California, Case No. 1:20-cv-00431, Declaration of Dr. Jonathan A. Rosenfield, Dkt. 325 (12/16/21))	There are no data points, measures of fit of the line, error, or statistics describing the relationship in the figure mentioned by the commenter, which precludes accurate interpretation and confirmation of the values cited. It does, however, show similar trends to Figure 1 published in Martin et al. (2017), albeit using the opposite metric of mortality (survival). Please refer to response to comment 72-54 for a discussion of thresholds and the 53.5°F value.
72-56	The RDEIR/SDEIS Must Consider the Cumulative Impacts from all other Sacramento River Diversions. Never in the Project's CEQA/NEPA documents does it discuss in any detail the cumulative effects on anadromous salmonids or other aquatic species of all the hundreds of individually small irrigation withdrawals throughout the hydrological system that already diminish Sacramento River flows within the Project area. Cumulative effects analysis is still a requirement of NEPA, and this requirement is being bolstered by the Biden Administration. [Footnote 50: See 86 Fed. Regs. 55757 et seq. (Oct. 7, 2021).] CEQA also independently requires a cumulative effects analysis. Without such a	Please see response to comment 72-35 regarding the modeled representation of diversions throughout the watershed.

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	cumulative impacts analysis it is impossible to assess potential water diversions resulting from the Project in terms of incremental or additional impacts the Project might create.	
72-57	But consideration of cumulative effects is also crucial in determining whether this Project's additional impacts, on top of already existing cumulative other impacts, results in a "take" occurring or if there is "jeopardy" to ESA-listed species such as the winter-run Chinook, the spring-run Chinook and steelhead. The Federal Endangered Species Act (ESA) [Footnote 51: 16 U.S.C. §1538(a)(1).] generally prohibits any person, including both private persons and federal agencies, from "taking" any endangered species, such as in this case winter-run Chinook. And the term "take" is broadly defined to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." With the ESA, Congress intended endangered species to be afforded the highest of priorities. The ESA's purpose is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species." [Footnote 52: 16 U.S.C. § 1531(b).] Under the ESA, conservation means "to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary." [Footnote 53: Id. § 1532(3).] Section 7(a)(2), 16 U.S.C. § 1536(a)(2), is a critical component of the statutory and regulatory scheme to conserve endangered and threatened species. It requires that every federal agency must determine whether its actions "may affect" any endangered or threatened species. If so, the action agency must	The effects of past projects are incorporated into the No Project Alternative and are therefore included in the impact analysis for each resource. Please refer to Master Response 5, Aquatic Biological Resources, regarding CEQA/NEPA analyses compared to permitting requirements under the ESA. Please see Master Response 5, Aquatic Biological Resources, regarding the baseline conditions of fishery resources. While the CEQA and NEPA regulations regarding analysis of cumulative impacts differ slightly, they both require analysis of the impacts of the proposed action together with past actions (or baseline) and reasonably foreseeable future actions. Please refer to Chapter 31, Cumulative Impacts, for a discussion of cumulative impacts relating to aquatic biological resources, where it states that negative effects of the operation on juvenile salmonids would be limited. Please refer to Master Response 3, Hydrology and Hydrologic Modeling, for further clarification regarding the modeled representation of diversions throughout the watershed. The CALSIM II model includes existing diversions in the simulations of the No Project Alternative and Alternatives 1, 2, and 3, and, as such, diversions are incorporated in the impact assessment presented in Chapter 11, Aquatic Biological Resources.

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	formally consult with the Fisheries Service as part of its duty to "insure that [its] action is . . . Not likely to jeopardize the continued existence" of that species. [Footnote 54: Id. § 1536(a)(1), (2); 50 C.F.R. § 402.14 (2019).] The term "jeopardize" is defined as an action that "reasonably would be expected…to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." [Footnote 55: 50 C.F.R. § 402.02 (2019).] At the completion of formal consultation, the Fisheries Service will issue a Biological Opinion that determines if the agency action is likely to jeopardize the species. [Footnote 56: 16 U.S.C. §1536(b)(3)-(4); 50 C.F.R. § 402.14(h).] In formulating its Biological Opinion, the Fisheries Service must use only "the best scientific and commercial data available." [Footnote 57: 16 U.S.C. § 1536(a)(2).] The Biological Opinion must also include a summary of the information upon which the opinion is based, an evaluation of the "current status of the listed species," the "effects of the action," and the "cumulative effects." [Footnote 58: 50 C.F.R. § 402.14(g)(2), (g)(3).] "Effects of the action" include both direct and indirect effects of an action 'that will be added to the environmental baseline." [Footnote 59: Id. § 402.02.] The "environmental baseline" includes "the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process." [Footnote 60: Id.] "Cumulative effects" include "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area." [Footnote 61: Id.] Thus, in issuing a Biological Opinion, the Fisheries Service must consider not just the isolated share of responsibility for impacts to the species traceable to the activity	The baseline for aquatic biological resources is described in Chapter 11 and analyzed in that chapter to assess the effects of the Project on aquatic resources. The environmental setting of Chapter 11 describes current conditions for special-status fish species as already affected by past and current actions, including reservoir construction, diversions, and other hydrologic modifications. These current conditions and their effects on survival (such as effects on spawning area and entrainment) are part of the reason these fish are listed as special-status species. Dam construction has diminished upstream spawning area but provides some level of protection against dewatering as a result of controlled reservoir releases. These current conditions are represented in the No Project Alternative and are considered in the impact assessments in Chapter 11.

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	that is the subject of the Biological Opinion, but also the effects of that action when added to all other activities and influences that affect the status of that species. Thus, for both NEPA and CEQA purposes, as well as for ESA incidental take coverage purpose and a Biological Opinion, a cumulative impacts analysis looking at the combined impacts of all other water diversions in addition to or prior to the Project's proposed water diversions on ESA-listed or CEQA-listed aquatic species within the Project's area is necessary.	
72-58	78. Flow-Related Physical Impacts on ESA-listed Salmonids. 1. Redd Dewatering The RDEIR/SDEIS on page 11-109 notes that: "The results for winter-run Chinook salmon show few large changes in redd dewatering between the NAA and Alternatives 1, 2, and 3 (Table 11N-13) . . . Changes for most months and water year types under all Alternatives 1, 2, and 3 are less than 2%. Overall, the effects of Alternatives 1, 2, and 3 on winter-run redd dewatering are minor." While this may be true on average, that average value is merely a mathematical construct, not a real event. In Table 11N-13 there is an outlier high number (highlighted in red) for July-October period in a Below Normal water year, in which the percentage of redds dewatered under those conditions is projected to be 2 percent. In an extremely weak population baseline, such as that of the endangered winter-run Chinook salmon stocks, that 2percent loss could well be deemed significant. Repeated such loss events could be even more so. Similar claims of insignificant impacts from redd dewatering for spring-run Chinook and fall-run Chinook could be made. However, in a related table (11N-14) showing percentage of ESA-listed spring-run Chinook redds likely to be dewatered, there are also data outliers in the September-December time frame in Above Normal water years for Alternative ("Alt") 1B (2.3 percent reduction), for Alt 3 (4.5 percent reduction), and during the	Refer to Master Response 5, Aquatic Biological Resources, for discussions of: (1) the use of monthly modeling results in the analysis of flow and related environmental factors, (2) special-status fish species and CEQA and NEPA requirements, baseline and special-status species, (3) uncertainty, and (4) thresholds and criteria used in the analyses. The highlighted results in the tables for the Project alternatives should not be considered statistical outliers; they are simply flags to help readers quickly locate the results with the largest differences from the No Project Alternative. For discussions of cumulative impacts on redd dewatering and other potential effects, refer to Section 31.3.6, Aquatic Biological Resources, of Chapter 31, Cumulative Impacts, of the Final EIR/EIS.

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	October-January time period for Above Normal years under Alt 3 (2.2 percent) reduction, and for Critically Dry water years for Alt 1A (4.5 percent reduction), Alt 1B (3.2 percent reduction), Alt 2 (3.2 percent reduction) and finally Alt 3 (3 percent reduction). There are also similar redd dewatering problems listed for fall-run Chinook in Table N-15 of between 2 percent and 4.1 percent in some time frames and water years for some Alternatives. These redd dewatering projects outliers are of some concern. The Coalition requests the Project proponents please explain what, if any, mitigation measures they will take (e.g., reducing Project intakes in Critically Dry years during peak egg-laying season for salmonids) to mitigate these potential impacts on redds. And keep in mind also, there is no analysis about cumulative other impacts on river conditions that have already taken a high toll on the redds that are still typically present. Without that information on cumulative impacts it is not possible to say whether up to an additional 5 percent loss of redds through dewatering -- especially in light of the cumulative losses from all other impacts -- is a "significant" impact on the population as a whole or not.	
72-59	2. Spawning Habitat Loss At page 11-111, after earlier describing the WUA ("weighted usable area") method used in the analysis, Project proponents state: "Almost all spawning by winter-run occurs in the upper two segments (Segment 6 and 5) of the Sacramento River, between Keswick Dam and Cow Creek, with spawning density (redds per RM) especially high in Segment 6 (Table 11K-1). . . Mean winter-run spawning WUA differs by less than 5% for most months and water year types, but mean WUA in Segment 6 under Alternatives 1, 2, and 3 is 5% to 6% lower than WUA under the NAA in May of Critically Dry Water Years (Table 11K-2)." However, the draft goes on to say:	The changes in winter-run spawning conditions in Segment 6 of Critically Dry Water Years is acknowledged in the RDEIR/SDEIS, Chapter 11, Aquatic Biological Resources, Section 11.4, Impact Analysis and Mitigation Measures, Impact FISH-2: "These results indicate that in May of Critically Dry Water Years, Alternatives 1, 2, and 3 would result in reductions of spawning habitat in Segment 6 and increases of spawning habitat in Segment 4. Note that spawning habitat conditions are much more important for winter-run in Segment 6 than in Segment 4." However, the >5% reductions in Segment 6, which occur only in Critically Dry Water Years, range between 5% and 6%, depending on the alternative, which is considered, based on expert opinion, not to be a substantial effect on

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	"In general, Alternatives 1, 2, and 3 are not expected to substantially affect winter-run spawning WUA." This latter assurance is, on its face, contradicted by the fact that at least during May, in Critically Dry water years, RDEIR/SDEIS tables show that up to 6.1 percent of all the very small amount of still remaining winter-run Chinook spawning habitat is expected to be lost. This impact, even by the Project's own questionable <5 percent significance level definition, is thus a significant impact.	the overall availability of winter-run spawning habitat. Also, as discussed in Master Response 5, Aquatic Biological Resources, impact conclusions regarding effects of Alternatives 1, 2, and 3 on the populations of all fish species evaluated are arrived at by weighing effects of the alternatives on all important factors. For further explanation regarding determination of substantial effects, please refer to Master Response 5 for discussions of: (1) uncertainty, (2) thresholds and criteria used in the analyses, (3) use of means in reporting modeling results, and (4) treatment of special-status fish species with respect to CEQA and NEPA requirements.
72-60	There are similar spawning area Segment 5 habitat losses projected for river Segment 5 for spring-run Chinook [Footnote 62: See RDEIR/SDEIS, Table 11K-6.] for Above Normal water years for Alternative 3 of 9.4 percent spawning area losses. These relatively higher spawning area losses are of some concern -- please explain what, if any, mitigation measures Sites Authority will take (e.g., reducing Project intakes in Critically Dry years during peak egg-laying season for salmonids) to mitigate these potential impacts of spawning area losses.	The comment cites a 9.4% reduction in spring-run spawning habitat weighted usable area (WUA) in Segment 5 under Alternative 3 as shown in Table 11K-6 of Appendix 11K, Weighted Usable Area Analysis, of the RDEIR/SDEIS and suggests mitigation measures should be proposed in response. Note, however, that although this reduction is predicted for September of Above Normal Water Years, a large increase in spring-run spawning WUA (16.8%) is predicted for August of Above Normal Water Years in the same river segment and under the same alternative (Alternative 3). It is expected that any negative effect of reduced spawning WUA in September would be offset by a benefit from the increased spawning WUA in August. As discussed in Master Response 5, Aquatic Biological Resources, impact conclusions regarding effects of Alternatives 1, 2, and 3 on the populations of all fish species evaluated are arrived at by weighing effects of the alternatives on all important factors. Also, see discussion in Master Response 5, Aquatic Biological Resources, of (1) uncertainty and (2) thresholds and criteria used in the analyses.

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72-61	It is also important to note that there should also be an analysis about cumulative other impacts on river conditions that have already taken a high toll on spawning areas that were once typically present. Without that information on cumulative impacts it is not possible to say whether up to an additional 5 percent loss of spawning habitat through dewatering is a "significant" impact on the population as a whole or not. Even a 5 percent loss of what may already be only a very small remainder of once abundant habitat could easily be "significant."	Please see Master Response 5, Aquatic Biological Resources, for discussions of: (1) special-status fish species and CEQA and NEPA requirements, baseline and special-status species, (2) uncertainty, and (3) thresholds and criteria used in the analyses. For discussions of cumulative impacts on spawning and rearing WUA and other potential effects, refer to Section 31.3.6, Aquatic Biological Resources, of Chapter 31, Cumulative Impacts, of the Final EIR/EIS.
72-62	3. Rearing Habitat Loss At page 11-111, the RDEIR/SDEIS states: "These results indicate that Alternative 3 would have a moderate effect on rearing habitat for winter-run fry in the Sacramento River during October of Below Normal Water Years and the other alternatives would have no adverse effects." This is an over-simplification, at best. As noted in Table 11K-23 for Segment 6 of the upper Sacramento River (one of the two main areas in which the winter-run still spawn), in September there would be a 5.1 percent winter-run fry rearing area reduction under Alternative 3, and in October under Below Normal conditions there would be a 7.1 percent loss under Alternative 3 and a 5.1 percent loss in Critically Dry years. The Coalition also reminds Project proponents that these losses are cumulative in addition to major winter-run Chinook spawning and rearing habitat losses over many decades, losses which are in large part the trigger for their current ESA-listing as "endangered." There are similar problems for loss of spring-run Chinook fry rearing habitat [Footnote 63: RDEIR/SDEIS, Table 11K-30 through 34.] in Sacramento River Segments 4 and 5, and for fall-run Chinook as well under certain conditions. [Footnote 64: RDEIR/SDEIS, Table 11K-46, looking at Sacramento River Segment 4.]	As discussed in Master Response 5, Aquatic Biological Resources, under the subheading Uncertainty, impact conclusions regarding effects of Alternatives 1, 2, and 3 on the populations of all fish species evaluated are arrived at by weighing effects of the alternatives on all important factors. Also, see discussion in Master Response 5, Aquatic Biological Resources, of thresholds and criteria used in the analyses.

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	These rearing habitat area losses projected are of some concern -- please explain what, if any, mitigation measures Project proponents will take (e.g., reducing Project intakes in Critically Dry years during peak fry rearing season for salmonids) to mitigate these potential additional impacts that will lead to yet more fry rearing area habitat losses.	
72-63	There should also be an analysis about cumulative other impacts on river conditions that have already taken a high toll on rearing habitat areas that were once typically occupied. Without that information on cumulative impacts it is not possible to say whether up to an additional 5 percent loss of spawning habitat through dewatering is a "significant" impact on the population as a whole or not.	Please see the response to comment 72-61.
72-64	4. Increases in Juvenile Salmonid Strandings There is an unfortunate dearth of analysis of salmonid juvenile stranding risk, as noted in Appendix 11-N (Other Flow-Related Upstream Analysis): "11N.3.3 Juvenile Stranding. A juvenile stranding analysis for salmonids was conducted in the Sacramento River only. No information is available from the Feather and American Rivers for relating changes in flow to numbers of juvenile salmonids stranded. Furthermore, daily flow data are needed to reliably estimate juvenile stranding, and only monthly data are available for these rivers." [Footnote 65: RDEIR/SDEIS, pg. 11N-42.] One would then have to assume, as a precautionary measure, that juvenile stranding problems in these other rivers would be comparable to typical stranding problems in the Sacramento. The Project proponents cannot just assume them away from lack of data.	No geographically broad studies of juvenile stranding such as would be required to evaluate effects of Project flows on juvenile stranding have been conducted for the Feather or American Rivers. This lack of information is unfortunate, but it would be problematic to assume that the effects of Alternatives 1, 2, and 3 on stranding in these rivers would be the same as those determined for the Sacramento River. Not only are conditions that affect juvenile rearing habitat in these rivers different than those in the Sacramento River, but the effects of the alternatives on flow conditions in these rivers are very different. Please see discussion in Master Response 5, Aquatic Biological Resources, on 1) use of best available tools and 2) uncertainty.
72-65	And it turns out there are likely to be serious juvenile stranding problems within the Sacramento River: "The largest increases in juvenile stranding occur for the April cohort at all three locations [upper Sacramento River: Keswick Dam, Clear Creek, and	The commenter makes the following argument: "Stranding events and non-stranding events cannot be traded off against each other 'on average' because they are not biologically symmetrical. Once an individual juvenile fish is stranded, even once, it is dead—it does not matter one bit if in other places at other earlier or later times, it would

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	Battle Creek], ranging as high as 30% in Dry Water Years under Alternative 1A, 1B, and 2 at the Keswick Dam location." [Footnote 66: RDEIR/SDEIS, pg. 11-112.] But then, remarkably, this very troubling and clearly significant impact is dismissed out of hand with the following justifications: "The principal period of stranding vulnerability for the winter-run is for cohorts emerging in July through October, when some large reductions and increases in juvenile stranding occur, but large reductions in juvenile stranding are more frequent than large increases. Therefore, Alternatives 1, 2, and 3 are not expected to affect winter-run juvenile stranding (Table 11N-28 through Table 11N-30)." [Footnote 67: RDEIR/SDEIS, pg. 11-112.] "The results generally show little evidence of major overall effects of Alternatives 1-3. The redd dewatering and juvenile stranding analyses found many increases in potential negative effects balanced by many reductions in such effects." [Footnote 68: RDEIR/SDEIS, Appendix 11N-53.] This is false, and at best, contradictory reasoning. Stranding events and non-stranding events cannot be traded off against each other "on average" because they are not biologically symmetrical. Once an individual juvenile fish is stranded, even once, it is dead -- it does not matter one bit if in other places at other earlier or later times, it would not been stranded at all or would have benefited in some way. It only takes a single event (not an "averaged sum") for a stranding to result in death. Once a fish is dead, it stays dead. It cannot benefit from later more benign events. [Footnote 69: This is comparable to in-river fish mortality events in response to summer daily hot water temperature spikes. Once a spike occurs at fatal temperatures, even once, the fish affected by that spike are dead. It does not matter thereafter what the "average daily temperature" was for that day. The "average daily temperature" is a mathematical construct while the high temperature spike is a real mortality event.] In short, its death cannot be averaged away.	not been stranded at all or would have benefited in some way. It only takes a single event (not an "averaged sum") for a stranding to result in death. Once a fish is dead, it stays dead. It cannot benefit from later more benign events." Tables 11N-28, 11N-29, and 11N-30 in Appendix 11N, Other Flow-Related Upstream Analyses, provide the mean results for a large range of stranding conditions over many years. The results of the stranding model (and most of the other analyses and models used in the Final EIR/EIS) do not follow mortality events for a single cohort of fish, as suggested in the comment. Therefore, according to the results, while increased stranding in April during some years would reduce the abundance of juveniles in May of the same years, reduced stranding in May of some years would lead to increased abundance of juveniles in June of the same year. Or, to build on the commenter's argument, a fish stranded in April would be eliminated from the population, but those not stranded and surviving into May would have a greater mean chance of surviving into June. Because the reductions in mean stranding during May are much greater than the increases during April, we conclude that the potential positive effects in May outweigh any negative effects in April. Please refer to Master Response 5, Aquatic Biological Resources, for a detailed discussion of thresholds and criteria used in analyses, as well as the use of means in reporting results. When available (e.g., temperature effects on salmonids), results are evaluated in terms of thresholds ("index values," see Appendix 11B, Upstream Fisheries Impact Assessment Quantitative Methods).

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72-66	Removing large numbers of juvenile fish from the river, including by periodic mortality events like strandings, just means fewer fish to benefit from later changing conditions. Dead fish, from whatever the cause, are in fact removed from the population. Juvenile stranding events with mortalities of as much as 30 percent of the fish present [Footnote 70: RDEIR/SDEIS, Table 11N-28 through Table 11N-30.] thus represent significant mortality events that have serious implications, particularly for already extremely weak and now geographically very limited populations like the endangered winter-run Chinook. Mitigation measures to prevent these mortality events should be incorporated into the Project Plan and into its permits.	Please see response to comment 72-65. Also refer to Master Response 5, Aquatic Biological Resources, for a discussion of baseline and special-status species used for impacts assessments, not including consideration of the degraded status of the population.
72-67	5. Migration Flow -- Survival Relationships At page 11-119, the NGO coalition notes the following correct summary of what is now the best available science with regard to the relationship between higher flows of water through the Delta and out-migrating salmon survival rates: "Diversions from the Sacramento River to Sites Reservoir under Alternatives 1, 2, and 3 have the potential to affect survival of juveniles salmonids, including winter-run Chinook salmon, based on flow-survival relationships. Several recent analyses provided evidence for positive correlations between Sacramento River flows and survival of Chinook salmon [citations omitted]." On that same page, the RDEIR/SDEIS also states: "The discussion in Section 11P.2 of Appendix 11P, Riverine Flow-Survival, illustrates that the Sites Reservoir diversion criteria generally minimizes diversions during the historical periods of fish movement…and application of the flow-threshold criteria…suggests that flow-survival effects on juvenile Chinook salmon (including winter-run Chinook salmon) would be greatly limited by the diversion criteria." Project proponents also claim:	Sites Reservoir is comparable in size and depth to Lake Berryessa and, similar to Lake Berryessa, is expected to stratify in late spring and summer months. Sites Reservoir will be between 1.3 and 1.5 million acre-feet and up to 310 feet deep. Lake Berryessa is a 1.6 million acre-foot reservoir with an maximum depth of 275 feet. Lake Berryessa is a reasonable model because its comparable size, its location on the east side of the coastal mountain range, and comparable climate conditions at both locations. Withdrawals from Sites Reservoir would be made via the I/O tower. The I/O tower would allow withdrawal for seven different elevations under Alternatives 1 and 3 and six different elevations under Alternative 2. This would allow Project operators to manage withdrawals for temperature and turbidity requirements. Reservoir releases would be made to the TC Canal and GCID Main Canal for north-of-Delta agriculture and municipal uses. Water for export south of the Delta would be conveyed from the reservoir to the TC Canal to its terminus, then via pipeline to the Colusa Basin Drain (CBD) (Alternatives 1 and 3) or to the Sacramento River (Alternative 2).

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	"As discussed in Chapter 6, the effects of Alternatives 1A, 1B, 2, and 3 on water temperatures at the Sites Reservoir release site in the Sacramento River would be relatively small with the releases generally tending to cause a slight reduction in water temperature (Tables 6-12a through 6-12d). Therefore, temperature-related effects of Alternatives 1A, 1B, 2, and 3 on winter-run Chinook salmon at the Sacramento River release site would be minimal…For Alternatives 1A, 1B, 2, and 3, water temperatures at this location would either stay the same or be reduced due to Sites Reservoir releases." [11-120] Hypothetical reductions in Sacramento water temperatures due to Sites Reservoir timed inputs, of course, depends on two things: (a) whether those inputs are applied directly to the Sacramento River or not, which according to the description of the Project alternatives in the Executive Summary [Footnote 71: RDEIR/SDEIS, Table ES-1 on pg. ES-8.] could only be achieved under Alternative 2, and; (b) the initial temperature of the water originating at the Sites Reservoir at the upper end of the pipeline to the river. Left to itself the Sites Reservoir is simply going to absorb sunlight, especially during summer months, and heat up, collecting and spreading that solar energy broadly through its increased surface area like any other lake. Unless the reservoir becomes temperature stratified, it will become just like a bathtub of warm water, water that might well be warmer (not cooler) than the Sacramento River at the time of inflow. The RDEIR/SDEIS should explain in more detail any water temperature reduction measures, if any, that are planned for keeping the water temperatures of water delivered from Sites Reservoir to the Sacramento River as low-temperature as possible. For instance, is the reservoir expected to stratify in temperature, and if so, will there be temperature control	Water releases to the CBD near Dunnigan (Alternatives 1 and 3) would be conveyed via Knights Landing Outfall to the Sacramento River. Modeling of the effect of releases on the receiving water is discussed in Master Response 4, Water Quality, in the Final EIR/EIS, and Appendix 6D, Sites Reservoir Discharge Temperature Modeling. In addition to temperature at the reservoir release location and the Sacramento River receiving location, the model accounts for blending with water in the TC Canal and CBD and temperature exchange with the atmosphere at a monthly time step. The results indicate that the effect on Sacramento River water temperatures from either of the two conveyance methods is expected to be relatively small, with the releases generally only causing a slight reduction in water temperature within a limited area downstream of the mixing point compared to the No Project Alternative. Monitoring of releases during operations would allow confirmation of modeling results and refinement of temperature control via the I/O tower, but given the relative volumes of releases and flow in the river, and as demonstrated by modeling results, releases are not likely to result in substantial effects to species or river water quality. As such, no additional in-reservoir temperature reduction measure such as the ones cited by the commenter (which could come with their own sets of potentially detrimental impacts) are necessary or advisable at this time.

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	devices sufficient to take water only from the lower-temperature level of that stratification? What will the average depth of the reservoir be? Will it be covered in some way, such as naturally with the introduction of floating water plants, or with floating solar collectors as some have proposed, in order to reduce initial water temperatures?	
72-68	The Coalition would like to know the initial water temperature (for water from the reservoir) that is assumed and built into Table 11-15. An overly-optimistic assessment of the water temperature effects on the slack-water, completely exposed reservoir from (particularly summertime) solar heating would lead to nonsensical conclusions.	The water temperature releases from Sites Reservoir are calculated with the CE QUAL W2 model. Detailed description of the model is provided in Appendix 6D, Sites Reservoir Discharge Temperature Modeling.
72-69	Mitigation Measures FISH-2.1 And FISH-3, Wilkins Slough Flow Protection Criteria, are not adequate. The NGO Coalition notes some concerns with Mitigation Measures FISH-2.1 and FISH-3 as the Project's primary fish impacts mitigation measures. These measures by its own terms [11-131], would only be in place during March through May of each year. However, salmonid species like the ESA-listed winter-run and spring-run Chinook, and the non-listed but seriously depressed fall-run Chinook, are well known to be present and migrating through the system at other times of the year, during which these stocks would be more severely impacted. For example, the RDEIR/SDEIS at 11-130 to 11-131 states: "Mitigation Measure FISH-2.1 will limit the potential for negative flow-survival effects to winter-run Chinook salmon during their dispersal to rearing habitat and/or migration downstream toward the Delta." However, as the RDEIR/SDEIS admits, winter-run Chinook salmon migrate past the diversion points for Sites Reservoir (at the Red Bluff Diversion Dam and at Hamilton City) and past Wilkins Slough well before the month of March, which is when the protections provided by FISH-2.1 would begin, and they are generally migrating out of the Delta between December and May. [Footnote 72: See RDEIR/SDEIS at 11-79 to 11-80 (noting that half of the annual migration of	In the Final EIR/EIS, the Project alternatives' operational criteria now include the Wilkins Slough bypass flow criterion of 10,700 cfs from October 1 to June 14, thereby addressing concerns that the juvenile salmonid migration period is not covered by the criteria. Please also see Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures.

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	juvenile winter-run Chinook salmon have passed the Red Bluff Diversion Dam before late October and 90 percent before January 1; noting that winter-run Chinook salmon are caught in Knights Landing rotary screw traps between mid-September to mid-March, with the bulk of the run (90 percent) generally passing between early October to mid-March; noting that winter-run Chinook salmon are generally caught in the Chipps Island trawls between December 1 and May); see id. At 11-124 ("the main period of juvenile winter-run Chinook salmon occurrence in the Delta (i.e., December-April")).] Indeed, most migrating juvenile Chinook salmon, including nearly all juveniles of the winter-run and late-fall run, will not be protected by this bypass flow requirement as most of these fish have migrated downstream of Knights Landing before March. [Footnote 73: See RDEIR/SDEIS at 11-120 and citations therein.]	
72-70	In short, mitigation measure FISH-2.1 will limit pumping that reduces flows in the Sacramento River below 10,700 cfs only after winter-run Chinook salmon have already migrated downstream to the Delta, and as a result this mitigation measure wholly fails to protect juvenile winter-run Chinook salmon from the harmful effects of the proposed Project and alternatives as they migrate down the Sacramento River. The RDEIR/SDEIS's conclusion that the proposed project and alternatives will not cause significant environmental impacts to winter-run Chinook salmon is simply unsupported by its own analysis, and is thus arbitrary and capricious, and the document must be revised to include adequate mitigation measures that apply when winter-run Chinook salmon are actually migrating down the Sacramento River.	In the Final EIR/EIS, the Project alternatives' operational criteria now include the Wilkins Slough bypass flow criterion of 10,700 cfs from October 1 to June 14, thereby addressing concerns that the juvenile salmonid migration period is not covered by the criteria. Please also see Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures.
72-71	Similar timing problems for related flow bypass measures also invalidate mitigation measures proposed to protect spring-run (FISH-3) and fall-run Chinook, as well. Since all these species are present in the river outside the very limited March through May mitigation period, these essentially	In the Final EIR/EIS, the Project alternatives' operational criteria now include the Wilkins Slough bypass flow criterion of 10,700 cfs from October 1 to June 14, thereby addressing concerns that the juvenile salmonid migration period is not covered by the criteria. Please see

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	unmitigated additional impacts on already severely depressed salmonid stocks could not be "insignificant" in any sense of the word.	Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures.
72-72	D. Impacts to Water Quality. The RDEIR/SDEIS downplays the evidence and the risk to surface water quality that is likely to occur upon execution of the Project. This iteration is an improvement from the 2017 version which claimed, "[b]ecause no potentially significant direct water quality impacts were identified, no mitigation is required or recommended." In the RDEIR/SDEIS, Project proponents now acknowledge some water quality issues but offer contradictory mitigation measures while downplaying or ignoring other water quality issues.	The water quality impact analysis in Chapter 6, Surface Water Quality, concludes less-than-significant effects on surface water quality with respect to salinity, water temperature, HABs, invasive aquatic vegetation, nutrients, organic carbon, and dissolved oxygen. The analysis acknowledges the potential for significant and unavoidable water quality impacts related to methylmercury and potentially significant water quality impacts related to metals in Stone Corral Creek and metals and pesticides in Yolo Bypass and introduces Mitigation Measures WQ-1.1, WQ-2.1, and WQ-2.2, respectively, to address these potentially significant impacts. Please see Master Response 4, Water Quality, for more information regarding the water quality analysis contained in Chapter 6.
72-73	The RDEIR/SDEIS Does Not Disclose Reasonably Foreseeable and Currently Occurring Clean Water Act Processes and Impairments that Impact the Project. The State of California Water Resources Control Board and Central Valley Water Board have the responsibility of implementing the Clean Water Act ("CWA") and Porter Cologne Water Quality Control Act for California Waters. California is also responsible for protecting the public trust and preventing unreasonable use of water. This means that California is also responsible for listings under the CWA 303(d) process and creating associated Total Maximum Daily Loads (TMDL) and updating and implementing Basin Plans. Under these processes California has not only been working to update the Bay Delta Water Quality Control Plan, which will require flow enhancement actions, they have also been working to catch up on the 2018, 2022, 2024 303(d) listings.	At the time of public release of the RDEIR/SDEIS in November 2021 and when the information in Appendix 6A, Water Quality Constituents and Beneficial Uses, was compiled prior to November 2021, and the 2014–2016 303(d) list was the most recent list approved by the State Water Resources Control Board and U.S. Environmental Protection Agency (USEPA). Since that time, the 2020–2022 Integrated Report for Clean Water Act 303(d) and 305(b) (Central Valley Regional Water Quality Control Board 2022) has been approved by both of these agencies (May 2022). Accordingly, Table 6A-4 in the RDEIR/SDEIS has been updated and the table title revised to "Impaired Water Bodies in the Study Area Included in the 2020–2022 California Integrated Report for Clean Water Act Sections 303(d) and 305(b)" in Appendix 6A of the Final EIR/EIS. In addition, applicable text in Chapter 6, Surface Water Quality, in the Final EIR/EIS has been updated based on the 2020–2022 303(d) list. The updates to the 303(d) list for the

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	The state decided to not include new temperature listings for the Sacramento River and Bay Delta in the 2018 303(d) list updates despite significant evidence that listings were warranted and a huge body of scientific studies and evidence showing that there is a temperature impairment. Furthermore, the Central Valley Water Resources Control Board released its draft report which called for the listing of two segments of the Sacramento River and one segment of the Bay Delta as temperature impaired on June 4, 2021 and took public comment on July 6, 2021. This information was then publicly available to Project proponents before the release of the RDEIR/SDEIS. The State Water Resources Control Board then took comments on the 303(d) listings in December 2021 and approved the listings in January 2022. Therefore, the RDEIR/SDEIS statement that "[n]one of the waterbodies in the study area are listed on the 303(d) list as having water temperature impairments," [Footnote 74: RDEIR/SDEIS, 6-5.] is intentionally misleading.	geographies discussed in the impact analysis were relatively minor and include water temperature and dissolved oxygen for specific reaches of the Sacramento River. The updates to the most recently approved list(s) do not change conclusions or impact determinations identified in the analysis because Sites Reservoir releases would not adversely affect water temperature or dissolved oxygen in the Sacramento River.
72-74	Cold water fisheries, particularly their spawning and rearing, are the most sensitive beneficial uses within the Sites project. Elevated temperatures and low Dissolved Oxygen (DO) impairments are the principal threats to cold water fisheries within the project area. Despite this, no water quality related mitigation measures related to survival of cold-water fisheries are proposed in this RDEIR/SDEIS. Mitigation Measure FISH-2.1, Wilkins Slough Flow Protection Criteria, is inadequate to deal with temperate and DO impacts to cold water fisheries.	The water quality (temperature)–related effects on cold-water fish (e.g., salmonids and sturgeon) were found to be less than significant/not adverse. Each impact statement for cold-water fish reports potential temperature-related effects of the Project and describes why any changes relative to the baseline would be considered less than significant or not adverse. As a result, no mitigation is required.
72-75	[Exhibit 3] New 303 (d) listings in the Project Area [Footnote 75: Compiled from the State Water Resources Control Board 2022 Water Quality Assessment Integrated Report. Available online: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022_integrated_report.html]	Please see response to comment 72-73 regarding the 303(d) listings. The commenter provided this exhibit for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.

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72-76	The RDEIR/SDEIS Does Not Accurately Assess or Mitigate Water Quality Impacts. Chapter 6 mentions mercury 574 times indicating the focus on this particular constituent but places less scrutiny over the other water quality constituents contained in water diverted to, impounded in, and released from Sites Reservoir: water temperature, salinity, aluminum, arsenic, cadmium, chromium, copper, iron, lead, manganese, nickel, selenium, silver, zinc, pesticides, nutrients, and HABs (Harmful Algae Blooms).These water quality constituents exceed established water quality criteria in some existing waterbodies in the study area and will be present in the source waters, increased by evaporative enrichment and exacerbated by operations of a surface water reservoir. Since water quality in the proposed reservoir will reflect that of the source waters, the reservoir will hold numerous metals, including aluminum, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc.	The level of detail provided for each water quality constituent depends on level of concern, the amount of information available, and the level of detail needed for an impact determination. Mercury is mentioned frequently in Chapter 6, Surface Water Quality, because it is highly toxic, extensively studied, and is a focus of environmental regulations such as total maximum daily loads (TMDLs). Please see Master Response 4, Water Quality, for a summary and additional detail regarding the metals analysis, including source-water concentrations, a discussion of water quality standards, and the selection of metals for evaluation. Based on the evaluation of pesticide data described in the environmental setting and Impact WQ-2 of Chapter 6, pesticide concentrations are not expected to be elevated in Sites Reservoir. Water temperature is evaluated extensively in Chapter 11, Aquatic Biological Resources, as it relates to effects on fish species.
72-77	On page 6E-30 the Project proponents state, "Quantitative assessment was performed for total concentrations of four metals: aluminum, copper, iron, and lead. These four metals are of greatest concern based on what the measured data show for seasonal changes in concentration and concentrations above standards." The Coalition applauds the consultants for recognizing these 4 metals pose a challenge to meeting standards and correctly inferring that "seasonal changes" (e.g. high flow events) will raise metal concentrations. However, ignoring the other existing metals and failing to analyze synergistic effects will not protect the environment. Each of these metals may adversely affect reservoir water quality by themselves and must be analyzed to determine combined synergistic effects. The SWRCB 2016 "A Compilation of Water Quality Goals" states that "When multiple constituents have been found together in groundwater or surface waters, their combined toxicity should be evaluated," and that "theoretical risks from chemicals found together in a water body shall be considered	Please see Master Response 4, Water Quality, for a discussion of metals selected for evaluation and additive effects of metals. Master Response 4 discusses why the selected metals were those most likely to experience an increase in exceedance of water quality standards and therefore provide a reasonable representation of the potential water quality impacts associated with operational effects on metal concentrations. Please also see Master Response 4 for a discussion of additive effects. The applicability of the policies identified in the comment is limited because Sites Reservoir would not be a cleanup site, hazardous waste site, or Superfund site (see Chapter 27, Public Health and Environmental Hazards, for more information regarding hazardous material sites). Master Response 4 explains why determination of the combined effects of metals on aquatic resources would be inaccurate

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	additive for all chemicals having similar toxicologic effects or having carcinogenic effects." [Footnote 76: See State Water Resources Control Board 2016 "A Compilation of Water Quality Goals", pg. 44.] This RDEIR/SDEIS did not consider the combined effects of metals and is therefore deficient.	due to the lack of accurate tools to account for the variable and unknown nature of the interaction of all effects.
72-78	Additionally, the streams within the footprint of the reservoir and the presumed source waters emanating from the Cottonwood Creek drainage are known to contain concentrations of these water quality impediments, [aluminum, copper, iron and lead] especially during high flow events. [Footnote 77: RDEIR/SDEIS, pg. 2-30. "Sites Reservoir would be filled through the diversion of Sacramento River water that generally originates from unregulated tributaries to the Sacramento River downstream from Keswick Dam."]	Please see Master Response 4, Water Quality, for a description of how the available data were used to estimate metal concentrations in the diversions for Sites Reservoir storage based on flow and the percentage of tributary inputs. This approach maximized the data pool for measurements taken at high flows in the Sacramento River source water. Water emanating from Cottonwood Creek is part of the tributary inputs to the Sacramento River and its effect on both the measured and estimated metal concentrations is included in the values for the Sacramento River near the diversion locations for Sites Reservoir.
72-79	According to the Project proponent's website, "Sites Reservoir does not rely on snowmelt but captures winter runoff from uncontrolled streams below the existing reservoirs in the Sacramento Valley. ...Much of the rainfall from extreme events -- especially those that occur back-to-back when the ground is saturated..." [Footnote 78: See https://sitesproject.org/about-sites/, last accessed 24 January 2022.] When there is significant precipitation, releases from the upstream reservoirs during the winter will be curtailed during high runoff periods to prevent downstream flooding. These time periods would increase the contribution of elevated tributary metal constituents, especially those coming from Cottonwood Creek. The negative impacts on water quality in the Sacramento River will be greater at these times then those predicted by the metric on page 6E-30 which dilutes the metal-laden tributary water with Shasta Reservoir water. The proposed metric would more accurately characterize the metal concentration by measuring metal concentrations pouring out of Cottonwood Creek during	Diversions to Sites Reservoir would occur when flow in the Sacramento River is greater than what is required for instream and water supply requirements. The amount of water originating from local tributaries would be variable and would never constitute 100% of the flow. For example, if Shasta Lake makes flood control releases, most of the water would originate from Shasta Lake. 78. Although water quality measurements did not target high flows, multiple measurements were taken during higher flows. Master Response 4, Water Quality, discusses available data and how the available data were used to develop exponential equations to estimate metal concentrations as functions of tributary input and flow, allowing estimation of concentrations under more extreme conditions than what was present during measurements. The difference between flow

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	high flow rather simply tabulating cfs for Keswick + Bend Bridge. The failure to monitor metal concentrations on a set time schedule rather than during highest flow events is a significant oversight and leaves the RDEIR/SDEIS deficient.	at Bend Bridge and flow at Keswick indicates the amount of flow coming from local tributaries. CALSIM results for flow in the Sacramento River at Keswick and Bend Bridge were used to estimate the percent of local tributary runoff in the water that would be diverted to Sites Reservoir storage. Under conditions of high flow and tributary input, the estimated values can be higher than measured values.
72-80	1. Selenium The Sites Reservoir planners are aware of the potential for diminished water quality from naturally occurring selenium in the region they plan to inundate. A survey done by the Regional Water Quality Control Board ("RWQCB") in 1988 demonstrated that Sacramento River water generally met water quality standards for selenium except for streams that flowed into the valley draining the coast range. While the RWQCB survey did not directly measure selenium concentrations in the streams that drain the Antelope Valley, it did measure streams on both sides of the project. The survey indicated that precipitation events mobilize selenium in the watersheds of the Sites region to unsafe levels for fish, humans and agriculture. [Footnote 79: Regional Water Quality Control Board, Central Valley Region 1988. Water Quality Survey for Selenium in the Sacramento River and its Major Tributaries. "Historical data on selenium concentrations in surface water of the Sacramento River Basin indicated periods of elevated selenium levels, especially from areas originating in the western portion of the basin. Selenium concentrations as high as 390 ug/L were recorded in surface water in the Sacramento River Basin. This concentration is similar to the levels found in agricultural drainage water entering Kesterson Reservoir via the San Luis Drain (USGS, 1985). Because of the concern over the effects that these selenium levels may have on aquatic life in both the River Basin and the Delta, a program of water quality monitoring was initiated to help define the sources of selenium And whether further assessment of waste	Selenium enters the westside creeks by watershed runoff passing over and through seleniferous substrate. Water in Sites Reservoir would not be passing through the reservoir substrate prior to entering the reservoir. Instead, most of the movement of water through the reservoir substrate would be downward, away from the water stored in the reservoir, contributing to local groundwater supplies in the same manner as precipitation. As described in Chapter 6, Surface Water Quality, selenium concentrations in Stone Corral Creek are somewhat higher than in the Sacramento River (average measured total selenium of 6.74 micrograms per liter [µg/L] in Stone Corral Creek and less than 0.95 µg/L in the Sacramento River; Appendix 6E, Water Quality Data), but the Project would not affect the selenium load from Stone Corral Creek and Funks Creek because the Project would not alter the selenium running off from the Stone Corral Creek watershed. These creeks are expected to contribute only a small percent of the water in Sites Reservoir. The volume of inflow from Stone Corral Creek and Funks Creek is small, estimated to be a combined average of 14 TAF/year. The Sacramento River input to Sites Reservoir storage will greatly dilute selenium originating from the Antelope Valley via Funks Creek and Stone Corral Creek watersheds.

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	discharge regulation was needed." pdf p. 12; "Of the samples taken prior to 1984, the highest reported selenium concentration occurred principally along the western half of the basin. Samples taken in the Stony Creek Watershed and the Clear Lake area showed consistently high values. Between 1980 and 1981, DWR conducted a trace element survey in the Stony Creek area in conjunction with the Thomes-Newville water storage project study (DWR Files). Total selenium concentrations regularly exceeded the 10 ug/L standard with the highest reported selenium at 240 ug/L. Samples taken in the Clear Lake area have shown concentrations reaching 80 ug/L for total selenium. The Colusa Basin Drain which receives runoff from the westside streams, as well as a significant amount of irrigation return flow, showed the highest concentration at 390 ug/L total selenium in 1981." pdf p. 18 "A special survey in Black Butte Reservoir which included composite sediment sampling was conducted in October 1986 to verify historical data that showed high [selenium] values in the reservoir discharge. "In October 1986, sediment and water samples were taken from the Black Butte Reservoir area, to verify historical data reporting selenium levels up to 240 ug/L (DWR files) and in response to selenium levels ranging from 0.7 mg/Kg to 1.9 mg/Kg detected in fish livers by the California Department of Fish and Game during 1984 and 1985." pdf p. 20. Available online: http://www.waterboards.ca.gov/rwqcb5/water_issues/swamp/historic_reports_and_faq_sheets/bckgrnd_selenium/wq_sur vey_sacrvr_tribs_88.pdf] According to USGS research, "Evaporative enrichment can cause elevated selenium concentrations in terminal water bodies" (p. 24) and "...selenium can be transported from source areas in mountains to irrigated areas in adjacent valleys" (p. 27). [Footnote 80: Ralph L. Seiler, et.al. 1999. Areas Susceptible to Irrigation-Induced Selenium Contamination of Water and Biota in the Western United States U.S. GEOLOGICAL SURVEY CIRCULAR	

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	1180. Available online: https://www.fws.gov/mountainprairie/contaminants/papers/circ1180.pdf.] Therefore, the DEIS/EIR must survey the Antelope Valley watershed to determine the amount of selenium that is likely to dissolve into the stored water. Furthermore, the analysis must determine if evaporative enrichment would exacerbate any environmental or agricultural problems associated with excessive selenium concentrations.	
72-81	2. Mercury Impact WQ-2 (Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water quality during operation) is identified as CEQA significant and unavoidable (SU) and NEPA substantial adverse effect (SA) for all alternatives. This obviously conflicts with and obstructs implementation of a water quality control plan (Impact WQ-5). The identification of Impact WQ-2 admits that the project will violate water quality standards of the Central Valley Water Quality Control Plan (Basin Plan) and will result in a significant impact and substantial adverse effect which conflicts with the Basin Plan. In the Sacramento River at Hamilton City, Table 6-5 shows that total mercury concentrations have been measured as high as 54 ng/L, which are higher than the CTR criterion of 50 ng/L and raise concern for significant and substantial adverse effects when waters with these types of concentrations are diverted into the reservoir.	An exceedance of a water quality control plan (basin plan) water quality objective would not necessarily indicate a conflict with, or obstruction of, implementation of the applicable basin plans for the study area. The potential for the Project to exceed single-constituent water quality objectives, as well as beneficial uses, was considered in the impact analyses presented for Impacts WQ-1, WQ-2, and WQ-3 in Chapter 6, Surface Water Quality. As described in Chapter 6 for Impact WQ-5, water quality control plans include consideration of all beneficial uses (e.g., Central Valley Regional Water Quality Control Board 2019a:2-1, State Water Resources Control Board 2018:9). While consideration of single-constituent water quality objectives is part of the consideration, the approach related to the evaluation of Impact WQ-5 is broader, given the fact that exceedances of single water quality constituents does not necessarily suggest a conflict with or obstruction of implementation of a basin plan. If water quality effects were expected to be severe or if there were no increases in beneficial uses expected to result from the project, this impact would be considered significant. Impact WQ-5 considers the overarching goal of basin plans to maximize multiple beneficial uses of water, considering changes in all beneficial uses along with changes in water quality, not simply whether a single water quality constituent objective would be exceeded.

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		Total mercury concentrations in Sacramento River diversions to Sites Reservoir may be higher than the mean concentrations cited for the Sacramento River at Red Bluff and Hamilton City in Chapter 6. However, in large part, mercury would be associated with suspended sediment, which would mostly settle out in the reservoir. In addition, comparisons with other nearby reservoirs and lakes can provide insight into the expected mercury concentrations that would occur at Sites Reservoir. As discussed in Appendix 6F, Mercury and Methylmercury, apart from Clear Lake, on which the Sulphur Bank Mercury Mine Superfund site is located, mean concentrations of total mercury were not greater than 4.42 nanograms per liter (ng/L). None of almost 500 other samples from nearby reservoirs exceeded the 50 ng/L total mercury California Toxics Rule (CTR) criterion. Fish tissue methylmercury concentrations within Sites Reservoir will depend on many factors; however, tissue concentrations are expected to be comparable to those in existing nearby reservoirs in the long term. Reservoir water quality management actions (i.e., Mitigation Measure WQ-1.1) described in Chapter 6 and Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, would minimize mercury methylation and methylmercury accumulation in fish tissues. As stated in Chapter 6, although the potential to reduce methylmercury concentrations exists based on current research, the effectiveness of the methylmercury minimization actions to reduce reservoir methylmercury concentrations such that there would be no substantial measurable increase in aqueous and fish tissue methylmercury concentrations at downstream locations is not known at this time. Thus, the impact is significant and unavoidable.
72-82	Table 6-5 shows that total mercury concentrations have been measured as high as 14.4 ng/L in the Sacramento River at Red Bluff but only 0.52 ng/L in Oroville Reservoir. The comparatively low concentrations of total mercury	Expected mercury concentrations were determined for the Project based on the qualitative assessment in Chapter 6, Surface Water Quality, described in Section 6.3 (Methods of Analysis) and in

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	from the water in Oroville Reservoir have been sufficient to cause fish from this reservoir to exceed the numeric criterion and objectives for fish, including both sport and prey fish, for the protection of human health and wildlife as contained in the Sacramento--San Joaquin River Delta Estuary TMDL for Methylmercury and Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California--Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions. Fish tissue concentrations as high as 0.7 mg/kg have been found in fish from Oroville Reservoir (DWR 2007). Since mercury concentrations of up to only 0.52 ng/L in Oroville Reservoir have been enough to cause levels to be exceeded in Oroville, concentrations of mercury as high as 14.4 ng/L in water diverted to the proposed reservoir from the Sacramento River at Red Bluff is likely to cause severe impacts and adverse effects in the proposed reservoir and in downstream releases.	Appendix 6F, Mercury and Methylmercury, which cataloged mercury data and other information from reservoirs in California to compare with the Sites Reservoir in terms of location, size, expected reservoir surface elevation fluctuations, mercury sources, and fish species present. Expected mercury/methylmercury concentrations for Sites Reservoir cannot be compared to the No Project Alternative because Sites Reservoir would not exist under the No Project Alternative. Regardless, the analysis acknowledges that both in the short term and long term there would be more methylmercury generated within the reservoir than would be degraded, particularly in the short term. The analysis acknowledges that the expected average and reasonable worst-case fish tissue concentrations of methylmercury would exceed the 0.2 milligrams per kilogram (mg/kg) (wet weight) California sport fish objective. Similarly, the impact analysis discusses the potential for releases from Sites Reservoir to result in bioaccumulation of methylmercury in fish at other locations (i.e., Funks Creek and Stone Corral Creek, Colusa Basin Drain, Yolo Bypass, and the Delta). Mitigation Measure WQ-1.1 would be implemented to minimize bioaccumulation of methylmercury by requiring action be taken to reduce, monitor, and manage mercury in the reservoir. Most of the methylmercury control actions identified under Mitigation Measure WQ-1.1 are recommended actions by the State Water Resources Control Board and Regional Water Quality Control Boards for new reservoirs (State Water Resources Control Board 2017a). However, the degree of effectiveness of any of the identified actions to reduce mercury methylation and bioaccumulation in Sites Reservoir specifically is not known at this time. Therefore, this impact on water quality would be significant and unavoidable.

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		The California Office of Environmental Health Hazards Assessment methylmercury fish consumption advisories would continue to be implemented in the study area during operation of the reservoir, and these advisories would serve to protect people against the overconsumption of fish with increased body burdens of mercury for those following these recommendations.
72-83	The RDEIR/SDEIS states on page 6-17 explains how newly inundated reservoirs in this region often have, "higher net methylmercury production in early years after filling, when organic carbon is relatively abundant, relative to long-term average production. This initial spike in mercury methylation can increase the concentrations of water column methylmercury to double or triple the long-term average concentrations for up to 10 years." The RDEIR/SDEIS strategy for dealing with this dangerous water quality problem is 1) to not stock the reservoir with fish for 10 years, and 2) release water from high in the reservoir since the methylmercury concentrations are greater deep in the reservoir. While the Coalition admits recognition of the issue, the suggested mitigation measures are insufficient. There is no assurance that methylmercury levels will drop sufficiently to allow fish stocking or that private citizens will refrain from stocking the water. In fact, reservoir fluctuations would also contribute to conditions favorable to mercury methylation. It is expected that the Project fluctuations would be greater than median fluctuations of other reservoirs in the state, which indicates that Sites Reservoir fluctuations would likely contribute to conditions favorable to mercury methylation.	As indicated in Mitigation Measure WQ-1.1 and in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, as part of the Reservoir Management Plan (RMP), multiple measures will be implemented to reduce mercury methylation in Sites Reservoir and, thus, bioaccumulation of methylmercury in reservoir fish. Most of the measures identified under Mitigation Measure WQ-1.1 are recommended actions by the State Water Resources Control Board and Regional Water Quality Control Boards for new reservoirs (State Water Resources Control Board 2017a). However, the degree of effectiveness of any of the identified actions to reduce mercury methylation and bioaccumulation in Sites Reservoir specifically is not known at this time. Therefore, this impact would be significant and unavoidable. The Authority and Reclamation acknowledge that unauthorized fish stocking could occur, but Sites Reservoir is located relatively remotely, which likely would constitute a deterrent to this unauthorized practice. An additional action was added to Mitigation Measure WQ-1.1 and to the RMP (Appendix 2D) to minimize potential public exposure to methylmercury through consumption of Sites Reservoir fish prior to regulated stocking of the reservoir. A fish sampling program will be implemented upon completion of the initial filling of the reservoir. Initially, a sampling program will be implemented to determine whether game fish are present (either because of

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		unauthorized stocking or fish entrainment at the Sacramento River diversions). Once it has been determined that a population of game fish has established in the reservoir, annual monitoring of Sites Reservoir fish tissue methylmercury concentrations will commence. If the 0.2 mg/kg sport fish objective is exceeded, fish consumption warning signs will be posted in several visible locations around the reservoir, in coordination with the State Water Resources Control Board, the Central Valley Regional Water Quality Control Board, and the Office of Environmental Health Hazards Assessment. Fish consumption advisories would serve to protect people against the overconsumption of fish with increased body burdens of mercury for those following these recommendations. The addition of this action to the Final EIR/EIS does not change conclusions or impact determinations identified in the analysis in Chapter 6, Surface Water Quality. As indicated for Mitigation Measure WQ-1.1, once authorized fish stocking begins, fish tissue monitoring will also be implemented for a minimum of 10 years. Annual reservoir water level fluctuation in Sites Reservoir is considered in the assessment of factors driving fish methylmercury concentrations, as described in Appendix 6F, Mercury and Methylmercury. In Section 6F.3.1, Sites Reservoir Project Footprint, of Appendix 6F, text has been revised with regard to modeled mean annual long-term reservoir water level fluctuations and the narrative text has been revised and clarification added, accordingly. While expected Sites Reservoir water surface level fluctuations would be greater than median fluctuations in other existing California reservoirs, expected fluctuations would be within the ranges reported by other reservoirs.

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		Please refer to Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower to control releases of water quality constituents.
72-84	The inundation of native landscapes transforms woodlands, grasslands and riparian zones into drowned dead zones that, when drained, are highly erodible. The RDEIR/SDEIS states on page 6-31 that "[w]ind, rain, and wave action commonly erode bare soil adjacent to reservoirs and could cause erosion along the edge of Sites Reservoir when it is not full. These phenomena may temporarily increase turbidity along the reservoir's edge prior to settling of the sediment, but this increase would not markedly affect beneficial uses of the reservoir (i.e., recreation, water supply, fisheries and wildlife)." Erosion of soils in the exposed inundation zone will deposit sediment on the reservoir bottom and re-suspend soils laden with metals and other contaminants, which will exacerbate water quality impacts in the reservoir and downstream releases.	Please see Master Response 4, Water Quality, for a discussion of the effects of shoreline erosion.
72-85	3. Evaporative Enrichment of Contaminants The RDEIR/SDEIS on page 6-32 states that evapoconcentration could increase constituent concentrations in Sites Reservoir by up to 48 percent. When the source water is more highly contaminated with metals and the soils in the reservoir contribute more salt/metal into the reservoir and the impounded water is exposed to heat/wind causing evaporation, water quality declines over time despite the introduction of dilution. It is therefore inevitable that water released from Sites Reservoir to the Sacramento River will contribute higher concentrations of constituents such as salt and metals. The RDEIR/SDEIS does not adequately evaluate the effects from these higher concentrations on water quality and beneficial uses of the Sacramento River.	As described in the Chapter 6, Surface Water Quality, Section 6.3, Methods of Analysis, and implemented in the analysis for Impact WQ-2, evapoconcentration is incorporated into the quantitative assessments for metals and salinity and is considered in the evaluation of the beneficial uses. The Final EIR/EIS includes updated estimates of evapoconcentration (based on Project and model refinements in the CALSIM simulations) and describes why the most concentrated water is unlikely to be released for water supply purposes. The signature of evapoconcentration in the metals estimates is sometimes apparent, but often obscured by the variability in estimated reservoir inflow concentrations. This revision does not change conclusions or impact determinations identified in the analysis.
72-86	The RDEIR/SDEIS recognizes existing data is insufficient and considers collecting additional source- water quality samples for metals at	The information used to conduct the evaluation in Chapter 6 is sufficient to provide decision makers with an understanding of the

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	predetermined intervals to identify problematic metal loads that may occur after the reservoir is built and in operation. There has been ample time during the 20+ years this Project has been promoted to collect appropriate highflow metal data. Data provided by retired DWR water quality Chief Boles during the 2017 DEIR/DEIS era illustrated existing quality constituents are elevated during high flow and highlighted data gaps that must be filled prior to building and operating a reservoir in this dubious location. The failure of the proponents to fill this data gap while selling the benefits to naïve investors is reprehensible. Collecting this data after the project is completed to determine the severity of the problems might be helpful but would result in a bad outcome for local irrigators who might be stuck with water too contaminated to put back in the river. CEQA requires impact analysis prior to approval and construction of a project.	relative change in metal concentrations between the No Project Alternative and the Project. Although water quality measurements did not target high flows, multiple measurements were taken during higher flows. Master Response 4, Water Quality, discusses available data and how the available data were used to develop exponential equations to estimate metal concentrations as functions of tributary input and flow, allowing estimation of concentrations if conditions become more extreme than what was present during measurements. Master Response 4, Water Quality, reviews the number of data points and the methodology described and used in Chapter 6, Surface Water Quality, for pooling data to maximize the number of data points at higher flows. Master Response 4 also includes a review of the equations to estimate metal concentrations at flows or percentages of tributary inflows higher than what occurred at the time of the measurements. Also, please see Appendix 6E, Water Quality Data, for a tabulation of the number of data points from each measurement site and graphical representation of the relationship between measured metal concentrations and flow in the Sacramento River at Keswick. As described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, the Authority will be conducting water quality measurements for a variety of constituents.
72-87	The post-building data collection protocol is deficient. The Reservoir Management Plan (Page 2D-37) states that "[p]ast studies of metal concentrations in the Sacramento River have not focused on high flows that will be the source water for Sites Reservoir. Metal concentrations at the diversion(s) will be measured within 24 hours of the start of diversions at RBPP and every 2 weeks during continuous diversions." [Footnote 81: Emphasis added.] "After 2 years of measuring metal concentrations in the diversions, the frequency of measurements will decrease to monthly." The	The monitoring of Sacramento River metal concentrations described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, will provide measurements that focus on water quality at the most relevant time for water quality in Sites Reservoir, namely when water would be diverted to storage. This monitoring schedule will naturally result in data collection over a range of conditions that would occur at the time of diversions to storage.

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	measuring of metal loads might be inconvenient during high flow precipitation events, but this is exactly the time to target the data collection. A set schedule of monitoring would inevitably miss the close relationship between flow and metals concentrations. Event based monitoring may require data collection biweekly, weekly, or daily as flow conditions vary.	The final RMP will be prepared after meetings and consultation with regulatory agencies and other stakeholders, and the RMP may continue to be revised throughout the operation of the reservoir, potentially resulting in modification of the protocol for monitoring metal concentrations.
72-88	The data gaps must be filled and then measured against the appropriate standards. There are water quality thresholds applicable to this project, including California and Federal Drinking Water Standards (MCLs), California Public Health Goals (PHGs), California State Notification and Response Levels for Drinking Water, Suggested No-Adverse-Response Levels (SNARLs), Cancer Risk Estimates, Health-based criteria from USEPA Integrated Risk Information System (IRIS), Proposition 65 Safe Harbor Levels, California Toxics Rule Criteria to Protect Human Health and Aquatic Life, USEPA Recommended Criteria to Protect Human Health and Aquatic Life, Agricultural Use Protective Limits, and Taste and Odor Based Criteria. These are the thresholds to which the proposed project should be analyzed, but the RDEIR/SDEIS fails this test.	Please refer to Master Response 4, Water Quality, for a discussion regarding regulatory standards appropriate for use in the impact evaluation of metals and metalloids other than mercury.
72-89	4. Harmful Algae Blooms Water quality conditions would be conducive to the growth of HABs forming cyanobacteria as well as algae, particularly in the summer when water temperatures in the reservoir would be warmer and nutrients would be more concentrated due to reduced storage volume. Concentrations would likely be higher toward the water's surface where cyanobacteria and algae would be concentrated. Water would be released from lower in the reservoir if water quality monitoring indicated that organic carbon concentrations were high (Section 2D.3).	The commenter is citing to text that can be found in Chapter 6, Surface Water Quality, but has combined two separate discussions. The last two sentences in the comment are from Impact WQ-2 from the organic carbon discussion for Colusa Basin Drain and Sacramento River, whereas the preceding sentences are from the nutrient discussion under this same impact (Sites Reservoir section). The last sentence, as it appears in Chapter 6, has been deleted in the Final EIR/EIS; Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, does not include an action to change the depth at which water is released from Sites Reservoir based on organic carbon concentrations, although dissolved organic carbon concentrations will be monitored as part of the metals evaluation for Sites Reservoir (see Appendix 2D, Section 2D.3.3, Metals). In addition,

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		clarifying text has been added to the organic carbon discussion for Colusa Basin Drain under Impact WQ-2 in Chapter 6 of the Final EIR/EIS. These revisions do not change conclusions or impact determinations identified in the analysis.
72-90	5. Salt Saline water has been observed to seep from underground salt springs in the vicinity of the Salt Lake fault along the slopes above the valley and along the valley floor within the proposed inundation area of Sites Reservoir. "These areas are generally located in the Funks Creek watershed. The water from the underground springs accumulates along the trough of the valley and forms Salt Lake (USGS, 1915)". The proponents failed to accurately survey the depth or hydrodynamics of Salt Lake and fail to model how much more active the saline springs would be if the reservoir was inundated. The assumption that the salty water would "[g]enerally accumulate at the bottom of the reservoir" does not assure a more general mixing into the whole reservoir during filling and emptying. The recognition that "Saline water will increase the salinity of the water in storage. Salinity in Sites Reservoir may also increase due evapoconcentration, which may increase EC by 13%-16% on average, with maximum increases of 41%-48%," is an important consideration. The optimistic but short-sighted analysis of how much salinity would be introduced into the Sacramento River Basin if Sites Reservoir is filled is insufficient and must be reconsidered.	Due to its small size, surveys of the depth and hydrodynamics of Salt Pond surface water are not necessary. As described in the Chapter 6, Surface Water Quality, Section 6.2, Environmental Setting, the size of Salt Pond and adjacent seasonal brackish wetlands varies with time. The wetted area appears to vary from 0 to 30 acres. As described in Chapter 6, in the Sites Reservoir, Salt Pond, and Sacramento River subsection, the Impact WQ-2 analysis considers both full mixing of the Salt Pond water with the rest of Sites Reservoir and accumulation of the Salt Pond water at the bottom of the reservoir. The analysis also considers a range of possible reservoir concentrations associated with Salt Pond. The effect on salinity in the reservoir assuming full blending would be small even when the highest measured electrical conductivity value is used. Prior to reservoir operation, measurements of spring flow and water quality (as specified in the draft RMP in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies) will help narrow the range of effects that might be associated with the salt springs. As described in the Salinity section of Impact WQ-2 in Chapter 6, the weight of Sites Reservoir water over the salt springs would likely reduce the flow of saline mineral water from these springs.

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		As described in Chapter 6, Section 6.3, Methods of Analysis, and implemented in the analysis for Impact WQ-2, evapoconcentration is incorporated into the quantitative assessments for salinity.
72-91	Contradictory mitigation example: Fish contaminated with bioaccumulated mercury would have disastrous impacts on humans, raptors and the fish themselves. Releasing water from high in the reservoir as a mitigation to avoid high mercury concentrations deep in the water is contradicted by the mitigation suggested for avoiding contaminating reservoir releases with HABs that are likely to form in that upper water levels.	Mitigation for potential methylmercury impacts is described under Mitigation Measure WQ-1.1 and is focused on reducing the methylation of mercury in Sites Reservoir. Implementation of this mitigation measure would minimize potential methylmercury impacts on fish, raptors, and humans. The implementation of Mitigation Measure WQ-1.1 is expected to minimize or reduce bioaccumulation of methylmercury by requiring steps be taken to reduce, monitor, and manage mercury in the reservoir. Most of the actions identified under Mitigation Measure WQ-1.1 are recommended actions by the State Water Resources Control Board and Regional Water Quality Control Boards for new reservoirs (State Water Resources Control Board 2017a). However, the degree of effectiveness of any of the identified actions to reduce mercury methylation and bioaccumulation in Sites Reservoir specifically is not known at this time. Therefore, this impact on water quality would be significant and unavoidable. Please refer to Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower to control releases of water quality constituents, which would control releases of water quality constituents, including cyanotoxins and methylmercury, by selective use of the multiple tiers in the tower. Because presence of HABs/cyanotoxins would be the only reason for releasing water from deeper in the reservoir, potential conflicts with regard to I/O tower tier selection to avoid releasing multiple water quality constituents of concern would not occur unless HABs/cyanotoxins were present at the I/O tower. If HABs/cyanotoxins were present at the I/O tower at the same time relatively high metal concentrations (including

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		methylmercury) or water too cold for agriculture was deep in the reservoir, then there might be no I/O tower tier available for discharging relatively high-quality water. However, as described in Master Response 4, this scenario would be rare, and additional measures would protect against the consequences of such a scenario. Please refer to Chapter 27, Public Health and Environmental Hazards, regarding the analysis for potential impacts on public health related to methylmercury bioaccumulation in fish. In addition, Chapter 11, Aquatic Biological Resources, discusses the effects on special-status fish species of the potential increase in mercury in the Delta due to Project operation. Text regarding effects of methylmercury bioaccumulation in fish on bald eagle was added to Chapter 10, Wildlife Resources, of the Final EIR/EIS. The text additions do not change the impact determinations or conclusions in that chapter.
72-92	When high concentrations of metals approaching, or exceeding water quality criteria exist in proposed project source waters they can't be regulated by governmental agencies as being natural occurrences. But once impounded, enriched by evaporation, added to by erosion of uninundated bare-soil reservoir edges, and seasoned by salt springs, they are subject to water quality regulation. All releases of water from the proposed reservoir will be subject to review by water quality regulatory agencies to ensure that such releases do not adversely affect downstream benefits due to the heavy metals loads in the releases. Proponents claim on page 6-47 "The Antidegradation Policy may allow for some degradation of water quality (i.e., increases in constituent concentration) if beneficial use increases. Evapoconcentration in reservoirs, for example, is generally accepted due the benefits of water storage." But if the already compromised source water quality is reduced beyond quality criteria or standards by the added impediments recognized by proponents, it is likely to reduce or eliminate	The Authority and Reclamation acknowledge and agree the operation of Sites Reservoir, including consistency with the antidegradation policy, will be reviewed by regulatory agencies (see Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements, regarding permits, approvals, and consultation processes that are potentially applicable to the Project and agencies that are anticipated to rely on the EIR/EIS for decision-making and implementation). Please see Chapter 6, Surface Water Quality, Impacts WQ-1 and WQ-2 and Master Response 4, Water Quality, regarding effects on water quality relative to water quality standards. In addition, please see Chapter 6, Section 6.3.2.12, Antidegradation Policy, which discusses how the antidegradation policy is considered and applied by regulatory agencies. The water quality analysis concludes that, with the exception of methylmercury, operation of the Project would not cause

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	the balance of benefits to supply and to the environment. The Antidegradation policy must be considered as a distinct possibility. The impounded metal-laden water could presumably still be used in lieu of Shasta releases on agricultural soils, but the long-term impacts to farms and refuges must be considered.	significant and unavoidable increases in downstream metal concentrations. As a result, with the exception of methylmercury, the Project would not conflict with downstream beneficial uses.
72-93	The presentation of data and analysis minimizes the severity of the heavy metals, salt, organic carbon and HAB problems in the source water and the impoundment footprint. The contradicting operational strategies meant to mitigate environmental damage will fail to protect the environment and may leave the impounded water vulnerable to the state antidegradation policy.	The water quality analysis contained in Chapter 6, Surface Water Quality, and associated appendices presents data and modeling results in multiple ways depending on the impact mechanisms being evaluated without attempting to minimize the severity of effect. Chapter 6, Section 6.3, Methods of Analysis, and discussion for Impacts WQ-1 and WQ-2 explain the many pieces of information used in the analysis and the analysis approach and locations evaluated. In addition, please see Master Response 4, Water Quality, for more discussion regarding the methodologies used to assess metals; for example, the use of measured data and estimation of metal concentrations, as well as the time-series estimates of inflow concentration, evapoconcentration, and dilution using CALSIM results. Please refer to Master Response 4 for a discussion regarding the metals analysis and use of the I/O tower to control releases of water quality constituents. In addition, please see the response to comment 72-92 regarding the antidegradation policy.
72-94	E. Impacts to Terrestrial Biological Resources. The RDEIR/SDEIS fails to adequately assess impacts to terrestrial biological resources. The Project would inundate and destroy terrestrial and aquatic habitat covering approximately 13,200 acres in Antelope Valley, devastating the habitat of numerous terrestrial and semiterrestrial Species. [Footnote 82: RDEIR/SDEIS at ES-11.] In addition to the habitat lost to inundation, the construction of roads and new water transfer infrastructure will sever ecosystems and inhibit species movement and proliferation. Despite the	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses how baseline conditions for vegetation and wildlife resources were determined, the use of habitat models in lieu of species surveys, the completion of species surveys prior to construction, and the adequacy of mitigation measures related to vegetation, wetlands, and wildlife.

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	immense magnitude of the Project's impacts on biological resources, the RDEIR/SDEIS fails to conform to legal standards for environmental review. The RDEIR/SDEIS's treatment of terrestrial biological resources is legally inadequate for two overarching reasons. First, the RDEIR/SDEIS fails to accurately describe the baseline condition of the project site and the presence of special status species, undermining the accuracy of the impact analyses. Second, the RDEIR/SDEIS does not adequately mitigate the Project's significant impacts, either by impermissibly deferring the formulation of specific mitigation measures, or by relying on insufficient and/or ineffective mitigation. For the reasons laid out below, the RDEIR/SDEIS's analysis of terrestrial biological resources impacts is inadequate, and the Authority must remedy the failures before moving forward in the environmental review process.	
72-95	The RDEIR/SDEIS Fails to Adequately Describe Baseline Environmental Conditions and Assess the Proposed Project's Potential Impacts to Special-Status Species, Sensitive Habitats and Natural Communities. The proposed Project entails significant alterations to the sensitive habitats and natural communities that now exist within the Project site, including riparian areas and wetlands. These habitats are utilized by a number of special-status plant and wildlife species. It is critical that the RDEIR/SDEIS, before it can fully analyze the impacts of the Project, requires exhaustive surveys of the Project area to ascertain the presence of wildlife. Under both NEPA and CEQA, the Authority must evaluate the potential environmental impacts of the project as compared to the existing environmental conditions (the "environmental baseline"), so that the Project's environmental impacts can be meaningfully analyzed and compared to alternatives. [Footnote 83: 40 C.F.R. § 1502.15; CEQA Guidelines § 15125(a) [existing physical conditions "normally constitute the baseline physical	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses how the 2020 baseline conditions for vegetation, wetland, and wildlife resources were developed; special-status species surveys; habitat models; and the adequacy of mitigation related to vegetation, wetlands, and wildlife. Master Response 6 also describes the adequacy of using existing information and previously conducted surveys to describe historical conditions. Please also see Appendix 9B, Vegetation and Wetland Methods and Information, for the methods of land cover type mapping, which was the basis for the habitat models.

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	conditions by which a Lead Agency determines whether an impact is signifi[ca]nt"]; see County of Amador v. El Dorado County Water Agency, 76 Cal.App.4th 931, 952 (1999); Neig[hb]ors for Smart Rail v. LA County Metropolitan Transit Authority, 57 Cal. 4th 310, 315 (2013).] Furthermore, a project's impacts should be compared to actual, existing pre-project conditions rather than to hypothetical conditions when determining the significance of a project's impacts. [Footnote 84: Communities for a Bet[te]r Environment v. South Coast Air Quality Management Dist. (2010) 48 Cal.4th 310, 322.] In providing the decision-maker with knowledge of the regional setting, "special emphasis should be placed on environmental resources that are rare or unique to the region and would be affected by the project." [Footnote 85: CEQA Guidelines § 15125©.] The RDEIR/SDEIS provides a grossly deficient picture of existing conditions because it failed to include species-specific site surveys that follow established protocols and agency guidance, and instead based its analysis on an incomplete review of occurrence data combined with improperly used habitat modeling.	
72-96	78. A. Minimal wildlife and habitat surveys conducted in unidentified areas of the Project are grossly insufficient and information is not adequately disclosed to the public. According to the RDEIR/SDEIS, "[l]imited access was obtained for geotechnical boring investigations for the Project, and focused bird surveys prior to geotechnical work were conducted in these specific locations in 2020 and 2021", [Footnote 86: RDEIR/SDEIS at 10-7.] but only minimal information from January 2021 surveys is reported in Appendix 10A. The exact dates, locations, and methods used when the surveys were conducted are not provided, and the "focused bird surveys" were not conducted following the appropriate guidelines and protocols for specific species. The California	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the baseline conditions for wildlife, special-status species surveys, and the use of habitat models. The surveys that were conducted for geotechnical boring were preconstruction surveys to ensure that no special-status birds were near the work area and could be disturbed by the geotechnical work. Protocol-level and focused surveys for special-status wildlife (including special-status birds) are included in mitigation measures and will be conducted prior to construction and once property access is obtained.

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	Department of Fish and Wildlife (CDFW) has specific survey protocols and guidelines for special-status birds [Footnote 87: CDFW Survey and Monitoring Protocols and Guidelines available at https://wildlife.ca.gov/Conservation/Survey-Protocols] including Swainson's hawks, bald eagles, golden eagles, and burrowing owls. For example, a complete burrowing owl survey consists of four site visits on four separate days from two hours before sunset to one hour after or from one hour before sunrise to two hours after (California Burrowing Owl Consortium, 1993), and bald eagle breeding surveys should include three site visits, one each in early March, late April or early May, and mid-June (CDFW, 2010). The RDEIR/SDEIS fails to provide when and where the 2020 bird surveys were conducted and the results of those surveys. In addition, they dismiss data from habitat and wildlife surveys that were conducted within the Project study area from 1998 to 2004 and in 2010 to 2011, stating they were not considered "[b]ecause these surveys are 10 to 23 years old." [Footnote 88: RDEIR/SDEIS at 10-7.] That is not a legitimate reason to dismiss such data. In environmental analyses it is critical to consider the best available science, which, in this case, should include on-the-ground focused surveys conducted in the Project study area. Such information provides insight into the habitats and species that occur, historically occurred, and/or have the potential in the Project area and should be considered and provided in the RDEIR/SDEIS. Failing to consider and disclose these data and instead opt to use only other sources of data and habitat modeling is a failure to use the best available science and renders the analysis inadequate. There is no substantive reason provided to exclude these data, particularly since access to the Project study area is limited and other data sources used, like CNDDB and eBird, provide historical occurrence data. It almost seems like the RDEIR/SDEIS is trying to hide information from the public by not providing survey data and results from on-the-ground surveys conducted in 1998-2004, 2010-2011, and 2020. Without using the most pertinent data to the	

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	area, the RDEIR/SDEIS fails to adequately assess and disclose baseline environmental conditions.	
72-97	The RDEIR/SDEIS fails to adequately disclose and assess the occurrence or potential occurrence of special-status animals and plants. No maps are provided to inform the public of where occurrences have been documented, which is industry standard in EIRs. In addition, the RDEIR/SDEIS fails to consider important sources of occurrence data. Although the RDEIR/SDEIS uses occurrence data from various locations, including CNDDB, an unofficial USFWS list, the California Essential Habitat Connectivity project by CDFW, and eBird, they fail to include other important, publicly available data from robust sources like iNaturalist, GBIF/VertNet, and Herpmapper. [Footnote 89: RDEIR/SDEIS at 10-7.] By failing to consider these publicly available occurrence data and the data from the 1998 to 2004 and 2010 to 2011 on-the-ground surveys, the RDEIR fails to adequately assess and disclose the baseline environmental conditions of the Project area, which can lead to erroneous assumptions. For example, the RDEIR/SDEIS states that the foothill yellow-legged frog (FYLF), a species of special concern, has low potential to occur in the Project area, in part, because the "nearest known occurrence is 6 miles from the study area" as documented in CNDDB (RDEIR/SDEIS Appendix 10A at 10A-23), and therefore FYLF is assumed to not be present and is excluded from the impact analysis. However, within two to three miles of the Project area potentially near a branch of the Antelope Creek, iNaturalist shows a "Research Grade" occurrence with photo documentation and identification by an iNaturalist Curator who currently works at CDFW as a CNDDB zoology data manager. [Footnote 90: iNaturalist observation: https://www.inaturalist.org/observations/93302474] Therefore, potential impacts to FYLF should be included in the assessment. This is another example of how the RDEIR/SDEIS fails to adequately assess and disclose the	Chapter 9, Vegetation and Wetland Resources, Section 9.3.4, Special-Status Plant Species; Appendix 9A, Special-Status Plant Species; Chapter 10, Wildlife Resources, Section 10.2.3, Special-Status Wildlife Species; and Appendix 10A, Wildlife Species Lists, Table 10A-2, and Section 10A.3, Non-Listed Wildlife Species Accounts, contain known occurrence information for special-status plants and wildlife in the Project study area and vicinity (within 5 miles) and assess the potential for these species to be present in the study area. Data from the CNDDB are obtained only through a paid subscription to CDFW and are not considered data to be shared publicly. Special-status plant and animal occurrences obtained from the CNDDB are not included in the RDEIR/SDEIS to protect the occurrences from unlawful disturbance or removal. Reviewing the data sources identified in Chapters 9 and 10, preparing habitat models, and coordinating with wildlife agencies were sufficient for assessing the potential for special-status plants and animals to occur in the study area. Locations of rare and threatened taxa are obscured in iNaturalist, so the locations of such species are not accurate. For the foothill yellow-legged frog example given by the commenter, the accuracy of the location is 17.5 miles and, therefore, may or may not be within 2 to 3 miles of the Project area. Herpmapper only provides data at the county level and GBIF provides locations at a coarse scale as well. While these resources may provide some useful information, they must be used with caution and scrutinized, which can be time consuming when more reliable and efficient data sources are available. Regarding foothill yellow-legged frog, in addition to the CNDDB information referenced by the commenter, Appendix 10A, Wildlife Species Lists, Table 10A-2 also states that "The western

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	baseline conditions of the Project area. Other such critical data for sensitive species could have been erroneously excluded from the analysis.	portion of the study area is just outside the species' known range. All known occurrences in Glenn and Colusa Counties are at or above 750 feet elevation and the study area is at or below 500 feet elevation. Historical locations along the Sacramento River are extirpated." Additionally, during coordination with USFWS and CDFW, neither agency requested that foothill yellow-legged frog be addressed. Please also refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses how the 2020 baseline conditions for plant and wildlife resources were determined and the use of special-status species data.
72-98	B. The RDEIR/SDEIS also fails to establish the environmental baseline by relying on deficient plant surveys. The RDEIR/SDEIS fails to describe the environmental baseline because the plant surveys only covered a portion of the project site, and the surveys that were included are so outdated that their value in setting the environmental baseline is negligible. [Footnote 91: RDEIR/SDEIS Ch. 9, pg. 10.] First, the plant surveys conducted between 1998 and 2003 are too distant in time to be relied on to establish an accurate baseline assessment. Ecological settings are prone to change, and plant surveys conducted nearly 20 years ago are not representative of the environmental conditions on the ground today. New populations of special-status plants may have become established in the project area since the last surveys were conducted. Per CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities ("CDFW Protocols"), [Footnote 92: Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities, https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline.] surveys for rare species must be current, defined as within 5 years in many habitats. [Footnote 93: CDFW Protocols, p. 6 n. 14.] For a project	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, regarding the adequacy of the baseline conditions for vegetation and wetland resources. As mentioned in Master Response 6, the previous surveys were conducted in accordance with CDFW protocols at the time.

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	undergoing environmental review in 2021, surveys conducted between 1998 and 2003 fall far below acceptable standards of recent surveys.	
72-99	Second, the surveys are deficient because the exact date and location of the surveys were not disclosed, so it's unclear whether they were conducted over multiple years, as is required to adequately document the biodiversity on the project site. The RDEIR gives a range of dates for when the surveys were performed (1998-2003), but this does not disclose to the public if the same areas were surveyed over this period, or whether the five-year span includes one-off surveys conducted in separate locations. It is also unclear whether the surveys were seasonally appropriate for identifying plants with the potential to occur on the project site. This lack of clarity makes it impossible for decision-makers and the public to understand and assess the sufficiency of the surveys.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, regarding the adequacy of the baseline conditions for vegetation and wetland resources. As mentioned in Master Response 6, the prior surveys were conducted during the appropriate times (i.e., blooming periods) for special-status plant species in accordance with CDFW protocols at the time. Section 9B.1.2 of Appendix 9B provides details of the areas covered under the previous surveys, and Section 9.3.1 of Chapter 9 provides that previous surveys covered approximately 75% of the study area.
72-100	Considering the abundance of grasslands in the project area, multiple annual surveys are necessary to establish the environmental baseline. Grasslands in California's Central Valley and adjacent foothills are home to many imperiled species, and multiple years of surveys are necessary to document biodiversity due to the nature of interannual variation in species composition in grasslands. This is confirmed in the CDFW Protocols, which state that grassland habitats that "have annual and short-lived perennial plants as major floristic components, may require multiple annual surveys to fully capture baseline conditions." [Footnote 94: CDFW Protocols, p. 6 n. 14.] Moreover, Central Valley grasslands and adjacent foothills are among the most impacted habitats in the state, and the Central Valley has already has lost a significant portion of its grasslands to development. As a result, this habitat is home to many imperiled species and any loss or degradation of remaining grasslands is potentially significant. Failing to perform recent surveys of the grasslands in the project area further imperils this already sensitive habitat and the important species that depend on it.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of using existing information and previously conducted surveys to describe baseline conditions. Special-status plant species preconstruction surveys are required in Mitigation Measure VEG-1.1, which will include surveys of annual grassland habitat. Mitigation Measure VEG-1.2 requires avoidance, where feasible, of occupied special-status plant habitat, which would include species in annual grassland habitats, and compensation for unavoidable impacts on special-status plants. Because annual grasslands as a community type are not considered a sensitive natural community by CDFW, Chapter 9, Vegetation and Wetland Resources, does not address loss of annual grasslands that do not support special-status plants. In Chapter 10, Wildlife Resources, Impact WILD-1 discusses loss of grassland habitat for multiple special-status wildlife species and includes compensatory mitigation measures for loss of grassland habitat.

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72-101	Finally, in addition to being substantively deficient, the surveys the RDEIR relies on only cover a portion of the project site. For the portions of the project area that were not surveyed at all, the lead agency has failed to establish an environmental baseline with respect to special-status plants altogether. For all of the reasons above, the RDEIR fails to establish an environmental baseline, and makes it impossible for the lead agency to properly analyze and mitigate the project's impacts to plants and vegetation.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of using existing information and previously conducted surveys to describe baseline conditions.
72-102	C. The habitat models are insufficient; reliance on such models with unsubstantiated assumptions and no on-the-ground information is inadequate. Although habitat models can be a useful tool to help determine where species may occur (historically, currently, or potentially), adequate assessments for project-level analyses require additional on-the-ground data to inform and/or ground-truth the model. The RDEIR/SDEIS heavily relies on habitat models and makes unsubstantiated assumptions for the models. It states that "[b]ecause the models are limited in part by the accuracy of aerial imagery interpretation and the inability to field verify the land cover mapping, they generally overestimate the amount of potential habitat in the study area for special-status wildlife species" [Footnote 95: RDEIR/SDEIS, Appendix 10B at 10B-1.]; however, this is conjecture and not based on science. Conversely, such models have the potential to underestimate the amount of potential habitat for special-status species, and model assumptions are important in determining the most accurate model.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses special-status species surveys and the use of habitat models.
72-103	For example, the habitat model for vernal pool branchiopods is based on "seasonal wetland and ditch land cover types when the ditch is adjacent to or surrounded by annual grassland" as identified using aerial imagery. [Footnote 96: RDEIR/SDEIS Appendix 10B at 10B-2.] But, as acknowledged by the RDEIR/SDEIS, the resolution and scale of the aerial imagery makes it	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the use of habitat models. As described in Appendix 9B, Vegetation and Wetland Methods and Information, ICF botanists/wetland specialists experienced in interpreting aerial imagery signatures of land cover and vegetation communities

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	difficult to accurately identify all potential vernal pools and ditches. In addition, if the imagery was taken during dry months and/or during extended drought, locations of vernal pools would be even more difficult to decipher. Yet the RDEIR/SDEIS does not provide the context of the imagery used for the model, and it states the model still likely overestimates suitable habitat "because it is assumed that all seasonal wetlands and ditches adjacent to or surrounded by annual grassland provide conditions necessary for habitat to be suitable for vernal pool branchiopods, which is unlikely to be the case." [Footnote 97: RDEIR/SDEIS Appendix 10B at 10B-3.] This is unfounded and not supported by any substantial evidence.	conducted an interpretation of high-resolution aerial imagery over a range of dates (approximately 1998–2020) to allow for comparisons of conditions over time. By conducting the review in this manner, they avoided exclusively using imagery from dry months or periods of extended drought. Per Mitigation Measure WILD-1.1, qualified biologists will be conduct surveys to assess suitable habitat for vernal pool branchiopods once property access is granted and prior to the start of construction. The statement that all potential habitat for vernal pool branchiopods is unlikely to be occupied is based on scientific literature documenting habitat requirements and field observations by professional biologists that habitat conditions which support these species (the depth and length of ponding, temperature, extent of vegetation, etc.) are not present in every potential habitat.
72-104	Another example in which the models may underestimate suitable habitat is the western pond turtle (WPT) habitat model. It assumes upland habitat is within 1640 feet of modeled aquatic habitat (based on aerial imagery that they cannot field verify), but nests have been found up to 1919 feet from aquatic habitats and individuals have been documented to move regularly between aquatic habitats with long-distance movements of up to 2018 feet (615 m) (Sloan, 2012). Similarly, the western spadefoot toad (WESP) model assumes potentially suitable upland habitat "consists of annual grassland, blue oak woodland, chamise chaparral, foothill pine, mixed chaparral, and oak savanna within 1,200 feet of modeled aquatic habitat" [Footnote 98: RDEIR/SDEIS Appendix 10B at 10B-13.] even though a recent study found that the occurrence of WESP was strongly correlated with grassland habitat within 6562 feet (2000 m) of vernal pools (Rose et al., 2020). California red-legged frogs (CRLF) have been found to migrate about 600 feet between breeding ponds and non-breeding upland habitat and streams, with some individuals roaming over 4,500 feet from the water (Fellers & Kleeman, 2007), yet the RDEIR/SDEIS's model only includes potential upland habitat	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the baseline conditions for wildlife and the use of habitat models. Several publications cite various distances of western pond turtle nests from aquatic habitats. As discussed for western pond turtle in Appendix 10A, Wildlife Species Lists, Special-Status Wildlife Table, and Non-Listed Wildlife Species Accounts, "Females usually select nest sites within 328 feet of aquatic habitat, although nests have been found 1,640 feet from a water body (Thomson et al. 2016:299). Lovich and Meyer (2002:540) reported nesting sites up to 1,919 feet from aquatic habitats, and Holland (1994:2-10) reported nesting sites up to 1,312 feet away from aquatic habitats." While the Authority and Reclamation acknowledge that nest sites have been reported up to 1,919 feet from aquatic sites (and reference this study in the RDEIR/SDEIS), 1,640 feet was used in the model because it encompasses the area where most nests have been observed and, as

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	within 300 feet of aquatic habitat. The best available science, including data regarding the longest dispersers, should be considered when assessing potential suitable habitat, particularly when dispersal and metapopulation dynamics are important, as is the case for species like WPT, WESP, CRLF, and others. These are just a few examples of how the habitat models are inadequate and potentially misleading. The RDEIR/SDEIS inadequately assesses the baseline environmental conditions and impacts special-status species and sensitive habitats. Note that this is not a comprehensive list of inadequacies that need to be addressed for the RDEIR/SDEIS to comply with CEQA.	such, provides an accurate assessment of upland habitat for western pond turtle. Regarding western spadefoot, Rose et al. (2022) found that western spadefoot presence was correlated with grassland or shrub/scrub and the percent of sand in the soil within a 1,000-meter (3,280 feet) buffer in a western spadefoot distribution model for southern California. Rose et al. (2022) evaluates the performance of a distribution model and does not provide data on the distances that western spadefoot has been observed from aquatic habitats. The 1,200-foot distance from aquatic habitat that was used in the western spadefoot model to assess habitats impacts in the RDEIR/SDEIS is based on Semlitsch and Bodie (2003:1219, 1221), who reviewed research on the use of terrestrial habitats for 19 frog species associated with wetlands Semlitsch and Bodie (2003) found the mean maximum terrestrial habitat use outward from the edge of aquatic habitat was 1,207 feet. Given that this is the best available information for terrestrial habitat use based on research of 19 frog species, and that Rose et al. (2022) does not provide additional terrestrial habitat use data, the 1,200-foot distance for upland habitat that was used in the model is appropriate for assessing upland effects on western spadefoot. The 300-foot distance from aquatic habitat that defined the edge of upland habitat in the California red-legged frog habitat model is based on information from U.S. Fish and Wildlife Service and is specific to upland habitat use, not dispersal or migration. As stated in Appendix 10B, Wildlife Habitat Models and Methods, "U.S. Fish and Wildlife Service, in its critical habitat designation for California red-legged frog, defined the upland habitat primary constituent element as 200 feet from aquatic habitat, which provides foraging and

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		dispersal habitat for California red-legged frog (71 FR 19249). Additionally, Bulger et al. (2003:87) found 90% of the non-migrating California red-legged frogs were within 200 feet of aquatic habitat throughout the year. However, a more conservative 300-foot buffer from aquatic habitat is used to define upland habitat in the [RDEIR/SDEIS] model to include the limited number of California red-legged frogs that may occur more than 200 feet from aquatic habitat (Bulger et al. 2003:87–88)." Based on this information, using a 300-foot distance for upland habitat in the habitat model provides an accurate assessment of upland habitat in the study area.
72-105	D. Lack of access to private property in the Project Area is not an excuse for failing to perform surveys. The RDEIR/SDEIS blames property access restrictions in most of the project area for the lack of field studies. [Footnote 99: RDEIR/SDEIS Ch. 9, p. 10.] The fact that the Sites Project Authority has elected to develop a site that it does not yet own and cannot access for technical studies does not excuse the lead agency from its obligations under CEQA. As discussed above, CEQA requires the agency to establish the environmental baseline and analyze the project's impacts against that baseline. Sufficiently recent field studies are essential for both of those tasks, and by failing to perform adequate field studies the lead agency has failed to comply with CEQA.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, regarding lack of access to conduct field surveys, the adequacy of habitat modeling, the requirements under the RDEIR/SDEIS to conduct species-specific, protocol-level preconstruction surveys to verify species modeling results, and the adequacy of the baseline conditions for vegetation and wildlife resources in informing impact analyses.
72-106	The Sites Project Authority could have taken steps to conduct botanical field studies in the privately-owned parcels, but there is no indication that it has made any attempt to do so. In Proper[ty] Reserve, Inc. v. Superior Court (Department of Water Resources), 1 Cal.5th 151, 165-66 (Cal. 2016), the court documented the Department of Water Resource's efforts to investigate the feasibility of constructing the Delta twin tunnels project: As part of the preliminary steps in going forward with the project, the Department sought to conduct environmental and geological studies and	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, regarding lack of access to conduct field surveys, the adequacy of habitat modeling, the requirements under the RDEIR/SDEIS to conduct species-specific, protocol-level preconstruction surveys to verify species modeling results, and the adequacy of the CEQA baseline conditions for vegetation and wildlife resources in informing impact analyses. Property Reserve, Inc. v. Superior Court, 1 Cal. 5th 151 (2016) concluded that petitioning for a court order pursuant to the precondemnation entry provisions in the

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	testing on more than 150 privately owned parcels of land that the state, in the future, might seek to acquire for the project through negotiation or eminent domain. In pursuing the proposed studies and testing, the Department proceeded through the specific statutory procedure established by the California Eminent Domain Law (Code Civ. Proc., pt. 3, tit. 7) relating to precondemnation entry and testing. (Code Civ. Proc., §§ 1245.010-1245.060.) The Department filed petitions in superior court relating to the privately owned properties, seeking a court order granting the Department authority to enter the properties and undertake various environmental and geological testing activities. The Department maintained that these activities were necessary to determine the suitability of each property for the project and to comply with the numerous state and federal environmental laws governing such a project. After a four-day hearing, the trial court issued a detailed and lengthy order authorizing the Department to enter all of the private properties and conduct various environmental studies and testing under specified limitations." Similarly here, the Sites Project Authority has the ability to seek entry of the private lands despite not currently having access to them. This would allow the agency to complete field studies and meet its obligations under CEQA. The RDEIR/SDEIS should not be approved until this possibility is exhausted.	California Eminent Domain Law (Code Civ. Proc., Sections 1245.010-1245.060) was a valid means of conducting environmental studies on privately owned lands. It does not stand for the proposition that access must be obtained with a court order, only that a court may authorize such access.
72-107	The RDEIR/SDEIS Fails to Adequately Mitigate Potential Impacts to Special-Status Species and Sensitive Habitats and Natural Communities Due to The Proposed Project. The RDEIR/SDEIS fails to meet CEQA's cornerstone requirement to include feasible mitigation measures that reduce potentially significant environmental impacts to a less than significant level. [Footnote 100: Cal. Pub. Res. Code § 21002; § 21081.6(b); CEQA Guidelines § 15126.4(a); see also Sierra Club v. Gilroy City Council (1990) 222 Cal.App.3d 30, 41.] Mitigation must be effective, and the effectiveness of a proposed measure must be	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the 2020 baseline conditions for plant and wildlife resources, the requirements for surveys prior to construction, and the adequacy of mitigation related to vegetation, wetlands, and wildlife resources.

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	demonstrated by substantial evidence. [Footnote 101: Sierra Club v. County of San Diego (2014) 231 Cal.App.4th 1152; POET, LLC v. State Air Resources Bd. (2013) 218 Cal.App.4th 681.] The RDEIR/SDEIS fails to meet these requirements. As a threshold matter, the failure to accurately present the baseline environmental conditions and to quantify the scope of species-specific impacts precludes the formulation of CEQA-compliant mitigation. [Footnote 102: See City of Long Beach v. City of Los Angeles (2018)) 19 Cal.App.5th 465, 487 (the court found the EIR's failure to accurately quantify the impact (frequency and duration of particulate matter pollution) precluded the public and decision makers from fairly considering alternatives or mitigation measures).] It's hard to fix a problem when the extent of it is unknown. Furthermore, the proposed mitigation suffers from multiple defects, namely by deferring the formulation of the actual steps to mitigate the acknowledged significant impacts, and for those	
72-108	A. The RDEIR/SDEIS's mitigation is inadequate and improperly deferred. The goal of informed decision-making necessitates that the public be provided information about the extent of a project's impacts, and how those impacts will be mitigated, before a project is approved. To that end, it is generally impermissible to defer the formulation of a mitigation measure to some point after a project is approved. [Footnote 103: CEQA Guidelines § 15126.4(a)(1)(B).] Deferring the selection of mitigation measures is allowed in cases where specific performance standards are identified, and the agency commits to achieving those standards in an enforceable manner. [Footnote 104: See POET, LLC v. California Air Res. Bd. (2013) 217 Cal.App.4th 1214, 737-38. See also Sundstrom v. County of Mendocino, 202 Cal.App.3d 296, 307 (Cal. Ct. App. 1988). Deferring environmental assessment to a future date is contrary to the "policy of CEQA which requires environmental review at the earliest feasible stage in the planning process." Additionally, "[e]nvironmental problems should be considered at a point in the planning	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of the mitigation measures for wildlife, special-status species surveys, and property access for surveys. Mitigation measures in Chapter 10, Wildlife Resources, consistently require the Authority to undertake actions. When any mitigation measure states that the Authority "may" perform certain actions, it is used to present one or more actions, either of which would meet the objective of reducing an impact to less than significant. For example, Mitigation Measure WILD-1.31 states that "The Authority may purchase mitigation credits for Swainson's hawk habitat from a CDFW-approved mitigation or conservation bank in lieu of or in addition to onsite or offsite habitat preservation." Mitigation Measure WILD-1.32 states that "The plan may include modifying the structure to be less appealing for roosting without causing harm to bats, installing exclusion measures, or using light or

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	process 'where genuine flexibility remains.' ...A study conducted after approval of a project will inevitably have a diminished influence on decisionmaking. Even if the study is subject to administrative approval, it is analogous to the sort of post hoc rationalization of agency actions that has been repeatedly condemned in decisions construing CEQA." Id. (internal quotations and citations omitted).] Many of the mitigation measures simply require site surveys for species found to be significantly impacted by the Project, and then include a laundry list of possible measures that "may" be taken. (e.g., MM WILD-1.1 for vernal pool branchiopods; MM WILD-1.6 for valley elderberry longhorn beetle; MM WILD-1.10 for monarch butterfly nectar and larval host plants; MM WILD-1.14 for WESP, CRLF, WPT; MM WILD-1.24 for burrowing owls; etc.). As discussed above, the claim that protocol level surveys could not be conducted because site access was limited in an absurd attempt to circumvent CEQA's disclosure and analysis requirements. Beyond the problem of trying to meet both CEQA's analytical and mitigation requirements at the same time, the mitigation measures noted above, among others, are vague and do not specify the actions the Authority will take.	other means to deter bats from using the buildings and structures to roost."
72-109	MM Wild-1.3 requires the mitigation of vernal pool branchiopod species but doesn't specify how much habitat must be accounted for. [Footnote 105: RDEIR/SDEIS at 10-38-39.] The failure to quantify how much mitigation habitat is required is consequential, particularly if the Authority seeks to fulfill its requirements at a mitigation bank. Available vernal pool credits at approved mitigation banks are scarce, and the availability, and where such banks are, should be disclosed to the public before Project approval. The measure then allows for the long-term management of unspecified "conservation areas." [Footnote 106: Id.] The most egregious portion of the measure is the so-called performance standard of 5 percent occupancy for created/restored vernal pools. [Footnote 107: Id.] First, there is no discussion of how that standard was derived, nor is there a reference past	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of the mitigation measures for wildlife. Also see the response to comment 72-113 regarding purchasing credits from mitigation banks. As described in Mitigation Measure WILD-1.3, in addition to mitigating direct effects on occupied habitat by creating or preserving occupied habitat at a 1:1 ratio (habitat created : habitat directly affected) as referenced by the commenter, the direct and indirect effects on habitat occupied by vernal pool branchiopods will be mitigated by preserving occupied habitat at a 2:1 ratio (habitat preserved : habitat directly or indirectly affected) or by an equivalent or greater amount as determined during ESA Section 7 consultation with USFWS. Combined, there would be at

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	studies, agency guidance or scientific literature to support the use of this standard. Such justification is warranted, because on its face a 5 percent occupation of mitigation pools created at a 1:1 ratio of what is impacted, up to 366 acres according to the habitat modeling, doesn't appear to reduce the potentially significant impacts to a federally listed species to a less than significant level, as the RDEIR/SDEIS concludes. The RDEIR/SDEIS's approach to mitigation leaves the public completely in the dark as to what the Authority is committing to do as far as mitigation, and whether that mitigation will be effective.	least 3 acres of habitat that would be preserved/created for each acre lost, which generally is accepted as sufficient mitigation by USFWS for effects on vernal pool branchiopod habitat. The 5% occupancy rate was based on two mitigation and monitoring plans for preservation areas in Placer County: the Vernal Pool Mitigation and Monitoring Plan for the Fiddyment 44 Project (ECORP Consulting 2005a) and the Westpark/Fiddyment Ranch Off-Site Vernal Pool Restoration and Monitoring Plan (ECORP Consulting 2005b). The percentage was based on a review of wet season data for other large scale vernal pool creation/restoration projects, as well as wet season data form natural pools. However, because the occupancy rate could be adjusted during consultation with USFWS, the occupancy rate has been revised in Final EIR/EIS to a minimum of 5%. The text revision does not change conclusions or impact determinations identified in the impact analysis related to wildlife.
72-110	Mitigation Measures VEG-1.1 and VEG-2.1, which propose deferring surveys for special-status plants, sensitive natural communities, and oak woodlands until prior to construction. Surveys need to be completed prior to project approval so that the public and decision-makers can be aware of project's impacts, assess whether the proposed mitigations are sufficient to address those impacts, and seek project design features that adequately avoid or protect rare or sensitive resources.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of mitigation measures and why there is no deferral of mitigation.
72-111	B. The RDEIR/SDEIS's mitigation ratios are unacceptably low. The RDEIR/SDEIS is estimated to impact hundreds of acres of modeled aquatic habitat and thousands of acres of terrestrial habitat, impacting numerous special-status animals and plants as well as sensitive natural communities. Mitigation ratios are grossly insufficient and are not based on the best available science. CEQA requires that feasible mitigation measures be adopted [Footnote 108: CEQA Guidelines § 15126.4(a).], and that the effectiveness of those measures is supported by substantial evidence.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of mitigation for vegetation, wetlands, and wildlife. Regarding the locations of compensatory mitigation, the Authority is preparing a mitigation plan that provides a comprehensive mitigation planning strategy and implementation approach based on anticipated and permitted Project impacts on regulated biological resources. Onsite compensatory mitigation may include habitat establishment,

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	[Footnote 109: See Gray v. County of Madera (2008) 167 Cal.App.4th 1099, 1116-17 [An agency's finding that a mitigation measure will be effective will not be granted deference if the finding is not supported by substantial evidence].] For example, MM WILD-1.3 provides a 2:1 mitigation ratio for preservation and 1:1 mitigation ratio for impacted vernal pool branchiopods, and WESP. Similarly, MM WILD-1.18 provides a 2:1 mitigation ratio for preservation and 1:1 mitigation ratio for impacted CRLF habitat, MM VEG-3.2 and MM VEG-3.3 provide a 1:1 mitigation ratio for creating or restoring impacts to wetlands and WPT, MM VEG-4.2 provides a 1:1 mitigation ratio for oak woodlands (and an inadequate replacement planting program), and MM VEG-2.2 provides a minimum 1:1 mitigation ratio for sensitive natural communities (including riparian areas) and a 3:1 mitigation ratio for shaded riverine areas. The RDEIR/SDEIS does not provide potential sites for compensatory mitigation or restoration for these and other mitigation measures, which makes it impossible for the public to ascertain whether such mitigation is sufficient to minimize the Project's impacts.	rehabilitation, or preservation within an approximately 100-foot-wide buffer zone around and above the maximum fill line for the reservoir. Offsite mitigation will be provided through the purchase of mitigation bank credits, development of turnkey mitigation banks, in-lieu fee programs, conservation easements, or permittee-responsible offsite compensatory mitigation. While the Authority has not identified the locations of other onsite or offsite compensatory mitigation sites, the mitigation plan describes the principles the Authority will employ to develop onsite and offsite mitigation. The Authority will, to the extent possible, take a watershed approach, as described in the compensatory mitigation rule (33 C.F.R. Part 332), for all required compensatory habitat and covered species mitigation where appropriate mitigation lands for covered species are present within the identified watersheds. Under the watershed approach, other landscape-scale characteristics, such as land use, presence or absence of buffers, buffer widths and condition, and proximity to human stressors, will be considered when selecting onsite and offsite mitigation areas. The conceptual design process for all mitigation sites will include steps to compile existing baseline data and collect site-specific data to provide the permitting agencies with confidence that the proposed compensatory mitigation plan will fulfill its objectives (U.S. Army Corps of Engineers 2015). The selection of onsite and offsite compensatory mitigation sites will consider proximity to other existing mitigation banks, conservation areas, wildlife preserves, and other open space areas. Such mitigation planning on a regional level will help ensure that the Project's offsite mitigation areas, in turn, are supported through an informal network of open space areas that could result in increased patch size and habitat connectivity corridors for target species and other wildlife.

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72-112	Avoidance of impacts to sensitive habitats like vernal pools, wetlands, riparian areas, and other sensitive natural communities should be prioritized, after which in-kind mitigation should be a minimum of 3:1 given that these habitats support numerous special-status species and high levels of biodiversity, can be important for wildlife connectivity, and so much of these habitats have already been lost, and 5:1 for habitat restoration or creation with continued monitoring, adaptive management strategies, and well-defined success criteria, to be funded in perpetuity. Created habitat mitigation ratios should not be lower than preservation mitigation ratios. The RDEIR/SDEIS needs to consider that, due to their project, habitat loss and species displacement are immediate, while any gains from their mitigation are uncertain. Therefore, higher mitigation ratios coupled with extended years of effective monitoring and adaptive management strategies are needed to improve chances of successfully mitigating impacts and achieving no net loss of habitats like vernal pools, wetlands, riparian areas, and other sensitive natural communities (Ambrose et al., 2006; Moilanen et al., 2009; Sudol & Ambrose, 2002). Scientists recommend 15-20 years or more of monitoring to determine the success, or lack thereof, of enhanced, restored, or created habitat (Mitsch & Wilson, 1996; Zedler & Callaway, 1999). If higher mitigation ratios are not feasible, the RDEIR/SDEIS must provide evidence and analysis supporting that conclusion. For comparison, the City of San Diego Vernal Pool Habitat Conservation Plan requires 4:1 mitigation when no listed species are present, and up to 8:1 when listed species are present (City of San Diego, 2019).	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of mitigation for special-status species and wetland resources. As mentioned in Master Response 6, the mitigation ratios are minimum ratios that will be implemented at an equivalent or greater requirement as determined by the appropriate regulatory agency during the permitting process.
72-113	Another example of inadequate compensatory mitigation is MM WILD-1.21, which provides 3:1 and 1:1 mitigation ratios at USFWS- or CDFW-approved conservation/mitigation banks. for permanent and temporary losses of giant garter snake habitat. However, potential conservation/mitigation banks are not provided, which again, makes it impossible for the public to ascertain whether such mitigation is sufficient to minimize the Project's	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, regarding the adequacy of mitigation measures for wildlife. Mitigation/conservation banks will be identified after the Project design is refined, impact acreages are finalized, access to land is granted, focused and protocol-level surveys have been conducted, and final mitigation acreages have been determined in coordination

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	impacts. The RDEIR/SDEIS goes on to state that if credits are not purchased, then the Authority will plan and develop an unspecified amount of conservation areas. Does this mean they plan to create giant garter snake habitat? If so, would the mitigation ratios be the same as those for mitigation bank credits? As mentioned above, avoidance of impacts should be prioritized followed by in-kind preservation mitigation. Created habitat mitigation ratios should be much higher than preservation mitigation ratios, and they should be coupled with extended years of effective monitoring and adaptive management strategies (Ambrose et al., 2006; Moilanen et al., 2009; Sudol & Ambrose, 2002). Scientists recommend 15-20 years or more of monitoring and adaptive management to determine the success, or lack thereof, of enhanced, restored, or created habitat (Mitsch & Wilson, 1996; Zedler & Callaway, 1999). If higher mitigation ratios are not feasible, the RDEIR/SDEIS must provide evidence and analysis supporting that conclusion.	with CDFW and USFWS. The Authority will contact existing mitigation bank operators to enquire as to the availability of habitat and species credits from banks with service areas that include the Project location. If applicable credits are available, the Authority will purchase all available credits. Based on current market availability, habitat and species credits are limited and additional sources of offsite crediting will be required. Based on a May 2022 query of the USACE Regulatory In-Lieu Fee and Bank Information Tracking System database, one bank offers giant gartersnake credits (U.S. Army Corps of Engineers 2022). CDFW also maintains a database of conservation and mitigation banks established in California to compensate for impacts under the CESA. Some of these banks may also have credits available to compensate for Project's effects on giant gartersnake and other state regulated resources. Mitigation Measure WILD-1.21 does not suggest that habitat would be created. The measure provides: "Permanent impacts on habitat will be mitigated by restoring or preserving habitat at a 3:1 ratio (habitat restored or preserved: habitat affected) or by an equivalent or greater amount as determined through consultation with USFWS or CDFW. Temporary impacts on habitat will be mitigated by restoring or preserving habitat at a 1:1 ratio (habitat restored or preserved : habitat affected), or by an equivalent or greater amount as determined during consultation with USFWS or CDFW." The amount of habitat restored or preserved would depend on the amount of habitat permanently and temporarily impacted by the Project. If credits are not purchased at a USFWS and CDFW-approved conservation bank, which have long-term adaptive management plans with performance standards, Mitigation Measure WILD-1.21 provides that the Authority will work closely with USFWS and CDFW

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		in implementing standards for long-term management and protection of conservation areas. Regarding the length of time that conservation areas would be monitored, the Authority is in the process of preparing a Mitigation Plan that describes the mitigation planning strategy and implementation approach for onsite and offsite mitigation. This Mitigation Plan has a Long-Term Management, Monitoring, and Adaptive Management component that explains that long-term management will begin after the mitigation sites achieve their designated performance standards and success criteria. The purpose of a long-term management plan is to ensure that the mitigation is maintained and managed in perpetuity in a manner that preserves a project's mitigation goals. The long-term management plan will establish guidance for management of day-to-day activities and will be an enforceable instrument, implemented by conservation easements or other enforcement documents.
72-114	These [vernal pool brachiopods, CRLF, wetlands, oak woodlands, giant garter snake] are just a few examples of the inadequate mitigation ratios provided in the RDEIR/SDEIS; this is not a comprehensive list of the issues. With one third of America's plant and animal species vulnerable to impacts from human activity and one fifth at risk of extinction (Stein et al., 2018), it is crucial that strategies to prevent further degradation and loss of biodiversity are explicit and scientifically sound. The Project would result in thousands of acres of impacts to habitats and sensitive natural communities that support numerous special-status species and much of California's biodiversity. Mitigation measures must be considered in the RDEIR/SDEIS so that the proper environmental analysis can take place. [Footnote 110: See Sundstrom v. Co. of Mendocino (1988) 202 Cal.App.3d 296.] More discrete mitigation measures that incorporate the best available science need to be included in the RDEIR/SDEIS to enable the public and decision-makers to	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of mitigation ratios and mitigation measures for special-status species and wetland resources. As mentioned in Master Response 6, the mitigation measures described in the RDEIR/SDEIS will substantially reduce impacts of the Project. Discrete mitigation measures incorporating the best available science are also described in Chapters 9 and 10.

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	evaluate their effectiveness in avoiding, minimizing, and mitigating the Project's impacts to sensitive habitats and natural communities.	
72-115	The RDEIR/SDEIS Fails to Adequately Assess and Disclose Information Regarding the Baseline Conditions of Wildlife Connectivity and Vegetation in The Project Area. The ability of wildlife to move between distinct habitat areas is critical to both individual and population survival. As landscapes become more fragmented by development, it is critical that proposed Projects are designed to minimize impacts on habitat connectivity. This is especially vital as climate change alters the range and amount of habitat available to different species. Despite concluding that Project impacts to wildlife movement would be significant and unavoidable, the RDEIR/SDEIS fails to properly disclose and analyze the extent of the impacts, nor does it do nearly enough to mitigate the significant impacts.	The baseline conditions for wildlife corridors were included in the RDEIR/SDEIS under Impact WILD-2. Some text from Impact WILD-2 has been relocated under a new heading in Chapter 10, Wildlife Resources of the Final EIR/EIS called Wildlife Corridors and clarified. Figure 10-1 showing wildlife corridor information in the study area from the California Essential Habitat Connectivity Project (Spencer et al. 2010) is now also included in the section, which supports the text previously included under Impact WILD-2 in the RDEIR/SDEIS. The text revisions and inclusion of the figure does not change conclusions or impact determinations identified in the impact analysis related to wildlife corridors. The baseline conditions for wildlife corridors consists of identifying natural landscape blocks, essential connectivity areas, small natural areas, core reserves and corridors, potential riparian linkages, and missing linkages from the California Essential Habitat Connectivity Project in the study area. This information was then used to inform the impact analysis and the conclusion that both construction and operation would affect the movement of wildlife as described under Impact WILD-2. The extent of the impacts on connectivity and corridors is identified using the type of habitat and the mechanisms under construction or operations that would affect the connectivity of that habitat. Mitigation Measure WILD-1.15 provides specific details about the assessment that is required to inform the design of the roads and locations of appropriate wildlife crossings to support connectivity and corridors, and provides specific criteria the wildlife crossings will satisfy, as well as references literature to be used when designing and evaluating the potential locations for wildlife crossings.

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		Mitigation Measure WILD-1.16 requires a qualified biologist to monitor the wildlife crossings and clear them of debris or oversee the clearing of debris to ensure they are functioning properly. Mitigation Measure WILD-1.16 also requires a monitoring and maintenance plan and summarizes the contents of this plan.
72-116	78. A. The RDEIR/SDEIS's assessment and disclosure of wildlife connectivity in the Project area is inadequate. There is insufficient discussion of the baseline conditions of wildlife connectivity in the Project area. It is not until the impact analysis on page 10-137 that there is any mention of identified connectivity areas and linkages in the RDEIR/SDEIS, and no maps are provided to visualize where important connectivity areas are in the Project area, or where there is nearby protected open space, like the Sacramento National Wildlife Refuge. The RDEIR/SDEIS fails to adequately disclose the importance of the Project area to local, regional, and continental wildlife connectivity for numerous special-status species, including mountain lions and American badgers, valley elderberry longhorn beetle and monarch butterflies, CRLF and WESP, native bees and giant garter snake, tricolored blackbirds and western yellow-billed cuckoos, burrowing owls and native bats, and many other species. CDFW has identified much of the project area as having high connectivity value and high biodiversity ranking, with some areas marked as "irreplaceable and essential corridors" and "conservation planning linkages" in their Areas of Conservation Emphasis (ACE) program, yet this is erroneously omitted from the RDEIR/SDEIS. The RDEIR/SDEIS fails to adequately assess and describe the wildlife connectivity baseline conditions in the Project area, making it impossible for the public to determine whether the Authority adequately assesses and mitigate impacts due to the proposed Project.	Please see the response to comment 72-115 regarding the baseline conditions for wildlife corridors. The figure showing wildlife corridor information that was added to the Final EIR/EIS shows that there are low priority linkages, small natural areas, and natural landscape blocks in the study area. There is also an essential connectivity area northeast of the study area. There are no high or medium priority linkages identified in the study area. A review of CDFW's Areas of Conservation Emphasis viewer shows that portions of the study area have "irreplaceable and essential corridors," "conservation planning linkages," and "connections with implementation flexibility" (California Department of Fish and Wildlife 2018). This information has been included on a new figure (Figure 10-2) and added to Chapter 10, Wildlife Resources, in the new Section 10.2.4, Wildlife Corridors. The text revisions and added figure do not change conclusions or impact determinations identified in the impact analysis related to wildlife.

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72-117	The Project would result in the destruction and removal of thousands of acres of contiguous, diverse habitats and eliminate local and regional connectivity for small, less mobile species. The Project also includes the construction of multiple roads. Roads and development create barriers that lead to habitat loss and fragmentation, which harm native wildlife, plants, and people. As barriers to wildlife movement, poorly planned development and roads can affect an animal's behavior, movement patterns, reproductive success, and physiological state, which can lead to significant impacts on individual wildlife, populations, communities, landscapes, and ecosystem function (Ceia-Hasse et al., 2018; Haddad et al., 2015; Marsh & Jaeger, 2015; Mitsch & Wilson, 1996; Trombulak & Frissell, 2000; van der Ree et al., 2011). For example, habitat fragmentation from roads and development has been shown to cause mortality and harmful genetic isolation in mountain lions in southern California (Ernest et al., 2014; Riley et al., 2014; Vickers et al., 2015), increase local extinction risk in amphibians and reptiles (Brehme et al., 2018; Cushman, 2006), cause high levels of avoidance behavior and mortality in birds and insects (Benítez-López et al., 2010; Kantola et al., 2019; Loss et al., 2014), and alter pollinator behavior and degrade habitats (Aguilar et al., 2008; Goverde et al., 2002; Trombulak & Frissell, 2000). Habitat fragmentation also severely impacts plant communities. An 18-year study found that reconnected landscapes had nearly 14 percent more plant species compared to fragmented habitats, and that number is likely to continue to rise as time passes (Damschen et al., 2019). The authors conclude that efforts to preserve and enhance connectivity will pay off over the longterm (Damschen et al., 2019). In addition, connectivity between high quality habitat areas in heterogeneous landscapes is important to allow for range shifts and species migrations as climate changes (Cushman et al., 2013; Heller & Zavaleta, 2009; Krosby et al., 2018). Loss of wildlife connectivity decreases biodiversity and degrades ecosystems.	Chapter 10, Wildlife Resources, evaluates potential effects of reducing connectivity under Impact WILD-2. The impact evaluation concludes: "Construction of Alternative 1 or 3 would create barriers to or impede wildlife movement within existing natural landscape blocks and essential connectivity areas. Fragmentation and loss of natural landscape blocks and essential connectivity areas would result in a significant impact on wildlife movement and wildlife corridors… Operation of Alternative 1 or 3 would result in additional vehicles on roadways and fencing that would create barriers to or impede wildlife movement. These impediments would also result in a significant impact on wildlife movement…. Implementation of mitigation measures discussed in Impact WILD-1 (including Mitigation Measures WILD-1.15 and WILD-1.16) would reduce construction and operation impacts on nursery sites, wildlife movement, and the loss of habitat connectivity within existing habitat blocks, but they would not mitigate the substantial barrier created by Sites Reservoir."

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72-118	Connectivity is critical for resilience to climate change. Climate change is increasing stress on species and ecosystems, causing changes in distribution, phenology, physiology, vital rates, genetics, ecosystem structure and processes, and increasing species extinction risk (Warren et al., 2011). A 2016 analysis found that climate-related local extinctions are already widespread and have occurred in hundreds of species, including almost half of the 976 species surveyed (Wiens, 2016). A separate study estimated that nearly half of terrestrial non-flying threatened mammals and nearly one-quarter of threatened birds may have already been negatively impacted by climate change in at least part of their distribution (Pacifici et al., 2017). A 2016 metaanalysis reported that climate change is already impacting 82 percent of key ecological processes that form the foundation of healthy ecosystems and on which humans depend for basic needs (Scheffers et al., 2016). Genes are changing, species' physiology and physical features such as body size are changing, species are moving to try to keep pace with suitable climate space, species are shifting their timing of breeding and migration, and entire ecosystems are under stress (Cahill et al., 2012; Chen et al., 2011; Maclean & Wilson, 2011; Parmesan, 2006; Parmesan & Yohe, 2003; Root et al., 2003; Warren et al., 2011). Thus, the RDEIR/SDEIS must use the best available science and adequately assess the baseline conditions of the Project area so impacts can be adequately assessed and mitigated.	Please see Chapter 3, Environmental Analysis, for the requirements and definitions of the environmental baseline and No Project Alternative/No Action Alternative. In addition, please see Master Response 2, Alternatives Description and Baseline, for clarifying information regarding the baseline conditions and No Project Alternative/No Action Alternative. Each chapter in the document, including Chapter 10, Wildlife Resources, defines the baseline conditions and No Project Alternative/No Action Alternative. Chapter 10, and all other resource chapters, use the best available science and address the baseline conditions of the Project area so that impacts can be assessed and mitigated. As described in Chapter 31, Cumulative Impacts, "Greenhouse gas emissions (GHGs) are global pollutants and climate change is a global issue. GHGs are different from criteria air pollutants (such as ozone precursors), which are primarily pollutants of regional and local concern. Because of long atmospheric lifetimes, GHGs emitted by sources globally accumulate in the atmosphere. No single emitter of GHGs is large enough to produce global climate change on its own. Rather, climate change is the result of the individual contributions of countless past, present, and future sources. Therefore, GHG impacts are inherently cumulative. Global GHG emissions continue to increase from population and economic growth, and this is worsening the effects of global climate change. Efforts to reduce GHG emissions are occurring at the local, state, national, and international levels; however, current projections indicate that emissions will still increase for the next decades and increase the current GHG concentrations in the atmosphere…. As noted in Chapter 21, total net emissions generated by construction of Alternatives 1 and 3 are estimated to be 348,648 or 348,796 metric tons CO2e (Table 21-4). For operation, Alternatives 1 and 3 are estimated to result in 15,509 to 28,671 metric

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		tons CO2e per year, with Alternative 3 generating lower emissions than Alternative 1 (Table 21-5 and Table 21-8). The Authority will implement Mitigation Measure GHG-1.1 to mitigate these emissions to net zero through a GHG reduction plan. This measure ensures that construction and operation emissions would not result in a significant cumulatively considerable contribution to impacts on global climate change, because the net emissions from construction and operation would be net zero with Mitigation Measure GHG-1.1." Finally, Chapter 28, Climate Change, acknowledges the types of potential effects on animals from climate change that are described by the commenter.
72-119	B. The RDEIR/SDEIS's assessment and disclosure of impacts to plants and vegetation in the Project area is also inadequate. The RDEIR fails as an informational document because it also does not sufficiently quantify, analyze and disclose the project's impact to plants and vegetation. The Legislature has made it clear that an EIR is "an informational document" whose purpose is "to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project." [Footnote 111: Laurel Heights Improvement Assn. v. Regents of University of California, 47 Cal.3d 376, 391 (Cal. 1988).] Here, the RDEIR makes it nearly impossible for the lead agency or the public to understand the magnitude of the project's impacts to rare plants and habitats. The RDEIR explicitly admits that "the full extent of impacts on special-status plants is currently unknown because recent botanical surveys for special-status plants have not been conducted throughout the study area." [Footnote 112: RDEIR/SDEIS, Ch. 9, pg. 13.] It goes on to state that for some special status plants for which there are no habitat models, the extent	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of the baseline conditions for vegetation and wildlife resources, special-status species surveys, and habitat models in informing impact analyses.

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	of impacts cannot be calculated at all, and therefore the impact assessment is merely qualitative. [Footnote 113: Id.] Even where habitat models have been utilized, models are not an appropriate substitute for surveys.	
72-120	Despite the EIR's claim that the proposed mitigation measures will mitigate impacts to plants to a less than significant level, this failure to quantify and analyze impacts before proposing mitigation measures is unlawful. "[T]his short-cutting of CEQA requirements subverts the purposes of CEQA by omitting material necessary to informed decision-making and informed public participation. It precludes both identification of potential environmental consequences arising from the project and also thoughtful analysis of the sufficiency of measures to mitigate t[ho]se consequences." [Footnote 114: Lotus v. Dep't of Transp., [22]3 Cal.App.4th 645, 658 (Cal. Ct. App. 2014); San v. County, 149 Cal.App.[4t]h 645, 663-64 (Cal. Ct. App. 2007); see also San v. County, 149 Cal.App.4th 645, 663-64 (Cal. Ct. App. 2007) ("a mitigation measure cannot be used as a device to avoid disclosing project impacts.").]	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of the baseline conditions for vegetation and wildlife resources in informing impact analyses.
72-121	C. The RDEIR/SDEIS's mitigation of wildlife connectivity impacts is inadequate. While Project "impacts on wildlife movement and habitat connectivity after mitigation would remain significant and unavoidable" [Footnote 115: RDEIR/SDEIS at 10-139.], we are encouraged to see mitigation measures like MM WILD-1.15, which provides for the design and construction of wildlife crossings for new roadways at suitable locations using guidelines provided by Kintsch et al. (2015) and in coordination with CDFW, and MM WILD-1.16, which provides for monitoring and maintenance of the wildlife crossings. However, such mitigation should not be limited to only new roads. CEQA requires a lead agency to adopt feasible mitigation measures that would reduce a project's significant environmental impacts. [Footnote 116: Pub. Res. Code § 21002, 21002.1(b); see also CEQA Guidelines §§ 15021, 15091.] The RDEIR/SDEIS must do more to mitigate the significant impacts to	Mitigation Measure WILD-1.15 is not limited to new roads; it also applies to "other roads as determined by the Authority and the wildlife biologist, in coordination with CDFW." Therefore, existing roads in the study area would also be considered for wildlife crossings or other connectivity enhancements and would be part of the wildlife connectivity and crossing assessment. Mitigation Measures WILD-1.15 and WILD-1.16 sufficiently mitigate the potential impacts on wildlife movement and connectivity by requiring a connectivity and crossing assessment informed by wildlife crossing literature to be prepared, providing specifications to guide the installation of wildlife crossings, and requirements for monitoring and maintaining the crossings. Mitigation Measure WILD-1.15 provides that the wildlife connectivity assessment "will include a

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	wildlife connectivity. Given the severity of the Project's impacts to the region's wildlife connectivity, such measures to plan and implement wildlife crossings for various target species should extend to nearby roads that present existing barriers to wildlife movement. In addition, the Authority should work with CDFW, Caltrans, and other local and regional stakeholders to determine areas along State Highway 20 and State Highway 162 to identify appropriate locations and designs for wildlife crossings and implement them. In-depth analyses that include on-the-ground movement studies of which species are moving in the area and their home range area, habitat use, and patterns of movement, as well as roadkill data from sources like the UC Davis Road Ecology Center and potentially elsewhere, are needed to determine how to best implement such crossings. Any crossings implemented on new or existing roads should be approved by CDFW.	landscape-scale and local (Project)-scale assessments" and therefore will address the Project's impact on the wildlife connectivity in the region (with the exception of the reservoir's significant and unavoidable effect on wildlife corridors). The assessment may use database research, field surveys, photo monitoring, GIS modeling, or a combination thereof to identify existing wildlife species in the Project area, determine how connectivity and species movement may be affected by the Project, and determine the appropriate locations and designs of wildlife crossings. The measure also specifies that the assessment will be done in coordination with CDFW. Therefore, the mitigation measure requires in-depth analysis as raised by the commenter. Mitigation Measure WILD 1.15 was revised to add that the connectivity assessment would consider maintaining and enhancing connectivity in the area surrounding the reservoir. The text revisions do not change the conclusions or impact determinations identified in the impact analysis related to wildlife. State Highways 20 and 162, as identified by the commenter, are outside of the study area. There would be no potential impacts from the Project along those state highways, and therefore, no mitigation measures would need to be adopted.
72-122	The Coalition is also encouraged to see that the RDEIR/SDEIS acknowledges that different species have different mobility capabilities--smaller, less mobile species often need more frequent crossing structures compared to larger, more mobile species--and that optimal crossing design includes suitable habitat on both sides of the roadway. Although Gunson et al. (2016) recommend that crossing structures generally be spaced about 300m (~1000 feet) apart for small animals when transportation infrastructure	The text of Mitigation Measure WILD-1.15 in Chapter 10, Wildlife Resources, of the Final EIR/EIS has been revised to include additional wildlife crossing references, including those referenced in the comment. As part of the connectivity and crossing assessment required by Mitigation Measure WILD-1.15, land ownership and planning

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	bisects large expanses of continuous habitat, they recognize that some amphibians may need more frequent crossings no more than 50m (~160 feet) apart. Therefore, the previously mentioned analyses of species that occur in the area and how they move should be considered when determining the spacing of the wildlife crossings. In addition, the mitigation measures should require the Authority to follow guidelines and best management practices discussed in Langton & Clevenger (2021), "Measures to Reduce Road Impacts on Amphibians and Reptiles in California." Also, the preservation and management of suitable habitat on both sides of the wildlife crossings should be included as a requirement of the mitigation measure.	documents for the study area would be reviewed and considered when determining potential locations for wildlife crossings. Where possible, wildlife crossings will be located where there is compatible land ownership and use and opportunities for habitat preservation. These additional details are added to Mitigation Measure WILD-1.15 for clarification. The text revisions do not change conclusions or impact determinations identified in the impact analysis related to wildlife.
72-123	Design that incorporates wildlife connectivity should be implemented as early as possible for it to be most effective in terms of both cost and function for the targeted species or guild; therefore, experts should be involved in the design process from the very beginning. Yet MM WILD-1.15 states "[p]rior to final roadway design for the Project, a wildlife connectivity assessment will be conducted to assess existing and expected wildlife movement and habitat connectivity conditions, evaluate Project-related impacts on connectivity and species movement, and identify appropriate wildlife crossing locations and designs." [Footnote 117: RDEIR/SDEIS at 10-64.] This suggests that much of the roadway design could be completed prior to the completion of the wildlife connectivity assessment, which could then undermine the assessment's findings. The wildlife connectivity assessment should be completed and approved by CDFW prior to the start of roadway design so that the assessment can inform the design from the beginning.	Mitigation Measure WILD-1.15 in Chapter 10, Wildlife Resources, states that the wildlife connectivity assessment will be conducted prior to final roadway design. There are multiple phases in the roadway design and the wildlife connectivity assessment will be conducted concurrently with roadway design and prior to the final design. As specified in Mitigation Measure WILD-1.15, the wildlife connectivity and crossing assessment and locations of crossings will be determined by the Authority and a qualified wildlife biologist with expertise in wildlife crossing use and designed in coordination with CDFW.
72-124	Last, monitoring and adaptive management of the wildlife crossings through MM WILD-1.16 should include monitoring the effectiveness of the wildlife crossings for wildlife movement using wildlife cameras and roadkill surveys.	Mitigation Measure WILD-1.16 in the Final EIR/EIS was modified to clarify how monitoring of wildlife crossings will be conducted. The text revisions do not change conclusions or impact determinations identified in the impact analysis related to wildlife.

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72-125	D. The RDEIR/SDEIS's mitigation of plants and vegetation impacts is inadequate. The RDEIR/SDEIS's inadequate impacts analysis described above prevents the creation of sufficient mitigation measures. Simply put, how can decision-makers and the public evaluate if mitigation measures are sufficient for a particular impact if the magnitude of the impact in the first place is unknown? For exam[p]e, in Save the Agoura Cornell Knoll v. City of Agoura Hills, 46 Cal.App.5th 665, 694 (Cal. Ct. App. 2020), the court found that "an updated [plant] survey would not merely be helpful, but would be necessary to formulate an adequate mitigation measure for these affected plant species." Similarly here, sufficiently recent plant surveys are essential for formulating appropriate mitigation measures.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses baseline conditions for vegetation and wildlife resources, adequacy of mitigation measures for reducing impacts, and adequacy of past special-status species surveys in conjunction with existing information and habitat modeling.
72-126	In any event, the proposed mitigation measures are unlikely to mitigate the project's impacts to special-status plant species to a less than significant level. First, Mitigation Measure VEG-1.1 (Section 9-26) "will require qualified botanists to conduct special-status plant surveys of the Project footprint." While this may seem sufficient, the presence of annual plant-dominated habitats on the site (i.e. grasslands) may make it impossible to complete this requirement. As the CDFW Protocols state, such habitats "may require multiple annual surveys to fully capture baseline conditions." Though VEG-1.1 states that surveys will follow CDFW Protocols "or the most current protocols, specifically with respect to the number and timing of surveys, use of reference populations, and evaluation of negative findings," it is unclear that the construction timeline will allow for multiple years of surveys to be completed as required, and which is especially necessary in light of California's recent drought conditions.	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses Mitigation Measure VEG-1.1, which provides that the Authority will conduct surveys in accordance with CDFW protocols, or the most current protocols with respect to the number and timing of surveys, and that the results of those surveys will be submitted in a report to CDFW and/or USFWS for review no less than 1 year prior to the start of ground-disturbing activities.
72-127	Mitigation Measure VEG-1.2 (Section 9-27), which states that the Authority, "will acquire and permanently protect compensatory mitigation habitat for each affected species at a minimum 2:1 ratio," is also flawed. The RDEIR/SDEIS fails to provide rationale that a 2:1 mitigation ratio will be	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of the mitigation measures and comments related to deferred mitigation. As noted in Master Response 6 and explained in Chapter 9, the 2:1 ratio in Mitigation

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	sufficient to compensate for the loss of habitat for all special status plants that occur or are likely to occur on the project site. This type of determination can only be made if a species-specific analysis of impacts is conducted. The RDEIR/SDEIS contains no evidence or analysis that a blanket 2:1 ratio will be appropriate for each species that will be affected by the project. Mitigation Measure VEG-1.2 also states that, "compensatory mitigation will be accomplished by procurement of existing offsite occupied habitat acquired in-fee." This is a vague mitigation measure that may not be possible, given the lack of information in the RDEIR/SDEIS. The Sites Project Authority cannot guarantee that habitat for compensatory mitigation is available for all the special-status plants that may be present on the project site, because it does not know how many special-status plants are on the site in the first place. By extension, the Authority cannot guarantee that there are funds available for the purchase of vast amounts of land for mitigation that may be required. Without first confirming the actual impact to special status plants, the proposed mitigation measures are speculative at best. Vague and deferred mitigation measures have been shown to be legally indefensible. [Footnote 1[18]: See Save the Agoura Cornell Knoll v. City of Agoura Hills, 46 Cal.App.5th 665, 694 (Cal. Ct. App. 2020).]	Measure VEG-1.2 is the minimum ratio, final compensation ratios will be based onsite-specific information determined through coordination with the applicable permitting agencies, and compensation acreage will be based on the area of impact as determined by the preconstruction surveys conducted under Mitigation Measure VEG-1.1. Master Response 6 also discusses the requirement to prepare a Mitigation Monitoring Reporting Program, which will identify the required mitigation measures and the timing of mitigation measures, including preconstruction surveys for special-status plants.
72-128	CEQA requires an agency to make findings that a project's impacts can be mitigated, and those findings must be based on substantial evidence. [Footnote 119: CEQA Guideline § 21081, 21081.5.] Because the RDEIR/SDEIS's analysis of impacts at present is largely uninformed by actual data, it is impossible for the lead agency to form conclusions based on substantial evidence about how the project will impact special-status plants and sensitive plant communities, and whether the proposed mitigation measures are sufficient to mitigate the impacts to less than significant levels. The best the RDEIR/SDEIS can do is speculate that "Construction of Alternative 1 or 3 could also result in an undetermined loss of potential habitat for the special-status plants not	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses access, the adequacy of the baseline conditions for vegetation and wildlife resources in informing impact analyses, and the adequacy of mitigation measures for reducing impacts. Please also see the responses to comments 72-105 and 72-106.

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	previously observed during surveys of the study area but were assessed as having a high probability of occurrence," [Footnote 120: RDEIR/SDEIS Ch. 9, pg. 23.] and then propose vague and unenforceable mitigation measures that are untethered to actual analysis of their effectiveness. This lack of quantification and analysis renders the adopted mitigation measures vague and inadequate, and violates CEQA's substantial evidence standard.	
72-129	F. Impacts to Cultural Resources. The RDEIR/SDEIS does not discuss Tribal Beneficial Uses and Impacts to Tribal Communities and Trust Species Are Not Analyzed. The RDEIR/EIS states that "[t]he area that would be affected by Project operations involves nearly all of the Sacramento Valley from Redding in the north through the Yolo Bypass in the south, with a focus on the major rivers (i.e., Sacramento, Feather, and American Rivers) that flow into the valley." [Footnote 121: RDEIR/SDEIS at 23-6.] The Coalition is concerned that not only did the Sites Project Authority not engage in meaningful government to government consultation with all the impacted Tribes within this area, they did not even notify Tribes that will be impacted by the Project's changes to water diversions and floodplain inundation.	Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, which addresses the federal trust relationship, as well as Tribal Beneficial Uses. Master Response 7 also discusses the Authority's and Reclamation's tribal consultation efforts, including for the purpose of compliance with Assembly Bill (AB) 52 and Section 106, respectively. The Authority's consultation efforts have included all tribes traditionally and culturally affiliated with the Project area, including tribes affiliated predominantly with areas that could be affected by changes to water operations.
72-130	This lack of meaningful consultation is particularly egregious because this Project includes impacts to cultural resources that cannot be mitigated. The most notable Project change is the intent to expand the Red Bluff diversion and change the entire flow regime of the Sacramento River. [Footnote 122: The Coalition also highlights that the Project impacts from the vast improvements to canals and pumps do not appear to be included in the RDEIR/SDEIS.] As proposed, this Project will have serious impacts on water quality and fisheries. It will also substantially reduce acres of floodplains and inundated wetlands in the Northern Delta such as the Yolo Bypass. These areas are not only critical to the growth, production, and survival of Tribal	The commenter references the Project's proposed changes to existing facilities, specifically the RBPP. Please refer to Chapter 2, Project Description and Alternatives, which describes the Sacramento River diversion and conveyance to regulating reservoirs, including the RBPP and the GCID Main Canal diversions and system upgrades and modifications to those facilities under Alternatives 1, 2, and 3. Impacts associated with those proposed modifications are evaluated throughout all resource chapters, as relevant, including the cultural resources chapter. Impacts on the GCID are discussed in Chapter 22, Cultural Resources, Section 22.4, Impact Analysis and Mitigation

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	trust fisheries such as salmon, trout and lamprey, they are also needed for cultural plants such as tullies and willow. These plants cannot survive or provide for Tribal people without adequate high-water events that provide floodplain and wetland inundation.	Measures, under Impact CUL-1. Impacts on the RBPP are not discussed in Chapter 22 because it is not a historical resource/historic property. The Red Bluff diversion was previously built to accommodate up to a total capacity of 2,500 cfs and, as described in Chapter 2, "…two additional 250-cfs, 600 horsepower (hp) vertical axial-flow pumps [are to be installed] into [two] existing concrete pump bays at the RBPP. The addition of these two pumps would increase the capacity from 2,000 to 2,500 cfs." Please see impacts disclosed in Chapter 6, Surface Water Quality, and Chapter 11, Aquatic Biological Resources, regarding impacts on water quality and fish. Specifically, modeling showed acres of floodplain and inundated wetlands in the north Delta, such as the Yolo Bypass, will not be substantially reduced compared to the No Project Alternative (see Chapter 11, Floodplain Inundation and Access sections; Appendix 11N, Other Flow-Related Upstream Analyses; and Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis). This information regarding Yolo Bypass is referenced and used in Chapter 9, Vegetation and Wetland Resources, Section 9.4.2,Operation, regarding vegetation in these areas. Tule and willow are not species of special concern and therefore are not specifically addressed in Chapter 9. Tule and willows, however, do grow in sensitive wetland and riparian habitats in the study area. Impact FISH-2 in Chapter 11 discusses reductions of inundated acreage in the Yolo Bypass between the No Project Alternative and Alternatives 1, 2, and 3. The net reduction in inundated habitat acres in the Yolo Bypass from Alternatives 1, 2, and 3 compared to the No Project Alternative from November through May for all water year types is 1.8% (98 acres). The Yolo Bypass is largely agricultural, and the acres of potentially affected tule and willow in riparian habitat are a fraction of

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		the overall acreage in Yolo Bypass and are located primarily at the north end near Fremont Weir (Yolo Habitat Conservancy 2018; California Department of Fish and Game 2008). Based on modeled net reduction from November through May, the minor changes in winter and spring flooding would not substantially affect the associated floodplain wetlands or riparian habitat and, therefore, would not substantially affect the tule and willows growing in those habitats. The commenter also references potential impacts on Tribal trust resources, which the commenter describes as fisheries, such as salmon, trout, and lamprey, as well as certain "cultural plants such as tullies and willow." The commenter is referred to Master Response 7, Tribal Coordination, Consultation, and Engagement, which responds to comments regarding potential impacts on Tribal cultural resources and Indian Trust Assets.
72-131	The Coalition disagrees with the RDEIR/SDEIS statement that: "The nature of the planned work does not occur in an area that would affect Indian hunting or water rights nor is the alternative on Indian trust lands. Pulse flow protection measures applied to precipitation-generated flow events from October through May and a fish monitoring program to inform real-time operational adjustments limit the potential for adverse effects on fishing resources (i.e., juvenile salmonids); Mitigation Measure FISH-2.1, Wilkins Slough Flow Protection Criteria, will further reduce effects on juvenile salmonid rearing and migrating habitat." [Footnote 123: RDEIR/SDEIS at 29-1.] The Project will definitely "affect" Tribal rights and impact Tribal trust resources. As affirmed in both federal and state law [Footnote 124: The Coalition would also like to note that California is currently in the process of identifying Tribal beneficial uses in the Bay Delta, and it is highly likely the Sacramento River, Tribal	Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding trust resources and responsibilities and Tribal Beneficial Uses. Please also refer to Master Response 2, Alternatives Description and Baseline, regarding Project refinements and Mitigation Measure FISH-2.1.

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	Subsistence Fishing, and Tribal Tradition and Culture will be listed.], Tribes can have both appropriative and riparian water rights. [Footnote 125: In United States v. Adair, the 9th Circuit Court of Appeals held that "(1) the Tribe and its members have water rights sufficient to maintain their treaty rights to hunt and fish on the former reservation; (2) individual Indian landowners have water rights, subject to the paramount rights of the Tribe, sufficient to maintain agriculture on their lands" 723 F.2d 1394, 1397 (9th Cir. 1983).	
72-132	Tribes have identified the San Francisco Bay Delta as an important Tribal site and salmon as a Trust species. The claims of the Sites Project Authority that there is no impact on Tribal trust resources ignores the Project's impacts to river flows and salmon migration. As discussed previously, the Coalition has established that salmon will be impacted by this project as will the Sacramento and Trinity Rivers. The Sites Project Authority should take steps to 1) engage in meaningful consultation and 2) analyze the Project impacts to Tribal trust resources.	Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding trust responsibilities and consultation and to Master Response 8, Trinity River. Chapter 11, Aquatic Biological Resources, addresses impacts on salmon, steelhead, and other fish.
72-133	The Project proponents fail to meet the tribal consultation legal requirements under CEQA. The Project proponents have not completed tribal consultation as required by Assembly Bill (AB) 52 under the California Environmental Quality Act. [Footnote 128: Pub. Res. Code § 21080.3.1; California Government Code § 65352.4.] Beginning in February 2017, the Sites Project Authority sent Project notification letters to seven Tribes identified by the California Native American Heritage Commission that have a "traditional and cultural affiliation with the geographic area of the Project", and as outlined in consultation with California Native Tribes under California Public Resource Code section	Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, which addresses the Authority's tribal consultation efforts, including for the purpose of complying with AB 52 and CEQA. Specifically, Master Response 7 details the Authority's AB 52 correspondence methods and timeline and ongoing engagement efforts.

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	21080.3.1. The seven Tribes included: the Cachil Dehe Band of Wintun Indians; Cortina Indian Rancheria of Wintun Indians; Grindstone Indian Rancheria of Wintun-Wailaki; Yocha Dehe Wintun Nation; Paskenta Band of Nomlaki Indians; Mechoopda Indian Tribe; and Estom Yumeka Maidu Tribe of the Enterprise Rancheria. Only two out of the seven tribes responded in 2017 and subsequently, the same two tribes in 2019 and 2020. In November and December of 2020, the Project proponents attempted to notify all seven Tribes due to Project changes. Five out of seven Tribes that did "not respond" as stated in Table 23-2 "Summary of AB 52 Consultation" either had "no email available" and/or the "tribal office phone did not take messages." Even though "follow-up" emails were sent, there was no indication at any time that the Authority received "receipt of confirmation" from the five out of the seven Tribes that did not respond.	
72-134	The same could be said about the outreach letter sent to seven additional Tribes by the Sites Project Authority in June 2021. The "seven additional Tribes with traditional and cultural affiliation to [where] the river reaches [that] were identified within these areas operations" included: Wintu Tribe of Northern California, Redding Rancheria, Konkow Valley Band of Maidu, United Auburn Indian Community of the Auburn Rancheria, Shingle Springs Band of Miwok Indians, Ione Band of Miwok Indians, and Wilton Rancheria. According to Table 23-3 "Additional Outreach to California Native American Tribes" all seven tribal responses were listed as "None" or non-responsive. Reasons listed for not responding included: "unsuccessful attempt to email"; "no email or phone number provided on website"; and "left a message on answering machine." Regardless of whether or not the Tribes received a "follow-up" email, there was no indication by the Authority once again that they received "receipt of confirmation" from all seven additional Tribes.	Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the Authority's AB 52 methodology and timeline for contacting tribal members and representatives and ongoing engagement efforts.
72-135	There is no record of the Winnemem Wintu Tribe being asked for consultation, despite their stated interest in this Project. While federal laws	Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, and Chapter 23, Tribal Cultural Resources, regarding the

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	do not mandate consultation with non-federally recognized Tribes, California AB 52 does. California Government Code section 65352.4 defines "consultation" as "'the meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement. Consultation between government agencies and Native American tribes shall be conducted in a way that is mutually respectful of each party's sovereignty. Consultation shall also recognize the tribes' potential needs for confidentiality with respect to places that have traditional tribal cultural significance." [Footnote 129: Emphasis added.] Tribal Consultation by the Sites Project Authority has not been "mutually respectful" in its attempt to contact Tribes, and its inadequate attempts at "Tribal Outreach" should not be dismissed.	regulatory requirements of AB 52. The Authority has complied with AB 52 requirements. Please refer to Master Response 7 regarding the Authority's methodology and timeline for contacting tribal members and representatives and ongoing engagement efforts. The Authority received comments on the 2017 Draft EIR/EIS in a letter submitted on behalf of the Pacific Coast Federation of Fisheries Associations, Institute for Fisheries Resources, Save California Salmon, the Winnemem Wintu Tribe, and San Francisco Baykeeper. Responses to these comments can be found in Volume 3, Appendix 4A, Reclamation Responses to 2017 Draft EIS Comments.
72-136	Making phone calls or sending emails to unspecified people at Tribes at the height of a pandemic does not constitute Tribal consultation or even an attempt to pursue meaningful dialogue. Since the release of the RDEIR/SDEIS, at least two Tribes have commented at public forums that they have not been consulted, or even notified of this Project. Both the Yurok Tribe and Save California Salmon have commented at public meetings or calls with the Sites Project Authority that they are concerned that Tribes are not being invited to meetings.	Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the methodology and timeline for contacting tribal members and representatives and ongoing engagement efforts.
72-137	The Project proponent's engagement with the Yurok Tribe and their subsequent involvement in stakeholder meetings led to changes in the Project, which shows the importance of both formal and informal consultation. Furthermore, there are many more Tribes that will be directly impacted by this Project who, as indicated in the RDEIR/SDEIS, have not been engaged or contacted by any means. These include several within the Bay Area and surrounding locations.	The Authority and Reclamation have performed outreach to all tribes traditionally and culturally affiliated with the Project area. Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the tribes that the Authority and Reclamation have engaged with, as well as ongoing engagement efforts.

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72-138	Overall, the substantial amount of non-responses from Tribes due to the incomplete outreach process indicates that tribal consultation for the Project is inadequate. Therefore, the Coalition believes that any further progress on this Project should be remitted until true, proper, and meaningful tribal consultation is complete.	Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the Authority's AB 52 methodology and timeline for contacting tribal members and representatives and ongoing engagement efforts.
72-139	G. Impacts to Climate Change. The RDEIR/SDEIS fails to adequately analyze the impacts of greenhouse gas (GHG) releases from the project, the influence it will have on climate change, or how these factors will have negative environmental justice impacts. Given that the project's lead agency under NEPA is inherently a federal agency, it stands that current federal policies are to be considered in project planning including those of the Council on Environmental Quality whose current NEPA guidance supports the need for thorough review of GHG emissions and climate change impacts stemming from any project funded or approved by federal agencies. [Footnote 130: Council on Environmental Quality, "National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions," February 19, 2021, https://www.federalregister.gov/documents/2021/02/19/2021-03355/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions.] Relevant to that, current federal policy put forth by Executive Order (EO) 13990 [Footnote 131: Executive Office of the President, "Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis," January 25, 2021, https://www.federalregister.gov/documents/2021/01/25/2021-01765/protecting-public-health-and-the-environment-and-restoring-science-to-tackle-the-climate-crisis.] states that "…the Federal Government must be guided by the best science and be protected by processes that ensure the integrity of Federal decision-making." Given this guidance and all guidance or requirements needed	Chapter 28, Climate Change, summarizes modeling results associated with climate change and climate change effects. The modeling results and the modeling used for analyzing climate change are provided in Appendix 28A, Climate Change, which include the effects of climate change on future precipitation as reflected in the revised 2035 Central Tendency (CT) results and the modeled Water Storage Investment Program (WSIP) 2070 results (provided as part of the Final EIR/EIS). Chapter 28, Section 28.3, Methods of Analysis, describes the methods used to evaluate potential effects associated with climate change. The analysis is based on the Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, released by CEQ on August 5, 2016 (Council on Environmental Quality 2016). The 2016 guidance indicates that NEPA analyses should consider (1) the potential effect of the proposed action on climate change by assessing GHG emissions and (2) the effects of climate change on the proposed action and its environmental impacts. Chapter 21, Greenhouse Gas Emissions, quantifies potential greenhouse gases (GHGs), as described in Section 21.3, Methods of Analysis, which evaluates impacts related to GHG emissions on the basis of consistency with established statewide GHG reduction goals, including Senate Bill (SB) 32, Executive Order (EO) S-3-05, and EO B-55-18. The GHG reduction goals are based on scientific consensus on the GHG emissions reduction needed to avert the worst effects of

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	additionally under CEQA, the RDEIR/SDEIS fails to adequately address the impact the project will have on GHG emissions, climate change, or environmental justice (EJ).	climate change. The CEQA Guidelines provide that a lead agency may consider a project's consistency with the State's long-term climate goals or strategies in determining the significance of impacts (CEQA Guidelines Section 15064.4[b][3]). Because of the need for carbon neutrality and in the absence of an established quantitative GHG emissions threshold or climate action plan that is applicable to Alternatives 1, 2, and 3, the impact analysis bases its determinations of significance upon a net-zero threshold and consistency with EO B-55-18. A net-zero threshold is not required, but the Authority has conservatively elected to define a significant GHG impact as any increase in emissions above baseline conditions. The net-zero threshold approach is conservative and is in line with current scientific evidence that points to the need to achieve carbon neutrality by midcentury to avoid the most severe climate change impacts. Chapter 28, Climate Change, used Council on Environmental Quality and NEPA guidance to frame the analysis. Specifically, Section 28.3, Methods of Analysis, describes that the following guidance was used: Council on Environmental Quality released the Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews. Chapter 30, Environmental Justice and Socioeconomics, acknowledges that air quality and GHG emissions would substantially disproportionately affect environmental justice communities and that mitigation would not fully reduce effects, as due to a likely increase in emissions that would occur in the vicinity of the Project as described in Chapter 20, Air Quality.
72-140	Chapter 21. Greenhouse Gas Emissions. Within the table summaries of Chapter 21, clear evidence is immediately presented that any and all of the action alternatives will have a Significant Impact/Substantial Adverse Effect during the construction phase. Similarly, a	The Authority and Reclamation have disclosed all physical environmental impacts that are significant prior to mitigation in the RDEIR/SDEIS. Pursuant to CEQA, the Authority will approve a preferred alternative and prepare findings and a statement of

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	Significant Impact/Adverse Effect is expected during the operations phase. These impacts should not be taken lightly in the face of the current global climatic disaster we are facing and the current list of project activities do not appropriately account for the associated GHG emissions that will come from disturbed natural areas impacted by the reservoir's existence, GHG emissions from changes in the water-level, and other sources of GHGs that will further discussed below.	overriding considerations for all impacts determined to be significant and unavoidable. The Authority will also adopt a mitigation monitoring and reporting program for all impacts requiring mitigation to reduce the significance to less-than-significant levels. All necessary mitigation will be adopted by the Authority, as required by CEQA. Consistent with NEPA requirements, Reclamation will identify a preferred alternative in the Final EIS and issue a Record of Decision identifying the effects on the physical, natural, and human environment.
72-141	As referenced earlier, EO 13990 requires that the Federal Government must be guided by the best science. The latest science shows that storage reservoirs significantly contribute to GHG emissions. [Footnote 132: John A. Harrison et al., "Year-2020 Global Distribution and Pathways of Reservoir Methane and Carbon Dioxide Emissions According to the Greenhouse Gas from Reservoirs (G-Res) Model," Global Biogeochemical Cycles no. 6, no. e2020GB006888 (2021).] Based on the latest 2020 study by Harrison et al., data suggest that more methane (CH4) bubbles come from storage reservoirs that was previously known through the processes of degassing and ebullition. This includes bubbling directly out of the reservoir and bubbling that is emitted downstream of a reservoir. This is further supported by a 2017 study conducted by Beaulieu et al. which states that "…water-level drawdowns [of reservoirs] can stimulate ebullitive CH4 flux in reservoirs…, thereby establishing a connection between water-level management and CH4 emissions." [Footnote 133: Jake J Beaulieu et al., "Effects of an Experimental Water-Level Drawdown on Methane Emissions from a Eutrophic Reservoir," Ecosystems (New York, N.Y.) 21, no. 4 (2018): 657-74, https://doi.org/10.1007/s10021-017-0176-2.] Additional studies or text that also support the connection between CH4 emissions and changes in reservoir water levels include Deemer et al. 2016 [Footnote 134: Bridget	The commenter is correct that reservoirs can contribute to global GHG emissions. This fact is acknowledged in Section 21.3.1.2, Land Use Change, in Chapter 21, Greenhouse Gas Emissions, of the RDEIR/SDEIS, which goes on to note that a quantification of these emissions requires "a detailed accounting of local and site-specific variables." Although such a detailed accounting is not currently possible, for the Final EIR/EIS, the Authority and Reclamation have evaluated the estimated potential emissions from land use conversion using high-level methods and non-site-specific information, which are included in Appendix 21A, Greenhouse Gas Support Appendix, of the Final EIR/EIS. Estimated emissions in Appendix 21A do not affect the impact significance conclusions in Chapter 21 because the land use conversion emissions are included in the net-zero commitment for the Project. The Authority and Reclamation have committed to meeting net-zero emissions, so the addition of the emissions presented in Appendix 21A expands the magnitude of the commitment required to achieve net zero. As noted in the RDEIR/SDEIS, however, the actual emissions quantities to be reduced will be determined on an ongoing basis using more refined data and

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	R. Deemer et al., "Greenhouse Gas Emissions from Reservoir Water Surfaces: A New Global Synthesis," BioScience 66, no. 11 (November 1, 2016): 949-64, https://doi.org/10.1093/biosci/biw117.], Beaulieu et al. 2016 [Footnote 135: Jake J. Beaulieu, Michael G. McManus, and Christopher T. Nietch, "Estimates of Reservoir Methane Emissions Based on a Spatially Balanced Probabilistic-Survey," Limnology and Oceanography 61, no. S1 (2018): S27-40, https://doi.org/10.1002/lno.10284.], Harrison et al. 2017 [Footnote 136: John A. Harrison et al., "Reservoir Water-Level Drawdowns Accelerate and Amplify Methane Emission," Environmental Science & Technology 51, no. 3 (February 7, 2017): 1267-77, https://doi.org/10.1021/acs.est.6b03185.], and the 2017 technical report from the World Bank [Footnote 137: World Bank, "Greenhouse Gases from Reservoirs Caused by Biogeochemical Processes" (December 2017), https://doi.org/10.1596/29151.]. Aside from the bubbling of CH4 that contributes this GHG, the scientific literature also suggests that sediment trapping and composition can lead to eventual hot and low spots in a reservoir. [Footnote 138: Stephan Hilgert, Cristovão Vicente Scapulatempo Fernandes, and Stephan Fuchs, "Redistribution of Methane Emission Hot Spots under Drawdown Conditions | Elsevier Enhanced Reader," 2019, https://doi.org/10.1016/j.scitotenv.2018.07.338.] Beyond that, it is well known within the science community that methane releases are a significant concern related to greenhouse gasses and accounts for about 20 percent of global emissions. [Footnote 139: EPA, "Importance of Methane," 2021, https://www.epa.gov/gmi/importance-methane.] The Sites Project Authority and the USBR do not analyze or disclose the impacts GHG emissions from reservoir releases at all despite numerous recent studies analyzing reservoir emissions and federal and state regulations and guidance of the issue of GHGs. In the case of Sites, there is good reason to conclude that the operation of the Project will lead to significant GHG	not based on the quantities in the RDEIR/SDEIS, or Appendix 21A. Thus, the Authority will reduce these emissions per Mitigation Measure GHG-1.1 through a variety of means, including onsite measures, offsite measures or projects, and/or GHG or carbon credits. Because Mitigation Measure GHG-1.1 applies to the land use conversion emissions and all other Project emissions disclosed in Chapter 21, the Project would result in net-zero emissions, and GHG impacts would remain less than significant. It should also be noted that the GHG emissions presented in Appendix 21A do not account for activities that would potentially sequester carbon, such as activities associated with Project implementation or implementation of Project mitigation measures. The analysis represents a conservative assessment of emissions because it does not currently account for potential carbon sequestration activities that would result from implementation of the Project, such as offsite Project activities and Project features, or mitigation measures identified for other resource areas that may affect land use changes. Readers should note these considerations when reviewing the appendix and the emissions values and be aware that it is not possible at this time to provide a comprehensive accounting of emissions sources and sinks affecting land use-related emissions. As such, the focus of Appendix 21A is on the net increase in emissions resulting from the change in land use in the inundation area, but there are other activities, features, and/or mitigation measures that may result in an emissions benefit but are not currently accounted for.

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	emissions in the form of methane due to its location, shallow nature, and polluted source water. Additionally, newer reservoirs are also considered to be sources of methane gas.	
72-142	Moving away from the reservoir itself, the currently planned Mitigation Measure GHG- 1.1 fails to integrate ongoing local, state, national, and global efforts that are working diligently to significantly reduce GHGs. Additionally, the mitigation measure presented has several faults in the logic and approach: -The measure assumes that the associated plan and actions will meet the goal of reducing and GHGs. -The measure assumes that operations emissions are reduced over time by relying on the electric power sector having successfully transitioned to more renewable energy sources all while the Project proponents do not make a guarantee that they will ensure that GHG emissions are completely mitigated. -The measure proposes that the Project may bank credits for the following year of construction and/or operations if emissions are lower than expected during a given year when all actions taken by any federal agency (see EO referenced above) or project should be doing its part to reduce GHG in the first place.	The commenter's statement that Mitigation Measure GHG-1.1 does not integrate ongoing local, state, national, and global efforts does not accurately reflect the analysis or context of the mitigation measure. The estimate of Project emissions, which is the basis for the mitigation measure, accounts for state and national emissions standards that reduce the emissions intensity of vehicles and equipment used during Project construction and operations. By quantifying emissions through methods consistent with the statewide-accepted modeling approach (CalEEMod), the analysis accounts for state and national regulations for onroad vehicles and offroad engines. Further, the comment does not suggest any local, state, national, or global efforts to reduce GHGs that could be applied to the Project and are not included in Mitigation Measure GHG-1.1. The mitigation measure, in fact, incorporates many such efforts as described in Section 21.4, Impact Analysis and Mitigation Measures (Impact GHG-1), of Chapter 21, Greenhouse Gas Emissions. With respect to global efforts to reduce GHGs, the mitigation includes measures (such as tree planting) that have been used in other countries; the measure does not, however, allow the Project to rely on any carbon credits generated outside the United States due to uncertain enforceability of protocols for credits generated in other countries. As the commenter notes, the analysis also accounts for increased renewable energy generation, as mandated by California SB 100, in the quantification of emissions from the electric sector. The renewable

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		energy requirements legislated by SB 100 will be applicable to the electricity that will be used by the Project. Consequently, all electricity purchased by the Authority and Reclamation will be subject to increasingly stringent renewable energy requirements. The RDEIR/SDEIS requires reduction of the Project's GHG emissions to net zero and identifies prioritized measures to meet that goal—first onsite, second offsite in local communities, third within the Sacramento Valley Air Basin, fourth within the State of California, and fifth within the United States. Yearly emission factors for electricity consumption were calculated based on the specific SB 100 requirements for renewable energy sales in each year. The targets are mandated by law, and, as has been the case with earlier renewable energy mandates, it is anticipated that the power providers in the state will meet the mandated targets. Accounting for increased renewable energy penetration in the quantification of electricity emissions therefore accurately forecasts anticipated Project-generated emissions from the consumption of future electricity. The electric power sector's transition to more renewable energy sources is not a mitigation measure and is not mentioned in Mitigation Measure GHG-1.1. Instead, the RDEIR/SDEIS correctly notes that the Project's GHG emissions related to water conveyance would peak in 2030 and decline thereafter due to the electric power sector's increased use of renewable energy sources (see the Alternative 1, Operations section of Impact GHG-1 in Chapter 21). Beyond federal and state regulations, Mitigation Measure GHG-1.1 requires local offsite measures as a second priority (after onsite measures) to achieve net-zero emissions. With these offsite measures, the Authority will utilize existing local and regional programs to sponsor emissions-reducing projects in communities in the Project

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		vicinity. The Authority may work with the air pollution control districts, local municipal governments, school districts, etc., to bolster existing programs and implement the emissions-reducing projects. As such, the RDEIR/SDEIS and Mitigation Measure GHG-1.1 comprehensively account for multiple levels of governance and planning efforts with respect to GHG emissions (e.g., national, state, local). The commenter correctly notes that the RDEIR/SDEIS concludes that the GHG reduction plan described in Mitigation Measure GHG-1.1 will meet the goal of net-zero emissions. The mitigation measure does not simply assume that its implementation will reduce GHG emissions. Instead, it explains why the concrete mitigation actions identified in Impact GHG-1 will reduce such emissions. The mitigation measure text in Section 21.4, Impact Analysis and Mitigation Measures (Impact GHG-1), in Chapter 21 of the RDEIR/SDEIS outlines comprehensive substantiation detailing how net-zero emissions will be met. The monitoring and reporting requirements require that the Authority retain a third-party expert to assist with review and approval of annual reports for verification purposes. The annual reports will describe the strategies that were implemented to achieve emissions reductions and will ensure that the net-zero goal is achieved with full transparency. Because of the ongoing monitoring that is mandated by Mitigation Measure GHG-1.1, the total amount of required reductions will be informed by actual emissions monitoring (rather than an estimate). This emissions monitoring ensures that Project-level benefits achieved by federal- or state-mandated regulations, such as SB 100, are accurately reflected in the actual mitigation obligation at the time of implementation, thus negating the commenter's concern that the Authority is relying on future (and potentially uncertain) reductions.

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		The comment indicates that even by mitigating its GHG impacts to zero through onsite and offsite measures, the Project would not be doing its part to reduce GHG emissions. Under CEQA and NEPA, however, a proposed project only needs to identify or consider mitigation for its own impacts, not for the GHG impacts of other projects. Through mitigation to net zero, the Project would not contribute to the cumulative impacts of GHG emissions from other projects. As noted by the commenter, the Authority may use GHG reduction credits and "bank" them to achieve the net-zero goal. This is an acceptable approach to mitigating GHG impacts on the global atmosphere. As discussed in Section 21.1, Introduction, in Chapter 21 of the RDEIR/SDEIS, climate change is a global problem, and GHGs are global pollutants. Some GHGs can reside in the atmosphere for thousands of years, becoming well-mixed and transported internationally. For this reason, achieving a 1 metric ton reduction in GHGs in California in 1 year is functionally equivalent to a 1 metric ton reduction in GHGs anywhere else in the world the year prior or the following year. If the Project results in excess reductions in 1 year such that emissions are net negative in that year, applying the excess reductions to the subsequent year does not reduce the total mitigation obligation of the Project. Mitigation Measure GHG-1.1 outlines specific and enforceable standards to obtain carbon credits in the full amount identified by the reporting process. For years when GHG credits are purchased, the reports will include credit retirement verification, and the reports will be viewable by the public. The use of credits to mitigate impacts, as well as the banking of those credits, is consistent with CEQA Guidelines section 15126.4(c)(3), which states

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		that mitigation measures for GHG emissions may include "offsite measures, including off-sets that are not otherwise required, to mitigate a project's emissions." Under NEPA, an EIS must identify relevant, reasonable mitigation measures not already included in the proposed action or alternatives to the proposed action that could avoid, minimize, rectify, reduce, eliminate, or compensate for the project's adverse environmental effects (40 C.F.R. § 1508.20).
72-143	Beyond the construction and operations, claims made in Chapter 21 about Recreational Vehicles Trips are also faulty in their logic. During a time where public interest in outdoor recreation opportunities is continuously growing [Footnote 141: Patricia L. Winter et al., "Outdoor Recreation, Nature-Based Tourism, and Sustainability," Sustainability 12, no. 81 (2020).] and was accelerated by the COVID-19 pandemic, claiming that less visitors will travel to existing reservoirs is immensely flawed. The construction of another reservoir would likely increase the amount of Recreational Vehicle Trips and contribute to GHG emissions.	The commenter notes that "the construction of another reservoir would likely increase the amount of Recreational Vehicle Trips and contribute to GHG emissions." It is correct that there will be recreational visitors traveling to the reservoir; however, as noted in Section 21.3.2.3, Recreational Areas, of Chapter 21, Greenhouse Gas Emissions, in the RDEIR/SDEIS, some of these visitors use existing reservoirs and would instead use Sites Reservoir. As shown in Table 18-18 and Table 18-19 in Chapter 18, Navigation, Transportation, and Traffic, of the RDEIR/SDEIS, there would be a net negative change in daily vehicle miles traveled (VMT) for most population centers. Although there would be a net increase in daily VMT for new recreational trips within 25 miles of the reservoir, the overall net effect of the Project would be a net decrease in VMT. The reason for the net decrease in VMT is that visitor trips to Sites Reservoir would, overall, be shorter than to the reservoirs visitors are currently using. Finally, the statement that public interest in outdoor recreation opportunities is continuously growing and has been accelerated by the COVID-19 pandemic does not conflict with the assumptions or conclusions of the RDEIR/SDEIS. The construction of Sites Reservoir results in a net decrease in VMT because of the reservoir's location relative to existing reservoirs and regional population centers. If there is increased demand for outdoor recreation at reservoirs in the future,

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		the net decrease in VMT would increase in magnitude (i.e., become more negative) if Sites Reservoir exists because Sites Reservoir has a trip-shortening effect relative to existing reservoirs. GHG emissions from visitor trips would generally correlate to the decreasing VMT.
72-144	Chapter 28. Climate Change. As discussed earlier, the fact that several assumptions are made about GHG emissions, their mitigation, and lack of proper assessment, the fact that GHGs will be an issue conversely poses an issue in terms of climate change. It goes without saying that GHGs contribute to climate change. Unfortunately, the building of a reservoir will contribute GHGs and essentially create a negative feedback loop. The likely constant flux of water storage, low water years, aquatic area for HABs to grow, and resulting reduced potential in carbon storage in the land will all exacerbate climate change impacts.	Chapter 21, Greenhouse Gas Emissions, addresses GHG emissions from the Project's construction and operations. As noted in Chapter 21, "Construction emissions total to 348,648 to 351,362 metric tons of CO2e depending on the alternative and variant of the Project. Annual operational emissions could be a maximum of 72,736 metric tons CO2e, which corresponds to Alternative 1A, but are expected to continually decrease in future years as the electric power sector transitions to more renewable sources of energy. " Land use change emissions result from converting the inundation area to flooded land. These emissions would occur within the first 20 years of the land being converted to a reservoir. Twenty years after inundation, the annual emissions would decrease as the reservoir approaches a steady state. The Authority will implement Mitigation Measure GHG-1.1 to mitigate these emissions to net zero through a GHG reduction plan. This measure ensures that construction and operations emissions would not result in a significant cumulative contribution to impacts on global climate change, because the net emissions from construction and operations would be net zero with Mitigation Measure GHG-1.1.
72-145	Chapter 30. Environmental Justice and Socioeconomics. In addition to pushing for the use of best science, EO 13990 is only one of many federal Executive Orders [Footnote 142: Executive Office of the President, "Executive Order on Tackling the Climate Crisis at Home and Abroad," January 25, 2021, https://www.energy.gov/nepa/articles/eo-14008-tackling-climate-crisis-home-and-abroad-2021.] requiring agencies to not	Reclamation has considered environmental justice impacts pursuant to the methods of analysis described in Chapter 30, Environmental Justice and Socioeconomics. As described in Section 30.3, Methods of Analysis, the methodology is based on multiple guidance documents, including federal executive orders described in Appendix 4A, Regulatory Requirements. Table 32-8 in Chapter 32, Other Required Analyses, and Table ES-2 in the Executive Summary acknowledge

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	only consider, but prioritize Environmental Justice (EJ) as part of agency actions. That said, the summary tables of Chapter 30 explicitly note that any and all of the action alternatives will have a Substantial Adverse Effect on Minority Populations and Low-Income Populations. In addition, the summary tables also outline that even with Mitigation Measures that are currently considered, EJ impacts will not be fully reduced. If this is the case for identified effects, then any unidentified effects will surely not be mitigated at all. In a time where there is a racial and social reckoning occurring, EJ considerations for such an impactful Project should not only be properly assessed, they should be prioritized in the RDEIR/SDEIS.	certain effects that would be reduced with mitigation incorporated (e.g., vegetation) for certain alternatives; however, they also acknowledge that some effects cannot be mitigated to levels below substantial and adverse, and therefore the NEPA conclusion is described as substantial and adverse. Please see Chapter 28, Climate Change, for a discussion of potential climate change effects.
72-146	Chapter 31. Cumulative Impacts. While there is a list of several planning documents that were reviewed as part of the RDEIR/SDEIS, there is no mention of any state legislation or international climate change guidance. As such, the Coalition assumes the RDEIR/SDEIS does not consider the cumulative impacts of GHG emissions, climate change, or environmental justice. This requires significant attention and the Coalition requests the Project proponents address this issue in a revised RDEIR/SDEIS.	Chapter 31, Cumulative Impacts, discusses the cumulative effects associated with GHG emissions. As mentioned in that chapter, climate change, as well as GHG emissions, are inherently cumulative. Chapter 31 also discusses the cumulative impacts on environmental justice. Climate change is separately addressed in Chapter 28, Climate Change. Environmental justice is addressed in Chapter 30, Environmental Justice and Socioeconomics.
72-147	Chapter 14. Land Use. When considering the concept of land conversion and its contribution to climate change, there is significant and well-known evidence that conversion of natural or working lands (NWL) plays a major role in the climatic changes we are facing across the globe. With this in mind, RDEIR/SDEIS Chapter 14, Consistency with Land Use and Zoning Designations states: "In Glenn County, the existing land use designations and zoning...are Foothill Agriculture/Forestry and Intensive Agriculture, neither of which specifically allows the	Chapter 21, Greenhouse Gas Emissions, describes the potential for GHG emissions to occur as a result of land conversion. Appendix 21A, Greenhouse Gas Support Appendix, has been added to the Final EIR/EIS and quantifies the potential for GHG emissions to result due to land conversion. This additional GHG analysis found that while the newly quantified land use change emissions did add to the potential quantity of emissions the Authority would need to reduce, it does not change the Authority's net zero emissions commitment. Therefore, the significance conclusion would remain the same as stated in Chapter 21.

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	construction of a reservoir and associated facilities. The County of Glenn may need to amend its general plan." Not only does this acknowledge that NWL, which have potential to store carbon, are being converted into a different land use type, but that the current local planning guidance in one of the counties of the Project area does not support the construction of the Project or its related facilities.	Amendments to General Plan land use designations or zoning typically occur at the local level depending on the nature or types of projects that may be constructed or operated within a county or city. This is a typical process that is not unusual or unforeseen. General plans describe land uses that may be compatible with one another in various locations; they are also planning guidance documents meant to be reviewed and amended if needed and as required. Chapter 14, Land Use, acknowledges amendments to land use designations or zoning may need to occur, which is a typical practice with standard procedures in place in all counties within the study area, including Glenn County (Glenn County, Planning and Public Works Agency 2012).
72-148	V. The National Wild and Scenic Rivers Act (NWSRA) requires federal agencies to consider potential wild, scenic, and recreational river areas in all basin and project plan reports and to evaluate this potential as alternative uses of the water. Section 5(d)(1) of the NWSRA states: In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potentials. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved. In plain language, this means that rivers and streams that may be impacted by water resource projects should be assessed for their potential as	As noted by the commenter, a portion of the Sacramento River was previously reviewed and identified by Reclamation as potentially Wild and Scenic. No reach of the Sacramento River is designated Wild and Scenic, nor is any other stream that could experience changes in flows within the CVP or SWP system as part of the Project other than the segment of the lower American River from Nimbus Dam to the Sacramento River (see Table 16-2 in Chapter 16, Recreation Resources). This segment (and all others addressed in the document not designated as such and potentially affected by the Project), would not experience changes that would result in effects to typical outstanding and remarkable characteristics. No other rivers outside of the Sacramento River Watershed would be affected by the Project (e.g., San Joaquin River).

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	nationally protected wild and scenic rivers and that this protection should be considered as an alternative to water resource development. In passing the NWSRA in 1968, it was the stated intent of Congress to "complement" the nation's existing national policy of dam building with a new policy to protect for the benefit and enjoyment of present and future generations certain selected free-flowing rivers with outstanding remarkable scenery, recreation, geology, fish, wildlife, history, and cultural values. The NWSRA was and continues to be an important balance to ensure that some free-flowing rivers are protected for their outstanding natural and cultural values, water quality and other vital national conservation purposes. [Footnote 143: National Wild and Scenic Rivers Act, sec. 1(b).] There is significant precedent for the implementation of this legal requirement, including: -San Joaquin River Gorge - In 2014, the Bureau of Land Management (BLM) completed a section 5(d)(1) wild and scenic river evaluation of the San Joaquin River Gorge in response to a proposal to build the Temperance Flat Dam. The BLM found an 8-mile segment of the Gorge to be eligible for NWSRA protection and recommended to Congress that the river should added to the federal system. This was in tandem with the Bureau of Reclamation's proposed study of the Temperance Flat Dam and Congress' consideration of authorization and funding for the dam. [Footnote 144: Bakersfield Resource Management Plan & Record of Decision, BLM, December 2014.] -North & Middle Forks American River - In 1993, the Bureau of Reclamation completed a section 5(d)(1) wild and scenic river evaluation of the North and Middle Forks American River in conjunction with their study of the proposed Auburn Dam.	

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	Reclamation headed up a multi-agency team that also included the BLM, California Dept. of Parks and Recreation, U.S. Forest Service, and the USFWS, which found 44 miles of the North and Middle Forks to be eligible for NWSRA protection. This eligibility decision was considered when Congress debated authorization of the proposed Auburn dam, ultimately rejecting the project three times. [Footnote 145: Determination of Wild and Scenic Eligibility of Segments of the American River, Bureau of Reclamation, Mar. 1993.] -Sacramento River - In 1993, the BLM completed a section 5(d)(1) wild and scenic river evaluation of the Sacramento River between Balls Ferry and Red Bluff. The agency found a 25-mile segment of the river to be eligible due to its outstanding remarkable scenery, recreation, fish, history, culture, and ecological values. [Footnote 146: Redding Resource Management Plan & Record of Decision, BLM, June 1993.] In 1975, the U.S. Army Corps of Engineers ("USACE") completed a section 5(d)(1) wild and scenic river evaluation of the Sacramento River from Keswick Dam to Sacramento because the agency was considering several water resource projects that could impact the river. Perhaps because the USACE evaluation was conducted prior to the adoption of detailed federal guidelines concerning the evaluation and management of wild and scenic rivers,	

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	the 1975 document failed to come to any conclusions about the river's eligibility, but it did identify the significant natural values of several segments of the river. [Footnote 147: Wild, Scenic, and Recreational Characteristics Sacramento River, Calif., Keswick Dam to Sacramento, US Army Corps of Engineers, August 1975.] In 1983, the National Park Service completed the Nationwide Rivers Inventory, which was intended to identify potential NWSRA candidates. The 1982 inventory and the current NRI both identify a 96 mile segment of the Sacramento River between Redding and Colusa as a potential candidate for NWSRA protection, due to the river's outstanding scenery, recreation, fish, wildlife, and ecology values. [Footnote 148: https://www.nps.gov/maps/full.html?mapId=8adbe798-0d7e-40fb-bd48-225513d64977] In response to the NWSRA section 5(d)(1) mandate, federal agencies such as the Forest Service, BLM, National Park Service, and even the USBR have identified nearly 2,700 miles of rivers and streams as eligible for NWSRA protection. Several federal actions warrant evaluation of the Sacramento River's NWSRA eligibility, including adoption of federal guidelines outlining in detail how to conduct section 5(d)(1) studies, establishment of the Sacramento River National Wildlife Refuge (SRNWR) by the USFWS (which includes 30 properties along the Sacramento River between Red Bluff and Colusa totaling 10,353 acres), and the proposal to divert significant amounts of freshwater from the Sacramento River to fill the proposed Project. Establishment of the SRNWR complements the efforts of non-federal agencies to protect and restore riparian habitat along the Sacramento River between Red Bluff and Colusa, including the 3,900-acre Sacramento River	

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	Wildlife Area managed by the California Department of Fish and Wildlife, three state parks on the river managed by the California Department of Parks and Recreation, and on-going efforts by NGOs to acquire and restore riparian habitat. Altogether, there are more than 38,000 acres of protected conservation lands along the Sacramento River between Redding and Colusa, much of the federal lands managed by the BLM and USFWS. It is important to note that NWSRA protection would not necessarily prohibit the diversion of freshwater from the Sacramento River by the proposed Sites Reservoir. It would require that such diversions do not harm the free-flowing condition of the river and its outstanding remarkable natural and cultural values. Rivers can be deemed "free-flowing" even if their flows are modified by upstream dams and instream diversions -- as long as the sufficient flow remains in the river to maintain its specific outstanding values. Several factors require a section 5(d)(1) NWSRA evaluation of the Sacramento River at this time. They include: -Both the BLM and the USFWSR manage federal public lands along the Sacramento River between Redding and Red Bluff; -Federal funds may be used to construct the Sites Project and federal funds have and will continue to be used to acquire, protect, and restore riparian and aquatic habitat along and in the Sacramento River; -The Bureau of Reclamation is the federal partner in the proposed Sites Reservoir Project, and; -Flows in this reach of the river could be modified by Sites diversions in a manner that	

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	adversely affects the river's free-flowing condition and outstanding values. These factors unambiguously require compliance with NWSRA section 5(d)(1). The RDEIR/SDEIS must be withdrawn and revised to include a NWSRA section 5(d)(1) study of the Sacramento River.	
72-149	VI. The RDEIR/SDEIS is deficient because it does not provide adequate mitigation for environmental impacts and is missing critical information, therefore recirculation of a Revised EIS/EIR is required. Due to the previously described deficiencies, and resulting RDEIR/SDEIS failure to disclose environmental impacts from the project and project alternatives, the NGO coalition believes that recirculation of a revised RDEIR/SDEIS is legally required. [Footnote 149: See, e.g., Vi[ne]yard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova, 40 [C]al.4th 412, 447-449 (2007).] VII. Conclusion. Thank you for the opportunity to comment on the RDEIR/SDEIS for the proposed Sites Reservoir Project. Due to the multiple failures and deficiencies described in these comments, the NGO Coalition requests that the Sites Project Authority revise and recirculate the RDEIR/SDEIS to the public.	Please see responses to comments 72-3 through 72-148 regarding detailed comments related to mitigation for environmental impacts, as well as responses pertaining to the commenter-identified deficiencies. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding requirements for recirculation.
72-150	[Attachment 1] Sites Reservoir DEIR/DEIS Comments by Friends of the River, Sacramento River Preservation Trust, and Sierra Club Mother Lode Chapter (January 15, 2018)	The commenter provided an attachment of their previous comments on the 2017 Draft EIR/EIS. As noted in the Volume 3, Chapter 1, Introduction and Approach to Responses to Comments, Approach section, the RDEIR/SDEIS completely revised the environmental analysis pursuant to CEQA and NEPA to reflect changes to the Project that have occurred since the issuance of the 2017 Draft EIR/EIS. Pursuant to CEQA and given the full recirculation of the EIR, the Authority is not responding to individual and unique comments on the 2017 Draft EIR. Reclamation responses to comments on the 2017 Draft EIS can be found in Volume 3, Appendix 4A, Reclamation Responses to 2017 Draft EIS Comments. Please see Master Response

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		1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the 2017 Draft EIR/EIS.
72-151	[Attachment 2] Sites Reservoir DEIR/DEIS Comments by Natural Resources Defense Council (NRDC), Defenders of Wildlife, The Bay Institute, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, Center for Biological Diversity and Golden Gate Salmon Association (January 15, 2018)	The commenter provided an attachment of their previous comments on the 2017 Draft EIR/EIS. Please see response to comment 72-150 regarding comments on the 2017 Draft EIR/EIS.
72-152	[Attachment 3] Sites Reservoir DEIR/DEIS Comments by NRDC et al. Addendum A	The commenter provided an attachment in support of their previous comments on the 2017 Draft EIR/EIS. Please see response to comment 72-150 regarding comments on the 2017 Draft EIR/EIS.
72-153	[Attachment 4] Sites Reservoir DEIR/DEIS Comments by NRDC et al. Addendum B	The commenter provided an attachment in support of their previous comments on the 2017 Draft EIR/EIS. Please see response to comment 72-150 regarding comments on the 2017 Draft EIR/EIS.
72-154	{Attachment 5] Sites Reservoir DEIR/DEIS Comments by NRDC et al. Addendum C	The commenter provided an attachment in support of their previous comments on the 2017 Draft EIR/EIS. Please see response to comment 72-150 regarding comments on the 2017 Draft EIR/EIS.
72-155	[Attachment 6] Sites Reservoir DEIR/DEIS Comments by California Sportfishing Protection Alliance, AquAlliance and the California Water Impact Network (January 13, 2018)	The commenter provided an attachment of their previous comments on the 2017 Draft EIR/EIS. Please see response to comment 72-150 regarding comments on the 2017 Draft EIR/EIS.
72-156	[Attachment 7] Sites Reservoir DEIR/DEIS Comments by AquAlliance (October 1, 2017)	The commenter provided an attachment in support of their previous comments on the 2017 Draft EIR/EIS. Please see response to comment 72-150 regarding comments on the 2017 Draft EIR/EIS.
72-157	[Attachment 8] Sites Reservoir DEIR/DEIS Comments by the California Department of Fish and Wildlife (January 12, 2018)	The commenter provided an attachment of previous comments by CDFW on the 2017 Draft EIR/EIS. Please see response to comment 72-150 regarding comments on the 2017 Draft EIR/EIS.
72-158	[Attachment 9] Sites Reservoir DEIR/DEIS Comments by the State Water Resources Control Board (January 12, 2018)	The commenter provided an attachment of previous comments by the State Water Resources Control Board on the 2017 Draft EIR/EIS. Please see response to comment 72-150 regarding comments on the 2017 Draft EIR/EIS.

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72-159	[Attachment 10] NGO Coalition Request for a Recirculated Draft Sites Reservoir EIS/EIR (March 17, 2019)	The commenter provided an attachment of their previous Request for a Recirculated Draft Sites Reservoir EIS/EIR. Please see response to comment 72-150 regarding the recirculation of the 2017 Draft EIR/EIS and comments on the 2017 Draft EIR/EIS.
73-1	The primary concern of LAND with respect to the Sites project pertains to potential effects on flows entering the Sacramento-San Joaquin Delta via the Sacramento River. Farmers and other beneficial uses in the Delta rely on these freshwater inflows. Any project that may reduce these flows, or change the timing or temperature of these flows, has the potential to interfere with these downstream uses. The DEIR/S describes bypass flows ranging from 3,250 cubic feet per second ("cfs") to 8,000 cfs at various points where water would be diverted from the Sacramento River to the new reservoir. (DEIR/S, p. 2-31.) Diversion capacity would be 2,100 cfs and 3,000 cfs at the two diversion locations. (DEIR/S, Figures 2-36 and 2-37.) The DEIR/S only presents the simulated reservoir operations and Sacramento flow data as statistical probabilities. The actual simulated daily diversion rates and Sacramento flows at the time of diversion is not disclosed to decision makers and the public. The reader has no way of checking whether diversions are in fact being made during periods of very low river flow and how often. For public review of the project, it is critical to know the values of X2 at the time of each daily diversion.	The Authority and Reclamation appreciate Local Agencies of the North Delta's (LAND's) engagement on the Project. The analysis of the effect of Sites Reservoir diversion to storage focuses on changes in flow patterns. The daily percentage of river flow diverted is not expected to vary greatly from day to day due to restrictions on diversions. As disclosed throughout the document, downstream uses would be protected. As described in Chapter 2, Project Description and Alternatives, Diversion to Sites Reservoir from Sacramento River subsection, diversions to Sites Reservoir storage are only allowed to occur when the Delta is in excess conditions as determined by Reclamation and the California Department of Water Resources and when senior downstream water rights have been satisfied. Further details regarding restrictions on diversions and excess conditions are described in Chapter 2, Project Description and Alternatives; Master Response 2, Alternatives Description and Baseline; Master Response 3, Hydrology and Hydrologic Modeling; Appendix 5A1, Model Assumptions, in the Sites Diversions subsection; and Appendix 5C, Upper Sacramento River Daily River Flow and Operations Model, in Section 2.1.1, Project Intake Operations Assumptions. These restrictions on diversions were implemented in both CALSIM and USRDOM (Upper Sacramento River Daily Operations Model).

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		Statistical summaries of model results are provided in the EIR/EIS instead of 82 years' worth of raw model output in order to provide a synthesis of results and understanding of Project effects. The percent of Sacramento River flow diverted at the Red Bluff Pumping Plant and Hamilton City Pumping Station as simulated by CALSIM is presented by month and water year type in Chapter 11, Aquatic Biological Resources, in Table 11-6 and Table 11-7. Because Sites Reservoir is expected to provide some of the water used by GCID, the percentage of river flow diverted by GCID at Hamilton City in the summer during Dry and Critically Dry Water Year types may be reduced by Sites operations (see Table 11-7). The effect of the Project on X2 values is presented in Chapters 6, Surface Water Quality, and Chapter 11, Aquatic Biological Resources (e.g., see Table 6-16). X2 values were calculated with the DSM2 model at a 15-minute time step, although Project effects are summarized with monthly values. Because the effects of changes in Delta outflow on X2 are muted by a lag between outflow and X2 and because X2 regulations are based on X2 values over periods of time, the monthly assessment of changes in X2 is appropriate to assess Project effects. In addition, please see Master Response 3 for a discussion of the monthly time step used in CALSIM.
73-2	The DEIR/S indicates that a draft of the Reservoir Operations Plan is expected to be completed in late 2021 (DEIR/S, p. 2-42), but it is not clear that has been completed. The lack of a Reservoir Operations Plan hinders the ability of the public to review the potential impacts of the project.	Please see Master Response 2, Alternatives Description and Baseline, regarding the reservoir operations plan.
73-3	In addition, the modeling for reservoir operations does not use hydrologic data beyond 2003. A longer simulation period (e.g., through 2019), would add a further 16 years, potentially revealing recent changes in historical	Please refer to Master Response 3, Hydrology and Hydrologic Modeling, regarding the planning simulation period and time step. Please refer to Chapter 28, Climate Change, for the climate change

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	hydrology due to global climate change. Reservoir operations modeling should also use a daily time step to better reveal flow and water quality impacts. Monthly-averaged flows in the Sacramento River and Delta are not representative of the peak and low flows that can occur within a month.	modeling performed for each alternative under 2035 Central Tendency (CT) (2020–2049) conditions and Water Storage Investment Program (WSIP) 2070 (2046–2085) conditions. Please refer to Master Response 5, Aquatic Biological Resources, which addresses the use of monthly modeling results with different time steps for evaluating flow-related fisheries impacts.
73-4	LAND is also concerned about the cumulative impacts that Sites could have, in conjunction with other projects that propose new diversions on the Sacramento River. One such project is the Delta Conveyance Project or "Delta Tunnel", which is proposed to have the capacity to divert up to 6,000 cfs. Initial information indicates that the Delta Tunnel is proposing bypass flows of as little as 5,000 cfs. Proposed diversions to Sites, combined with Delta Tunnel diversions, could severely reduce freshwater inflows into the Delta and have significant water quality and other negative impacts on beneficial water uses in the Delta. Although the Delta Tunnel is mentioned in DEIR/S Chapter 31 as a cumulative project, there is no analysis of the combined effect on Sacramento River flows and water quality of implementing both Sites and the Delta Tunnel. Quantitative example analyses of the two projects operated together should be prepared to inform the public of the possible cumulative impacts of building and operating Sites and the Delta Tunnel. In addition, the Cumulative Impact chapter does not address increases in water transfers that may occur if both the project and the Delta Tunnel were operated. Such transfers would further reduce freshwater flows through the Delta and should be addressed in the DEIR/S as a reasonably foreseeable cumulative project.	The Department of Water Resources released the Draft EIR for the Delta Conveyance Project on July 27, 2022, with eight action alternatives. The Department of Water Resources will select an alternative when the Delta Conveyance Project Final EIR is published. Publicly available operations criteria (modeled and not modeled) for the Delta Conveyance Project were unavailable during preparation of the RDEIR/SDEIS; therefore, a quantitative analysis of the cumulative effects of implementing both the Project and the Delta Conveyance Project could not be performed. Please refer to Chapter 31, Cumulative Impacts, for a discussion of the regulatory requirements for analysis of cumulative impacts and for a list of considered projects. The Delta Conveyance Project is considered qualitatively in aggregate with other projects in Chapter 31, Section 31.3.1, Surface Water Resources and Water Quality. In Dry and Critically Dry Water Years, the incremental effects of Sites Reservoir on methylmercury concentrations in fish tissue in the Sacramento River at Freeport (north Delta) would be cumulatively significant when added to the impacts from other projects, including the Delta Conveyance Project. Cumulative effects of Sites Reservoir on Delta salinity and related water quality constituents (e.g., chloride) would be less than significant because Project effects on Delta salinity would be minimal (described in Chapter 6, Surface Water Quality), and all projects

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		potentially affecting Delta salinity would be required to provide flow through the Delta that is sufficient for meeting water quality objectives. A change in flow would not by itself represent an environmental impact. Therefore, the effects of changes in flow described in Chapter 5, Surface Water Resources, on environmental resources are evaluated throughout the document in specific resource chapters and subsections of Chapter 31. For example, the effect of changes in Delta flows, including those that may occur as a result of the Delta Conveyance Project, on aquatic biological resources are evaluated qualitatively in Chapter 31, Section 31.3.6, Aquatic Biological Resources. This section describes that reasonably foreseeable projects would have to comply with the terms and conditions of regulatory permits (biological opinions and incidental take permits), which reduces the likelihood of substantial adverse effects to the overall Sacramento River system over its entire geography. Flows in the Sacramento River and Delta are highly altered compared to natural regimes, and they are managed consistent with current regulatory requirements (e.g., 2006 Bay-Delta Water Quality Control Plan, as amended in 2018 (State Water Resources Control Board 2006, 2018), ROC ON LTO BiOps (U.S. Fish and Wildlife Service 2019, National Marine Fisheries Service 2019), and SWP ITP (California Department of Fish and Wildlife 2020)). These managed flows provide essential habitat elements for a variety of species and ecological processes. Any new diversions or ongoing operations that have the potential to affect fish habitat resulting from a change in Sacramento River flow would also be required to operate consistent with regulatory requirements. Flows in the Sacramento River, its major tributaries and flood bypasses, and the Delta are, and will continue to be, managed

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		to meet regulatory objectives, which have been developed to be protective of fish, fish habitat, and ecological processes.
74-1	CIEA is writing to express our opposition to the continuation of the North of Delta Off-stream Storage Sites Reservoir Project. After reviewing the EIR/EIS, CIEA noticed a lack of meaningful consultation with Tribal Peoples within and adjacent the footprint area of the proposed project. We also noticed environmental issues that would affect Tribal People and Californians at large. CIEA asks that you withdraw the proposal and consider consulting meaningfully with Tribes.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives. Please also see Master Response 7, Tribal Coordination, Consultation, and Engagement, for information on how requirements for Tribal coordination and consultation have been met for the Project.
74-2	This project will negatively impact the environment and does not honor Tribal Trust Responsibilities that the federal government has with Tribal Nations established through Treaties and agreements. Tribal Consultation in accordance with California State Assembly Bill 52 (AB-52) is missing from this process and therefore it would not be in good faith to move forward with the proposal. AB52 requires the state to invite and engage in consultation in a meaningful way with Tribes regarding Tribal cultural resources. We understand that Tribes had been invited to engage in consultation but consultation was limited to a few Tribes and there are over 20+ Tribes within and adjacent to the footprint area of the proposed project that had not been asked to offer insight and feedback on the project. Furthermore, it should not be the burden of Tribes to seek meaningful consultation by request when this is something that is required of the state to provide to Tribes. As a result of all the above stated, we ask that the proposal be withdrawn because of noncompliance with AB-52 by the state or at least halted until meaningful consultation takes place with Tribal Nations and members in accordance with AB-52. Not all affected Tribes were outreached to appropriately. Please reach out to all Tribes who utilized the area, all of those whose source water will be utilized to fill the reservoir, and those in the receiving waters though to the Pacific Ocean.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding Tribal coordination and consultation undertaken by the Authority and Reclamation.

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74-3	The proposal would also tip the scales on cost-benefit analysis, giving much more weight to costs to extractive and harmful industries, while ignoring the benefits to species, especially those on the verge of extinction. We know that when we save nature, we save ecosystem services, we protect our environment, our health, and our future generations. Not only are the benefits of withdrawing this proposal better for all than for the few, the state will save money in the long run on correcting environmental impacts that will occur as a result of this proposal. We do not agree with this change and we urge you to withdraw this proposal.	The commenter questions the merits of the Project. Please see Master Response 5, Aquatic Biological Resources, regarding benefits to aquatic biological resources. Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives and the adequacy of the environmental analysis.
74-4	We would also like to mention that aquifers naturally filter and clean. This is a key aspect of proper land management that Tribal Peoples seek to maintain collaborations with state agencies CIEA would like to note that dam water is not clean and is contaminated. The amount of mercury and PCBs found in dam water is unacceptable. We ask you to stop funding projects before EIR and EIS reports are done because of the harmful impacts and Tribes and Tribal entities having not assessed the situation and further environmental impacts. While the San Francisco Bay Area has recently confirmed they have maintained water savings, that is not the case for the agricultural, manufacturing and communities that will be the beneficiaries of this project. Instead of trying to provide more water in these areas, we should be looking to alternatives that conserve and prevent water waste.	Please see Chapter 6, Surface Water Quality, regarding water quality impacts associated with the three alternatives evaluated; polychlorinated biphenyls (PCBs) are not identified as being present. Please see Chapter 8, Groundwater Resources, regarding information on aquifers and potential impacts on groundwater resources. As noted in Chapter 8, impacts on groundwater would either not occur or would be less than significant. Please see Chapter 2, Project Description and Alternatives, for the potential users of Sites Reservoir water. Please see Chapter 22, Cultural Resources, and Chapter 23, Tribal Cultural Resources, for impacts on cultural resources or Tribal cultural resources. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the coordination and consultation the Authority and Reclamation have engaged in with various Tribes.
74-5	We recommend that the Sites Project Authority and Bureau of Reclamation apply the new Tribal beneficial use definitions and water quality criteria that was adopted in California on May 2, 2017 by the State Water Resources Control Board to the water bodies impacted by this project. CIEA has supported Tribal engagement in Northern California for Tribal efforts to regionally designate traditionally used water bodies under the "new" statewide beneficial use definitions, "Tribal Subsistence Fishing" and "Tribal	The Tribal Subsistence Fishing (T-SUB) water quality objective for methylmercury (0.04 milligrams per kilogram (mg/kg), wet weight of skinless fish fillet) is more stringent than the California sport fish water quality objective. The T-SUB objective, however, applies only to waters that have been designated with the T-SUB beneficial use. While the Central Valley Regional Water Quality Control Board has

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	Cultural Uses including critical habitats for endangered species. These new definitions are now legally defensible under the Clean Water Act (CWA) and this issue areas should be part of the needed meaningful Tribal consultation.	adopted Tribal Beneficial Uses (TBUs), no waters in the Project area have yet been designated with any TBU. The Authority will consider Project effects, if any, on TBUs in the same manner as other beneficial uses and water quality criteria at such time as TBUs are established for relevant waterbody segments that would be affected by the Project. Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding TBUs.
74-6	We must remember that this is Native Land and Native people are humans and as the first Peoples of this land we seek to support the cultural continuance of Tribes to continue practicing their place-based cultures. Attached to this is the need to access to their homelands without state barriers, and to steward their lands which includes the need to protect the use of water to support regional landscapes, traditional foods and cultural uses. The proposed project and the EIR/EIS in their current state does not support Tribal traditional uses. We encourage state and federal agencies to support Native American rights to cultural subsistence as stated by the U.N. Declaration on the Rights of Indigenous Peoples, and in California to support the intent of Governor Newsom's apology as stated in N-15-19 and the resulting the Truth and Healing Council to work with California Tribes to support healing, collaboration and co-management with Tribes. The best way to support Tribes in healing is to support the cultural continuance of Tribes, provide access to cultural and subsistence resources and to protect culturally sensitive areas. What is the purpose of these proclamations/policies/entities, if you're going to continue to perpetrate the mistreatment and dispossession of the Tribal People? Please uphold and	Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the Authority's and Reclamation's satisfaction of the regulatory requirements. Chapter 22, Cultural Resources, and Chapter 23, Tribal Cultural Resources, evaluate potentially significant impacts on cultural resources or tribal cultural resources pursuant to regulatory requirements under NEPA and Section 106 of the National Historic Preservation Act, and CEQA and Assembly Bill 52, respectively. Master Response 7 describes the Authority's ongoing engagement efforts to further the intent of Executive Order N-15-19 and other government directives and policies related to respect for California Native American rights and culture.

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	protect not only the cultural practices and the continuance of California Native Peoples. Please join us in recommending the project and all actions involving the proposed project be halted until all Tribes, within and outside the footprint area, are meaningfully consulted.False statements made within the reports should be reinvestigated and corrected. Therefore, the Sites Authority and Bureau of Reclamation need to conduct proper EIR and EIS with Tribal involvement and Tribal consultation with all Tribes needs to be completed before this project continues.	
75-1	The State Water Contractors ("SWC") appreciate this opportunity to comment on the Revised Draft Environmental Impact Report and Supplemental Draft Environmental Impact Statement ("RDEIR/SDEIS") for the proposal to construct and operate a new offstream water storage reservoir and associated facilities ("Sites Project"). The Sites Project proposes to capture excess water from the Sacramento River and local creeks and store it in the new 1.5 MAF Sites Reservoir for later use. The SWC is an organization representing 27 of the 29 public water entities that hold contracts with the California Department of Water Resources (DWR) for the delivery of State Water Project (SWP) water.[Footnote 1: The SWC members are: Alameda County Flood Control & Water Conservation District, Zone 7; Alameda County Water District; Antelope Valley East Kern Water Agency; Central Coast Water Authority; City of Yuba City; Coachella Valley Water District; County of Kings; Crestline-Lake Arrowhead Water Agency; Desert Water Agency; Dudley Ridge Water District; Empire-West Side Irrigation District; Kern County Water Agency; Littlerock Creek Irrigation District; Metropolitan Water District of Southern California; Mojave Water Agency; Napa County Flood Control & Water Conservation District; Oak Flat Water District; Palmdale Water District; San Bernardino Valley Municipal Water District; San Gabriel Valley Municipal Water District;	The Authority and Reclamation appreciate the State Water Contractors' engagement on the Project.

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	San Gorgonio Pass Water Agency; San Luis Obispo County Flood Control & Water Conservation District; Santa Clara Valley Water District; Santa Clarita Valley Water Agency; Solano County Water Agency; Tulare Lake Basin Water Storage District.] Collectively, the SWC members provide a portion of the water supply delivered to approximately 27 million Californians, roughly two-thirds of the State's population, and to over 750,000 acres of irrigated agriculture. Water supply delivered to the Bay Area, San Joaquin Valley, Central Coast, and Southern California from the SWP is diverted from the Sacramento-San Joaquin River Delta. The SWC members have made significant investments in the SWP and continue to make investments to protect this important water supply. Several of the SWC members are potential Sites Project Storage Partners.	
75-2	The SWC [State Water Contractors] recognizes the importance of multi-benefit storage projects such as the proposed Sites Project, especially considering climate change impacts, including the frequent hydrologic whiplash from year to year and reduction of snowpack because of rising temperatures. Those impacts affect flood control, conditions for the environment, and water supply. While the SWC is supportive of such projects, it is essential that the SWP water supply reliability and the long-term investments by the SWC members are protected.	The commenter's support for the Project is noted and appreciated.
75-3	As noted in the RDEIR/SDEIS, the Sites Project proposes to divert excess flows from the Sacramento River. The unregulated flows downstream of the rim reservoirs constitute a significant portion of the SWP water supplies in addition to the water supply stored in Lake Oroville. The RDEIR/SDEIS notes that proposed diversions for the Sites Project would not impact SWP's ability to capture unregulated or excess flows. This commitment should be formalized in the Sites Project operations agreements with DWR and should include criteria that would protect the SWP water supplies and its ability to meet regulatory and contractual obligations. The operations agreements should also spell out how the Sites Reservoir operations would be	Please see Chapter 5, Surface Water Resources, for a discussion of the Project's impacts on SWP water supplies. Please see Master Response 2, Alternatives Description and Baseline, regarding coordination with SWP and CVP and the Authority's standing as a junior water right holder for Sites Reservoir. The Project would only divert water when the Delta is in "excess conditions," when there is water in the system in excess of the needs of the SWP and CVP. Based on current discussions between the Authority and Reclamation, as well as with California Department of Water

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	accounted for and tracked to ensure ongoing SWP and CVP operations are not impacted.	Resources, there will be accounting in the water rights agreements. This type of accounting may be identified in the reservoir operations plan. As described in Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, the Project requires a water right, and all agreements will respect existing water rights. Consideration of a water right application is a discretionary action by the State Water Resources Control Board (State Water Board) that requires a determination that unappropriated water is available, a review of potential impacts on public trust resources, and a determination that the appropriation of water is in the public interest. The future decision by the State Water Board regarding issuance of a water right for the Project is separate and distinct from the decision making by the Authority and Reclamation regarding whether, and, if so, how to approve the Project based on their review of the Final EIR/EIS.
75-4	The RDEIR/SDEIS also notes that the proposed operations of the Sites Project would rely on the SWP facilities, including Lake Oroville, to provide the water supply benefits to the Sites Project Storage Partners. The Sites Project operations agreements with DWR should ensure that the use of SWP facilities to provide benefits to Sites Project Authority or Storage Partners do not adversely impact SWP water supply or increase costs to the SWC [State Water Contractors] members. Similarly, the agreements should ensure that the SWP is not backstopping the Delta outflow benefits proposed to be provided by the Sites Project.	Please see response to comment 75-3 regarding agreements and the operations plan. Based on the analyses and modeling in the EIR/EIS, there are no adverse impacts on State Water Project facilities. Please see Appendix 5B4, Regional Deliveries, and Appendix 5B5, Water Supply.
75-5	In closing, the SWC believes the development of additional storage is a critically important part of the water supply portfolio for California to prepare and adapt to the rapidly changing climate. In addition to the new storage, the proposed location of the Sites Project also offers many opportunities for innovative and flexible water management needed in California. The SWC looks forward to working with you and DWR to ensure	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for a discussion of commenter support for the Project and plans, policies, and programs related to water resource management in California.

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	that the Sites Project is designed to avoid any adverse impacts to the SWP. If you have any questions or would like to discuss, please do not hesitate to contact me [Jennifer Pierre, General Manager] at (916) 447-7357 ext. 203.	
76-1	Pursuant to the State Clearinghouse's 10 November 2021 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the Request for Review for the Draft Environmental Impact Report for the Sites Reservoir Project, located in Colusa, Glenn, Tehama, and Yolo Counties. Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore, our comments will address concerns surrounding those issues.	The Authority and Reclamation appreciate Central Valley Regional Water Quality Control Board's engagement on the Project. The Authority and Reclamation acknowledge the various authorities of the Central Valley Regional Water Quality Control Board, which are identified in Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements.
76-2	Basin Plan The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38. The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment	The Authority and Reclamation appreciate this background on the Central Valley Regional Water Quality Control Board's basin planning process. The applicable basin plans are identified in Chapter 6, Surface Water Quality.

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	in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, please visit our website: http://www.waterboards.ca.govIcentralvalley/water issues/basinplans/	
76-3	Antidegradation Considerations All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at: https://www.waterboards.ca.gov/centralvalley/water issues/basin plans/sacsjr201805.pdf In part it states: Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State. This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.	The Authority and Reclamation acknowledge and agree the operation of Sites Reservoir, including consistency with the antidegradation policy, will be reviewed by regulatory agencies as part of the applicable permit processes (see Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements, regarding permits, approvals, and consultation processes that are potentially applicable to the Project and agencies that are anticipated to rely on the EIR/EIS for decision-making and implementation). The EIR/EIS evaluates surface water and groundwater quality in Chapters 6, Surface Water Quality, and 8, Groundwater Resources, and includes discussion of background concentrations and applicable water quality standards. Additional information is provided in Master Response 4, Water Quality.

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	The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.	
76-4	Construction Storm Water General Permit Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Resources Control Board website at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml	The State Water Resources Control Board Stormwater Construction General Permit process, including timing, monitoring, and reporting requirements, is described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, under BMP-12, Development and Implementation of Stormwater Pollution Prevention Plan(s) (SWPPP) and Obtainment of Coverage under Stormwater Construction General Permit (Stormwater and Non-stormwater) (Water Quality Order No. 2022-0057-DWQ/NPDES No. CAS000002 and any amendments thereto). The Authority will obtain all required permits and comply with all permit requirements.
76-5	Phase I and II Municipal Separate Storm Sewer System (MS4) Permits [Footnote 1: Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.]	The Phase I and II Municipal Separate Storm Sewer System (MS4) permits do not apply to the Project because the Project does not occur in an MS4 coverage area. Instead, please see Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, under BMP-12, Development and Implementation of Stormwater Pollution Prevention Plan(s) (SWPPP) and Obtainment of Coverage under Stormwater Construction General Permit (Stormwater and Non-

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	The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (L1D)/postconstruction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process. For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/water issues/storm water/municipal permits/ For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at: http://www.waterboards.ca.gov/water issues/programs/stormwater/phase ii municipal.shtml	stormwater) (Water Quality Order No. 2022-0057-DWQ/NPDES No. CAS000002 and any amendments thereto). The SWPPP addresses stormwater runoff both during and after construction. Postconstruction measures required by the SWPPP include long-term operation and maintenance erosion and sediment control plans with a minimum duration of 5 years. The plans would include measures to revegetate disturbed areas, maintain roads and other paved and unpaved surfaces to avoid erosion and sediment/siltation into local waterbodies, and install or construct sedimentation basins, silt fencing, fiber rolls, and hydraulic mulch/seeding. The Authority will obtain all required permits and comply with all permit requirements.
76-6	Industrial Storm Water General Permit Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014- 0057-DWQ. For more information on the Industrial Storm Water General Permit. visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/water issues/storm water/industrial general permits/index.shtml	The Industrial Storm Water General Permit does not apply to the Project. Please see instead Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, under BMP-12, Development and Implementation of Stormwater Pollution Prevention Plan(s) (SWPPP) and Obtainment of Coverage under Stormwater Construction General Permit (Stormwater and Non-stormwater) (Water Quality Order No. 2022-0057-DWQ/NPDES No. CAS000002 and any amendments thereto). Please see the response to

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		comment 76-5 for additional information about the postconstruction measures required by the SWPPP. The Authority will obtain all required permits and comply with all permit requirements.
76-7	Clean Water Act Section 404 Permit If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.	The permit related to the discharge of dredged or fill material into waters of the United States is described in Table 4-1 of Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements. The Authority will obtain all required permits and comply with all permit requirements. BMPs related to discharge of dredged or fill material are described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies.
76-8	Clean Water Act Section 401 Permit - Water Quality Certification If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water issues/water quality certification/	The Section 401 water quality certification is described in Table 4-2 of Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements. The Authority will obtain all required permits and comply with all permit requirements. BMPs related to disturbance of waters of the United States are described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies.

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76-9	Waste Discharge Requirements - Discharges to Waters of the State If USACE determines that only non-jurisdictional waters of the State (i.e., "nonfederal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water issues/waste to surface water/ Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at: https://www.waterboards.ca.gov/board decisions/adopted orders/water quality/2004/wqo/wqo2004-0004.pdf	Waste discharge requirements are described in Table 4-2 of Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements. The Authority will obtain all required permits and comply with all permit requirements. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for a discussion of the permitting timeline and processes. BMPs related to disturbance of waters of the state and the waste discharge requirement are described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. The Project will obtain and adhere to any needed waste discharge requirements applicable to waters of the state, as described in BMP-11, Management of Dredged Material.
76-10	Dewatering Permit If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-	Groundwater dewatering and the Project's compliance with applicable State Water Resources Control Board and Central Valley Regional Water Quality Control Board requirements are described in Chapter 8, Groundwater Resources, and in BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002 for Limited Threat Discharges to Surface Water) and

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	2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge. For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/board decisions/adopted orders/water quality/2003/wqo/wqo2003-0003.pdf For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board decisions/adopted orders/waiverslr5-2018-0085.pdf	State Water Resources Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the existing permits and any amendments thereto), in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. The Authority will obtain all required permits and comply with all permit requirements.
76-11	Limited Threat General NPDES Permit If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for Limited Threat Discharges to Surface Water (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-20 16-0076-01.pdf	As described in Chapter 8, Groundwater Resources, groundwater discharged to surface waterbodies would comply with Central Valley Regional Water Quality Control Board Order No. R5-2022-0006, and groundwater discharged to land would comply with State Water Resources Control Board Order No. 2003-0003-003-DWQ (BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002 for Limited Threat Discharges to Surface Water) and State Water Resources Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the existing permits and any amendments thereto)). See also BMP-14 in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies.

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		The Authority will obtain all required permits and comply with all permit requirements.
76-12	NPDES Permit If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/help/permit/	If any National Pollutant Discharge Elimination System permits are required in connection with the Project in addition to permits related to stormwater and dewatering that are discussed in these responses, all required permit processes will be followed.
77-1	The California Department of Fish and Wildlife (CDFW) received and reviewed the Notice of Availability of a Recirculated Draft EIR/ Supplemental Draft EIS (RDEIR/SDEIS) from the Sites Project Authority (Authority) for the Sites Project (Proposed Project) pursuant the California Environmental Quality Act (CEQA) statute and guidelines. It is important to note that CDFW has previously submitted comments to the Authority on January 12, 2018, in response to the Notice of Availability of the Draft EIR prepared on August 10, 2017, as part of an earlier phase of Project development. Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Proposed Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Proposed Project for which CDFW, by law, may need to exercise its own regulatory authority under the Fish and Game Code. CDFW appreciates that with most large projects there may be a continuing effort to analyze impacts and revise the various project alternatives. CDFW remains available for coordination for those purposes.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS. Reclamation responses to comments on the 2017 Draft EIS can be found in Volume 3, Appendix 4A, Reclamation Responses to 2017 Draft EIS Comments.

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77-2	CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (Id., § 1802.) Similarly for purposes of CEQA, CDFW provides, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.	The Authority and Reclamation acknowledge the authority of the California Department of Fish and Wildlife (CDFW) over fish and wildlife resources. The trust assets that the commenter notes are identified in Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements.
77-3	CDFW may also act as a Responsible Agency under CEQA. (Pub. Resources Code, §21069; CEQA Guidelines, § 15381.) The Proposed Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent the Proposed Project's implementation may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), such activities are prohibited by the Fish and Game Code. CDFW also administers the Native Plant Protection Act, Natural Community Conservation Program, and other provisions of the Fish and Game Code that afford protection to California's fish and wildlife resources.	The Authority and Reclamation acknowledge the authority of the CDFW and that CDFW may act as a Responsible Agency under CEQA. Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements, provides several tables identifying permits, approvals, reviews, and consultation requirements and includes CDFW as a permitting agency.
77-4	CDFW appreciates the Authority's continued effort to address the impacts of the Proposed Project on the State's biological resources. CDFW offers the comments and recommendations in the attached Appendix to assist the Authority in its role as lead agency in adequately identifying and mitigating the Proposed Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife resources. The comments and recommendations are also offered to aid the Authority in identifying a reasonable range of alternatives that would avoid or minimize adverse impacts.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS. Responses to comments 77-5 through 77-111 provide responses to specific CDFW comments included in the CDFW-attached appendix.

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	Consistent with CDFW's trustee role, the attached comments address all fish and wildlife resource areas. However, CDFW acknowledges the Proposed Project's potential impacts on aquatic species are of particular note. Therefore, CDFW prioritized efforts to address those impacts. While the attached comments are extensive, CDFW understands the Authority is seeking all possible input and CDFW strove to be thorough in the review of the RDEIR/SDEIS in order to be of the greatest assistance to the Authority. CDFW looks forward to continuing to work with the Authority to refine the Proposed Project and associated mitigation measures.	
77-5	CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, §21003, subd. (e)). Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDB_FieldSurveyForm.pdf. The completed form can be mailed electronically to CNDDB at the following email address:CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp.	The Authority or its contractors will provide species information to the California Natural Diversity Database in accordance with the Project's permit terms and conditions unless otherwise agreed to with CDFW and USFWS.
77-6	FILING FEES The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)	The Authority will obtain all required permits and comply with all permit requirements, including associated filing fees.

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77-7	Pursuant to Public Resources Code §21092 and §21092.2, CDFW requests written notification of proposed actions and pending decisions regarding the Proposed Project. Written notifications should be directed to: California Department of Fish and Wildlife P.O. Box 944209, Sacramento, CA 94244-2090. CDFW appreciates the opportunity to comment on the RDEIR/SDEIS to assist in identifying and mitigating Proposed Project impacts on biological resources. CDFW personnel are available for consultation regarding biological resources and strategies to minimize and/or mitigate impacts. Questions regarding this letter or further coordination should be vironmental Program Manager, at (916) 701-3226 or Kristal.Davis-Fadtke@wildlife.ca.gov.	The comment is noted. The Authority and Reclamation appreciate CDFW's engagement on the Project.
77-8	ATTMT 1. Chapter or Appendix - Section: Chapter 1 - Section 1.1, Sites Project Authority. Page(s): p. 1-2. Comment and Recommendations: The RDEIR/SDEIS states that "[California Department of Water Resources] DWR, on behalf of the State of California, is also a non-voting member of the Reservoir Committee. The State of California would provide funding through the California Water Commission (CWC) for the Project and receive ecosystem, recreation, and flood control benefits from the Project" (p. 1-2). While DWR is a member of the Reservoir Committee, they do not represent the State's interests in administration of ecosystem benefits. Suggest removing "on behalf of the State of California" since DWR will not be administering ecosystem benefits.	Text in Chapter 1, Introduction, Section 1.1, Sites Project Authority, has been revised to identify CDFW's anticipated role in administrating ecosystem benefits.
77-9	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.4, No Project/No Action Alternative. Page(s): pp. 2-7, 8. Comment and Recommendations: The RDEIR/SDEIS states, "Because none of the facilities would be constructed or operated, the No Project Alternative would not materially change conditions as compared to existing conditions. Section 3.2.1 describes how the reasonably foreseeable future conditions under the No Project Alternative would not be materially different from the existing	The EIR/EIS defines the existing conditions as the 2020 environmental baseline for the purpose of comparing the Project to the No Project Alternative/No Action Alternative. Please see Master Response 2, Alternatives Description and Baseline, for information regarding the baseline existing conditions and No Project Alternative/No Action Alternative.

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	conditions that were used as the environmental baseline. The No Project Alternative assumes the same regulatory criteria as existing conditions" (pp. 2-7,8). The purpose in the California Environmental Quality Act (CEQA) of the No Project Alternative is to allow decision makers to compare the impacts of approving the Proposed Project with the impacts of not approving the Proposed Project. As a result, there could be a difference between existing conditions (i.e., baseline conditions) and the No Project Alternative. The No Project Alternative should include an analysis that is comparable to the other Project Alternatives, considering changing conditions such as climate change and/or include reasonably foreseeable future project or operational changes, such as the Delta Conveyance Project (DCP). Existing conditions should be a set point in time (typically the Notice of Preparation or the current conditions at the time of analysis). It is important a project assess the baseline conditions in the proposed area including the continuing trends in those conditions (i.e., the No Project Alternative) to evaluate both future impacts and benefits of a project. California Department of Fish and Wildlife (CDFW) recommends the Authority include a separate analysis in the Final Environmental Impact Report/ Final Environmental Impact Statement (FEIR/FEIS) considering a No Project Alternative which incorporates climate change projections and foreseeable future projects or operational changes that will impact water supply or water quality, additional to the existing baseline.	Effects associated with climate change are considered in Chapter 28, Climate Change. Section 28.3, Methods of Analysis, provides a detailed explanation of the use of 2035 Central Tendency (CT) and why it was used in the quantitative evaluation. Refined 2035 CT model results are included in both Chapter 28 and Appendix 28A, Climate Change, and reflect the application of the refined operations description in Chapter 2, Project Description and Alternatives. In addition, Water Storage Investment Program (WSIP) 2070 modeling results are included in Appendix 28A and these results have been reviewed in light of the information contained in Chapter 28. Modifications to Chapter 28 have been made where appropriate, incorporating both the revised 2035 CT results and the WSIP 2070 results. None of the modifications to Chapter 28 result in changes to the conclusions in Chapter 28. The California Department of Water Resources (DWR) issued a Draft EIR for the Delta Conveyance Project in July 2022, and the U.S. Army Corps of Engineers (USACE) issued a Draft EIS in December 2022. The DWR and USACE will determine whether to approve the proposed Delta Conveyance Project, an alternative, or no project, and issue a Final EIR and EIS. The Delta Conveyance Project is included as a reasonably foreseeable project in Chapter 31, Cumulative Impacts.
77-10	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Project Description and Alternatives. Page(s): General Comment. Comment and Recommendations: Alternative 1, 2, and 3 in the RDEIR/SDEIS all have the same operational diversion criteria. CDFW finds the Proposed Project, as currently described, and the mitigation measures currently proposed in the RDEIR/SDEIS are not sufficient to reduce impacts to less than significant for salmonids, Delta Smelt, and Longfin smelt. CDFW recommends the	Please refer to Master Response 5, Aquatic Biological Resources, for a description of the development of mitigation measures regarding flow and the use of best available science and data to evaluate bypass flows. Master Response 5 also discusses the impact analysis for longfin smelt and how implementation of Mitigation Measure FISH-9.1 would reduce the level of impact on the species to less than significant. Please refer to Chapter 11, Aquatic Biological Resources,

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	FEIR/FEIS include an Alternative with operational criteria that both meets Proposed Project objectives and includes bypass flow criteria at Wilkins Slough of at least 10,712 cfs across the entire salmonid migration period of October to June, in addition to the other currently proposed operational diversion criteria, to minimize impacts to aquatic resources.	regarding how the implementation of Mitigation Measures FISH-8.1 and WQ-2.2 would reduce operations impacts on delta smelt to a less-than-significant level. Please see Master Response 2, Alternatives Description and Baseline, regarding operational refinements and Master Response 9, Alternatives Development, regarding the reasonable range of feasible alternatives and the Project refinement of the Wilkins Slough criteria, as well as identified adverse effects on fish and wildlife disclosed in the EIR/EIS that would not be substantially lessened as a result of changed operational criteria.
77-11	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.1.1, GCID Main Canal Diversion and System Upgrades. Page(s): p. 2-9. Comment and Recommendations: The RDEIR/SDEIS states that "The Project would involve the installation of a new 3,000-cfs GCID Main Canal head gate structure about 0.25 mile downstream of Hamilton City Pump Station" (p. 2-9). However, the existing head gate structure would be left in place to continue to serve as a bridge and continue to be operated during construction of the new head gate. The FEIR/FEIS should include the monitoring protocols necessary to ensure the new setbacks do not increase fish entrainment.	The commenter provided this attachment for reference purposes in support of their comments.
77-12	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.1.2, Funks Reservoir. Page(s): p. 2-13. Comment and Recommendations: The RDEIR/SDEIS states that "The Project would not alter the footprint of Funks Reservoir; however, 740,000 cubic yards of sediment that has accumulated since its constructed would be excavated from the reservoir" (p. 2-13). This could significantly impact native fish species that may be present in the reservoir. CDFW recommends listing existing fish population in Funks reservoir, detailing the work window when the excavation will occur, and where the excavated material will be deposited.	The dredging of Funks Reservoir and potential impacts on fish are evaluated in Chapter 11, Aquatic Biological Resources, Impact FISH-1. In addition, Table 11-2 identifies the fish that have the potential to occur in the Funks Creek and Stone Corral Creek systems. Chapter 2, Project Description and Alternatives, describes where the material would be stockpiled and describes the timing (work window) of the activities: "The excavated sediment would be stockpiled adjacent to Funks Reservoir as shown on Figure 2-15. The sediment may be used for construction purposes, if suitable, or graded in place and revegetated. The reservoir is usually dewatered from the end of December through early February for TC Canal maintenance purposes." Please see BMP-11, Management of Dredged Material, in

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		Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, regarding the management and disposal of dredged material.
77-13	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.1.4, Inlet/Outlet Works. Page(s): p. 2-17. Comment and Recommendations: Insufficient information was provided to assess whether the I/O Tower port elevations will provide sufficient flexibility in the management of water temperature and/or water quality. CDFW recommends conducting an analysis of operational flexibility resulting from the proposed port locations for inclusion in the FEIR/FEIS.	The I/O tower port elevations are incorporated into the analysis throughout the EIR/EIS, where applicable. The modeling for the EIR/EIS discloses potential impacts considering the I/O tower port elevations. The methodologies and impact analysis account for the ability of water to be withdrawn and discharged from different ports on the I/O tower, as would occur during operations. For example, in Chapter 6, Surface Water Quality, Section 6.3.2.5, Water Temperature, water temperature in Sites Reservoir was modeled using CE-QUAL-W2 and considered the multiple tiers in the I/O tower (centerlines at 340, 370, 390, 410, 430, and 450 feet elevation, with an additional outlet at 470 feet for Alternatives 1 and 3) and at the low-level intake with centerline at 311 feet. In addition, Impact WQ-2 takes into consideration the operation of the I/O tower ports in the discussion of harmful algal blooms (HABs). Impacts WQ-1, WQ-2, and WQ-3 consider operation of different ports on the I/O tower with respect to temperature and water quality. In addition, see Master Response 4, Water Quality, for additional information regarding the I/O tower port elevations.
77-14	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.1.4, Dams and Dikes. Page(s): p. 2-20. Comment and Recommendations: The RDEIR/SDEIS states that "Water in Stone Corral Creek would be diverted directly into the creek diversion pipeline through the Sites Dam abutment and re-enter the creek channel on the east side of the Sites Dam work area. The outlet tunnel with two 84-inch-diameter fixed cone valves would accommodate these releases, and an energy dissipating chamber would reduce the velocity of the water released" (p. 2-20). CDFW recommends the	As described in Chapter 2, Project Description and Alternatives, and Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, monitoring of releases into Funks and Stone Corral Creeks would occur downstream of the reservoir. Monitoring of releases would occur in conjunction with the requirement under California Fish & Game Code Section 5937 to maintain fish in good condition. Monitoring would likely include velocities and temperatures.

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	FEIR/FEIS include provisions to monitor the velocities and temperatures of water releases into Funks and Stone Corral creeks.	
77-15	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.1.5, Dunnigan Pipeline. Page(s): p. 2-22. Comment and Recommendations: The RDEIR/SDEIS states that "construction would include open cut of approximately 100 feet to cross Bird Creek in the dry season" (p. 2-22). CDFW recommends that the FEIR/FEIS include baseline conditions for Bird Creek in the Proposed Project analysis.	Bird Creek is described in Chapter 7, Fluvial Geomorphology, in multiple sections, including Section 7.2.2, Other Valley Drainages, and Section 7.4, Impact Analysis and Mitigation Measures. Potential impacts related to Bird Creek are described in Impact FLV-1.
77-16	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.1.6, Recreation Areas. Page(s): p. 2-22. Comment and Recommendations: CDFW recommends defining what exact uses are planned for the recreation area regarding angling and hunting. The reservoir is likely to attract a large contingent of migratory waterfowl, deer, dove, and turkey populations. The fluctuating water level will likely result in regions of green vegetation due to receding water, creating a potential for increased tule elk usage. CDFW recommends considering coordination and use of lawful public hunting to manage increased populations.	The Authority and Reclamation will work with CDFW regarding potential opportunities for lawful public hunting at the reservoir in the recreation areas.
77-17	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.1.7, New and Existing Roadways. Page(s): p. 2-23. Comment and Recommendations: The RDEIR/SDEIS states that "It is anticipated that all construction activities associated with the recreation areas would occur within the footprints of the recreation areas and the temporary and permanent access road areas" (p. 2-23). The RDEIR/SDEIS should include details on what restoration activities are planned for areas impacted by temporary access roads.	Temporary and existing roadway improvement are outlined in Chapter 2, Project Description and Alternatives. This includes planned construction of new and temporary roads and improvement of existing roads. Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, provides a list of best management practices, which includes BMP-36, Control of Invasive Plant Species during Construction. BMP-36 states, "Upon completion of the Project, all areas subject to temporary ground disturbances will be recontoured to pre-Project elevations, as appropriate and necessary, and revegetated with native vegetation to promote restoration of the area to pre-Project or better conditions. An area subject to 'temporary'

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		disturbance is any area that is disturbed to allow for construction of the Project but is not required for operation or maintenance of any Project-related infrastructure, will not be subject to further disturbance after Project completion, and has the potential to be revegetated." Language has been added to Chapter 2 and Chapter 18, Navigation, Transportation, and Traffic, of the Final EIR/EIS regarding the restoration of temporary roads. Appendix 2D also describes the Land Management Plan (LMP), which would apply to various areas around the reservoir, including the recreation areas. Section 2D.7, Land Management Plan, states, "Identification and mapping of sensitive habitats and vegetation, including special-status plant populations, sensitive natural communities, wetlands, and non-wetland waters, that were avoided during construction so that signs, fencing, or other exclusion practices are implemented during operation and maintenance activities and these areas are avoided." In addition, the Recreation Management Plan, also described in Appendix 2D, would "Avoid and reduce disruption of sensitive habitats in recreation areas by: • Identifying and mapping sensitive habitats and vegetation, including special-status plant populations, sensitive natural communities, wetlands, and non-wetland waters, that were avoided during construction of recreation areas. • Installing fencing, posting signage, or implementing other exclusion practices along the boundaries of sensitive habitats in the recreation areas to avoid and minimize disturbance to these habitats during operation and maintenance activities in the recreation areas."

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		Applicable mitigation measures described in Chapter 9, Vegetation and Wetland Resources, and Chapter 10, Wildlife Resources, would apply where appropriate and would include restoration.
77-18	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.1.7, Construction Access. Page(s): p. 2-27. Comment and Recommendations: The FEIR/FEIS should disclose Proposed Project impacts related to increased traffic. If these impacts are considered significant, the FEIR/FEIS should disclose additional avoidance, minimization and or mitigation measures to offset the impacts.	Section 18.4, Impact Analysis and Mitigation Measures, of Chapter 18, Navigation, Transportation, and Traffic, provides information regarding Project impacts related to increased traffic on construction access roadways, as well as increased traffic due to recreational uses and maintenance once the Project is constructed and operating. Refer to Impact TRA-1 through Impact TRA-5 in Chapter 18 for the disclosure of transportation and traffic impacts related to construction and operations.
77-19	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.2.1, Water Operations. Page(s): p. 2-29. Comment and Recommendations: The timing and magnitude of reservoir releases for Storage Partners along the Colusa Basin Drain (CBD), Yolo Bypass, and North Bay Aqueduct is unclear. The RDEIS/SDEIS states that reservoir releases for Storage Partners "would generally be made from May to November but could occur at any time of the year, depending on a Storage Partner's need and capacity to convey water to its intended point of delivery" (p. 2-29). However, all analyses related to flow deliveries through the Yolo Bypass were limited to the August-October time-period. CDFW recommends providing more detail about the timing and magnitude of releases for Storage Partners along the CBD, Yolo Bypass, and North Bay Aqueduct. If the timing and/or magnitude of these releases are substantially different from the proposed "habitat flows" from August-October, additional analyses on the potential impacts of moving that water through the region is needed.	The majority of flows through the Yolo Bypass are anticipated to be for Proposition 1 flows, which are modeled to occur August through October, in accordance with the Sites Feasibility Study prepared for the California Water Commission. There is currently one Storage Partner who would potentially receive a relatively small delivery from the North Bay Aqueduct. There are no Storage Partners expected to take deliveries along the Colusa Basin Drain or Yolo Bypass. The EIR/EIS and modeling evaluated the anticipated flows through the Colusa Basin Drain, Yolo Bypass, and North Bay Aqueduct (e.g., Appendix 5A5, CALSIM II Model Delivery Specifications, and Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis).
77-20	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.2.1, Diversion to Sites Reservoir. Page(s): p. 2-30. Comment and Recommendations: The RDEIR/SDEIS states that "up to 2,100 cfs, plus losses	Please see Master Response 3, Hydrology and Hydrologic Modeling, for information on losses as represented by the model.

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	would be diverted at the RBPP for the Project" (p. 2-30). CDFW recommends the FEIR/FEIS explains what is meant by the term "losses" and quantifies the magnitude of these losses.	
77-21	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.2.1, Water Operations, Bend Bridge Pulse Protection. Page(s): p. 2-31, 32. Comment and Recommendations: The RDEIR/SDEIS included a pulse protection that is flow based because real-time fish monitoring and presence-based pulse operational adjustments cannot be captured in a model. Commonly, the intention of a pulse flow protection measure is to protect pulses of fish migration rather than pulses of water, with flow-based pulse protection modeled as a proxy for real-time fish presence-based protection. Similarly, real-time fish monitoring and associated criteria are the norm rather than the exception for large scale diversion projects in the Sacramento-San Joaquin Delta ecosystem (CDFW 2019 State Water Project Incidental Take Permit (ITP), United States Bureau of Reclamation (USBR) 2019 Biological Assessment (BA)). CDFW supports the inclusion of pulse flow protection in the operation of the Proposed Project and anticipates working with the Authority to develop a process to implement this measure in real time based on fish presence.	Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, Section 2D.6, Fish Monitoring and Technical Studies Plan and Adaptive Management for Diversions, states that the Authority will conduct real-time fish monitoring and identifies the technical studies and monitoring required of the Project. The Authority will work with CDFW to implement pulse flow protection.
77-22	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.2.1, Diversion to Sites Reservoir. Page(s): p. 2-32. Comment and Recommendations: A ramping schedule will need to be developed to ensure that when pumping resumes upon cessation of the pulse event, flows in the river are not decreased at such a rapid rate that fish are adversely impacted.	The potential for near-field effects is analyzed in the EIR/EIS with best available information, which indicates limited potential for Project effects. As noted in Section 2D.6, Fish Monitoring and Technical Studies Plan and Adaptive Management for Diversions, of Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, technical studies would verify the facilities' performance during high winter flow conditions under which the Project would be diverting in the future, a situation that currently does not occur. The technical studies would be part of adaptive management for the diversions. As described in Appendix 2D, technical studies will validate

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		analyses conducted, refine and understand the mechanism(s) by which Project operations affect aquatic resources in high-flow conditions, and explore ways in which Project operations can further benefit fish populations. Specific parameters for each technical study will be developed as part of individual study plans, with the approval of the permitting fish agencies (i.e., National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service, and CDFW). The Authority will develop a ramping schedule in consultation with agencies during the Endangered Species Act process.
77-23	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - Section 2.5.2.1, Diversion to Sites Reservoir. Page(s): p. 2-32. Comment and Recommendations: Three Core-1 Central Valley (CV) spring-run tributaries, two Core-2 CV spring-run tributaries, 3 Core-1 CV steelhead tributaries and 2 Core-2 CV steelhead tributaries (Antelope, Mill, Deer, Big Chico, and Butte Creeks) enter the Sacramento River downstream of Red Bluff Diversion Dam (RBDD). The Adaptive Management Plan and fish monitoring program should take these into consideration and use existing or new juvenile monitoring programs to inform Proposed Project operations.	Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, contains text related to Stone Corral Creek and Funks Creek adaptive management and study plans. Appendix 2D also describes fish monitoring and technical studies plan and adaptive management associated with the diversions. In addition, the Adaptive Management Plan contains information related to monitoring programs.
77-24	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - 2.5.2.1, Water Operations. Page(s): p. 2-35. Comment and Recommendations: The RDEIR/SDEIS states, "The Authority is currently working with Reclamation and DWR to establish operating principles with both agencies that would describe the details of the coordination and collaboration that would take place during the operation of the Project" (p. 2-35). Coordinating operations between the Proposed Project, Central Valley Project (CVP), and State Water Project (SWP) is complicated and there could be unintended consequences resulting from proposed water transfers and exchanges. Little detail is provided describing coordinated operations between the three entities, which hinders the evaluation of potential impacts of the Proposed	Please see Master Response 2, Alternatives Description and Baseline, regarding coordination with SWP and CVP and the Authority's standing as a junior water right holder for Sites Reservoir. The Project would only divert water when the Delta is in "excess conditions," when there is water in the system in excess of the needs of the SWP and CVP. Based on current discussions between the Authority and Reclamation, as well as with DWR, there will be accounting in the water rights agreements. This type of accounting may be identified in the operations plan. As described in Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, the Project requires a water right and all agreements will respect existing water rights. Please see Master Response 2, Alternatives Description

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	Project. The information provided suggests that there may be impacts associated with the proposed coordinated operations.	and Baseline, regarding coordination with SWP and CVP and the Authority's standing as a junior water right holder for Sites Reservoir. Please also see Master Response 2 regarding the adequacy of the impact analysis. Please see Chapter 5, Surface Water Resources, for a discussion of the Project's impacts on SWP water supplies. As described in Chapter 5, Impact HYDRO-1, "All decreases in water supply modeled for Alternatives 1, 2, and 3 are considered negligible. On average, CVP and SWP deliveries are expected to increase with Alternatives 1, 2, and 3, with greater increases expected in association with CVP participation, particularly with Alternative 3."
77-25	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - 2.5.2.1, Shasta Lake Exchanges. Page(s): p. 2-36. Comment and Recommendations: The critical months for cold water pool management are incorrectly listed as August through September. CDFW recommends correcting this statement in the FEIR/FEIS and any subsequent analyses to cover the critical period for cold water pool management of August through November.	The text in Chapter 2, Project Description and Alternatives, identifies this time (August and September) as "critical" and then goes on to identify the late summer and fall (i.e., August through November). The impact analysis in Chapter 11, Aquatic Biological Resources, covers the entire year and evaluates temperature over all months of presence of each life stage of each fish species, including those required for cold-water pool management. In addition, Chapter 11, Impact FISH-2 includes a discussion on cold-water pool management.
77-26	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - 2.5.2.1, Funks Creek and Stone Corral Creek Releases. Page(s): p. 2-38. Comment and Recommendations: CDFW recommends the Proposed Project consider including all perennial creeks and rivers potentially impacted in the baseline studies. CDFW requests that all baseline data (not synthesized data) be shared with CDFW.	The creeks upstream of the inundation would remain as they currently are because they would not be inundated. Stone Corral and Funks Creeks are the two existing creeks that would experience a change in flow due to the Project, as a result of either inundation or impoundment of flows. Thus, the technical studies identified in Chapter 2, Project Description and Alternatives, and described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, are proposed. The Stone Corral Creek and Funks Creek Aquatic Study Plan (Aquatic Study Plan) will be developed during the permitting and design process and will be adopted prior to land acquisition. See the following sections in Appendix 2D: Section 2D.4.1, Fish Assemblage and Available Habitats; Section

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		2D.4.2, Surface Water Ambient Monitoring Program Study; Section 2D.4.3, Flow Characterization and Geomorphic Study; and Section 2D.4.4, Temperature Study. The Authority will provide relevant baseline data to CDFW.
77-27	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - 2.5.2.4, Reservoir Management Plan. Page(s): p. 2-43. Comment and Recommendations: CDFW recommends the development of a site-specific Aquatic Invasive Species Management Plan, coordinated with CDFW.	Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, discusses the activities to be taken for the control of aquatic invasive species in Section 2D.3.6.1, Invasive Aquatic Plants, and Section 2D.3.6.2, Invasive Aquatic Invertebrates. The Authority will coordinate with CDFW as appropriate.
77-28	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - 2.5.2.4, Reservoir Management Plan. Page(s): p. 2-43. Comment and Recommendations: CDFW recommends the development of a site-specific Fisheries Management Plan, coordinated with CDFW.	The Chapter 2, Project Description and Alternatives, Reservoir Management Plan section describes the fisheries management documentation that would be part of reservoir management. The Authority will coordinate with CDFW as needed regarding fisheries management at the reservoir.
77-29	ATTMT 1. Chapter or Appendix - Section: Chapter 2 - 2.5.2.4, Recreation Management Plan. Page(s): p. 2-43. Comment and Recommendations: CDFW recommends considering hunting and firearm use, and their respective limitations or regulations, within the Recreation Management Plan. CDFW recommends considering the management and regulation of public use facilities to discourage habituation of wildlife to people.	The Authority and Reclamation will work with CDFW regarding potential opportunities for lawful public hunting at the reservoir in the recreation areas. Please see Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, Section 2D.7, Land Management Plan, regarding activities the Authority will take in the LMP regarding measures and practices to avoid or minimize operations and maintenance impacts on special-status wildlife, and Section 2D.8, Recreation Management Plan, regarding managing the public in recreation areas.
77-30	ATTMT 1. Chapter or Appendix - Section: Chapter 5 - Hydraulic Modeling Results. Page(s): General Comment. Comment and Recommendations: The RDEIR/SDEIS presented hydrologic modeling results as averaged percent changes in flow and storage by water year type. Averaged results across water year type can obscure potentially significant impacts as there can be substantial hydrologic variation within the same water year type. CDFW recommends that the Proposed Project examine and present the results of	The presentation of model results in Chapter 5, Surface Water Resources, Section 5.4, Hydrologic Modeling Results, is provided for the reader to understand basic hydrologic effects that may occur because of the Project. It is not meant to be a detailed evaluation of all changes, nor is it an impact assessment. Other more specific and detailed metrics are used in other resource chapters for impact assessment, and more detailed model results are presented in

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	individual years on the extreme ends of the water year type classification, wet and critically dry, to provide a better understanding of the magnitude of range in flow and storage under the different alternatives. The Proposed Project's hydrologic analysis suggests that the greatest impacts from Proposed Project operations occur in drier years. CDFW recommends that the Proposed Project analyze and discuss the potential impacts from Proposed Project operations under successive dry and critically dry years in the FEIR/FEIS, as there is the potential that under drought conditions impacts from the Proposed Project may be compounded and warrant additional avoidance, minimization, and mitigation measures.	Appendix 5B, Water Resources Modeling System. Other resource chapters describe the modeling results and statistics used in the various chapters' methods of analysis sections. For example, Chapter 11, Aquatic Biological Resources, may use mean values. For a discussion on the use of mean values in the results presentation for aquatic resources, please see Master Response 5, Aquatic Biological Resources. The hydrologic spectrum (extreme ends of the water year type classification) of results are presented in Appendix 5B, Water Resources Modeling System. Exceedance plots are provided in Appendix 5B.5, Water Supply, for each model output parameter. Through examination of the results, a reader may understand the range in flow and storage under the different alternatives. Additionally, in Appendix 5B.5, Water Supply, flow and storage results are tabulated at 10% exceedance increments, which would include drier water year types. The analyses in the resource chapters generally do not focus on specific years because the main concern is whether the Project would alter the distribution of conditions. For example, if 15% of the total years exceed some threshold under the No Project Alternative and 15% of the total years exceed the same threshold with the Project, there would be no impact, even if the particular years with the exceedances change as a result of the Project. With respect to successive drier conditions, it should be noted that the water year–type calculations consider the hydrology from the previous water year. As such, a water year that is considered Critically Dry is likely to follow a year with Dry hydrologic conditions. Furthermore, lower storage conditions only occur under successive Dry/Critically Dry Water Years. The exceedance plots and tabulated results in Appendix 5B5, Water Supply, provide, by exceedance

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		probability, an understanding of the effect (positive or negative) of the alternatives under successive drier conditions. Because the Project would divert little water during drier conditions, Project-related reductions in Sacramento River flow during Dry/Critically Dry Water Years would be limited, as would be the effects associated with multiple Dry Water Years in a row. Multiple years with Dry hydrologic conditions could, however, result in depletion of storage in Sites Reservoir. Depletion of Sites Reservoir storage is evaluated and could affect resources, such as water quality, which is considered in Chapter 6, Surface Water Quality. Additionally, Project operations would not affect water supply for other water users, and as such, would not cause an increase in their diversions during dry conditions. Sites Reservoir releases would occur mostly during dry conditions, which would increase flow in the Sacramento River and Delta.
77-31	ATTMT 1. Chapter or Appendix - Section: Chapter 5.3 - Section 5.3, Hydrologic Modeling Methods. Page(s): p. 5-26. Comment and Recommendations: The CalSim II model does not include inflow or outflow for Funks and Stone Corral creeks. The USRDOM should include estimates for these, as well as "emergency spill" operations, minimum flows in the creeks, and channel maintenance pulses (if proposed). As the operational requirements are drafted and refined, a detailed operations model is needed that includes all inflows and outflows of the Proposed Project.	The combined average annual runoff volume for Funks and Stone Corral Creeks is roughly 14 thousand acre-feet (TAF) per year. This is a small volume compared to total reservoir storage of up to 1,500 TAF, and it would have a minor effect on storage. It therefore does not need to be incorporated into the CALSIM II modeling describing Project effects on Sacramento River flow, Yolo Bypass flow, and Sites Reservoir storage. Emergency spills are not part of the USRDOM modeling because, as described in Chapter 5, Surface Water Resources, the subsection titled Reservoir Emergency Releases under Section 5.6, Impact Analysis and Mitigation Measures, emergency spills are not expected to occur. This is because the primary inflow to the reservoir, diversions from the Sacramento River, would be controlled through pumping. Flow requirements for Funks and Stone Corral Creeks downstream of Sites Reservoir are further described in Appendix 2D, Best

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		Management Practices, Management Plans, and Technical Studies, Section 2D.4, Stone Corral Creek and Funks Creek Aquatic Study Plan and Adaptive Management. This section includes draft study plans to inform the development of flow requirements for Funks and Stone Corral Creeks. Using information from these field studies, along with currently available information, the Authority will prepare a Funks and Stone Corral Creeks flow schedule that could be incorporated into the Reservoir Operations Plan that will identify the approach for releases, including release schedules and volumes, a monitoring plan, and an adaptive management plan to maintain fish in good condition consistent with California Fish and Game Code Section 5937 in Funks and Stone Corral Creeks. The presentation of model results in Chapter 5, Surface Water Resources, Section 5.4, Hydrologic Modeling Results, is provided for the reader to understand basic hydrologic effects that may occur because of the Project. It is not meant to be a detailed evaluation of all changes, nor is it an impact assessment. Other more specific and detailed metrics are used in other resource chapters for impact assessment, and more detailed model results are presented in the model results appendices (e.g., Appendix 5B, Water Resources Modeling System). Exceedance plots are provided for each model output parameter. Additionally, in Appendix 5B5, Water Supply, model results are tabulated at 10% exceedance increments. Please refer to Master Response 3, Hydrology and Hydrologic Modeling, regarding more information on the use of CALSIM II results. Results are used and presented depending on the impact mechanism evaluated; therefore, masking potential adverse effects, as suggested by the commenter, would not occur.
77-32	ATTMT 1. Chapter or Appendix - Section: Chapter 5 - Section 5.4.1, CALSIM. Page(s): General Comment. Comment and Recommendations: The CalSim II	Please see Master Response 5, Aquatic Biological Resources, for a discussion of monthly and daily modeling results in analyses. The

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	model uses a monthly time step leading to the use of monthly averaged flow data as inputs. Proposed Project diversion operations are most likely to occur on a sub-monthly time step targeting specific flow events with many associated impacts likewise occurring on a sub-monthly flow event specific basis; therefore, the use of average monthly flow data is unlikely to capture the relative peak timings of flows and outmigration of the more vulnerable life stages. Similarly, the use of summary statistics as inputs and grouping of results can dampen the level of modeled effect fish may experience at a smaller time scale, which may underestimate the actual impact of modeled operations on fish survival. As such, presentation of results in this format coupled with analysis dependent on CalSim II monthly average flow inputs may be incapable of detecting, accurately quantifying, or portraying the comparative effect of significant impacts of Proposed Project operations alternatives on fish species (Simenstad et al. 2017).	commenter focuses on results in Chapter 5, Surface Water Resources; however, key analyses in Chapter 11, Aquatic Biological Resources, use daily modeling results. For example, very much related to the commenter's concerns, the migration flow-survival analysis presented in Appendix 11P, Riverine Flow-Survival, is not dependent on CALSIM modeling results, but instead uses the Daily Divertible and Storable Flow Tool combined with the statistical code from Michel et al. (2021), specifically linking flows to daily fish movement as indicated by monitoring data. Please also see Master Response 5 for a discussion of flows and mitigation measures.
77-33	ATTMT 1. Chapter or Appendix - Section: Chapter 5 - Section 5.4.1.1, Summary of General Changes in Hydrology. Page(s): pp. 5-30, 5-33. Comment and Recommendations: The Proposed Project would exchange water with Shasta Lake to help preserve the cold water pool and provide benefits to anadromous fish. The hydrologic analyses presented in the RDEIR/SDEIS (Table 5-11, p. 5-30) shows on average no increases in Shasta Lake storage in wet years and minimal increases (2-4%) on average in critically dry years, while flow on the Sacramento River decreases by 10-11%, on average, in May (Table 5-16, p. 5-33) of critically dry years due to the exchanges, when compared with the No Action Alternative. There are many factors that affect Shasta Lake cold water pool management and preserving relatively small volumes of water in Shasta Lake in the spring and summer will not necessarily result in meaningful temperature benefits later in the year. CDFW is concerned that any benefit derived from these exchanges may be overshadowed by the adverse impacts to anadromous fish caused by the	Reductions in flow do not necessarily have negative effects on anadromous salmonid populations. Spawning and rearing habitat weighted usable area (WUA), for example, typically peak at intermediate flows and are reduced at flows that are lower or higher than these flows. For examples, please refer to the WUA curves in Appendix 11K, Weighted Usable Area Analysis, in Figures 11K-2 through 11K-10. Effects of spring flow reductions on anadromous fish in the Sacramento River were evaluated using a suite of analyses methods (see Appendices 11K and 11N, Other Flow-Related Upstream Analyses, in the RDEIR/SDEIS). For example, see Tables 11K-2 and 11K-4 in Appendix 11K. These analyses show 5% to 6% reductions for Alternatives 1, 2, and 3 in May of Critically Dry Water Years in winter-run spawning habitat WUA downstream of Keswick Dam (Segment 6) and increases in May of Critically Dry Water Years of 5% to 6%

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	reduction in flow on the Sacramento River, due to exchanges, in the spring of critically dry years.	downstream of Cow Creek (Segment 4). The Keswick reach is more important for winter-run spawning than the Cow Creek reach, so this reduction represents a negative effect on winter-run spawning habitat. However, as shown in the RDEIR/SDEIS, all other flow effects in May of Critically Dry Water Years were positive, including rearing habitat WUA for spring-run (Tables 11K-32–11K-34 in Appendix 11K), late fall-run (Tables 11K-41- 11K-43 in Appendix 11K), and steelhead (Tables 11K-47–11K-49 in Appendix 11K), as well as late fall-run and steelhead juvenile stranding (Tables 11N-28 -11N-30 in Appendix 11N). Also, as shown in Appendix 11K, under the revised Project operations proposed for the Final EIR/EIS, WUA analyses indicate that any negative effects on winter-run spawning WUA were small (all reductions <4%) in all of the river segments. Integrated potential positive and negative effects from exchanges (and the other operational effects of Alternatives 1, 2, and 3) are illustrated with the results from the winter-run Chinook salmon life cycle models, IOS and OBAN. These models generally show limited differences between Alternatives 1, 2, and 3 and the No Project Alternative.
77-34	ATTMT 1. Chapter or Appendix - Section: Chapter 5 - Section 5.4.1.1, Summary of General Changes in Hydrology. Page(s): p. 5-33. Comment and Recommendations: The RDEIR/SDEIS shows potentially significant adverse impacts to aquatic biological resources due to Proposed Project diversions on the Sacramento River during the October-June period for Alternatives 1, 2, and 3. CDFW is concerned that reductions in flow due to Proposed Project operations are most pronounced in critically dry years, when biological aquatic resources are stressed and most vulnerable to further reductions in flow. For example, Table 5-16 (p. 5-33) shows an average 5-11% reduction in flow in critically dry years, near Wilkins Slough, for the period between December-May when flows during that time are on average	The commenter expressed concerns regarding reducing potential adverse effects of diversion to less than significant. As described further in the discussion of flows and mitigation measures in Master Response 5, Aquatic Biological Resources, in the Final EIR/EIS, Alternatives 1, 2, and 3 include refined Wilkins Slough bypass flow criteria of 10,700 cubic feet per second (cfs) from October 1 to June 14 (please also see Master Response 2, Alternatives Description and Baseline). As a result, there are smaller differences in flows. Using the example provided by the commenter, the difference in mean December-May flows near Wilkins Slough in Critically Dry Water Years is reduced from 5% to 11% in the RDEIR/SDEIS to less than 1% to less

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	already significantly below the 50% survival threshold of 10,712 cfs (Michel et. Al. 2021) for juvenile Chinook salmon. Adverse impacts, caused by the reduction of flow from Proposed Project diversions, are likely to occur to many aquatic species, not just juvenile Chinook salmon, already stressed in the Sacramento River system. As a result, CDFW recommends the Proposed Project increase minimum bypass flow requirements to reduce the adverse impacts of diversions to less than significant.	than 5% in the Final EIR/EIS, and analyses of potential biological effects in the Final EIR/EIS reflect these updates.
77-35	ATTMT 1. Chapter or Appendix - Section: Chapter 5 - Section 5.4.1.1, Summary of General Changes in Hydrology. Page(s): p. 5-36. Comment and Recommendations: The Proposed Project proposes exchanges that would preserve storage and the cold water pool in Lake Oroville for use later in the season (August and September). The preservation of the cold water pool in Lake Oroville is generally not an issue of concern given the depth of the reservoir and sufficient volume of cold water through the summer. CDFW is concerned that these exchanges could alter flows on the Feather River adversely impacting biological aquatic resources. For example, the Proposed Project increases flow in the fall of critically dry years by 5-25% (Table 5-23, p. 5-36), which could result in the dewatering of fall-run Chinook salmon redds and steelhead redds when flows recede. The RDEIR/SDEIS's hydrologic analysis also shows flow declines of 3-14% (Table 5-23, p. 5-36) on the Feather River in critically dry years, in the months of June and July, which has the potential to adversely impact migrating and emigrating spring-run Chinook salmon and green sturgeon. CDFW is also concerned that the proposed exchanges could interfere with Oroville Reservoir operations, potentially impacting future planned ecosystem water releases out of the reservoir. CDFW recommends that the FEIR/FEIS include a detailed analysis of the effects of the proposed exchanges on Oroville Reservoir operations, to assess potential impacts and weigh the costs versus benefits of conducting the proposed exchanges.	Modeling refinements for the Project, which are presented in the Final EIR/EIS, have resulted in some reduction of the magnitude of effect in the Feather River. During Critically Dry Water Years, simulated flows at the mouth of the Feather River decrease in June and July by up to 12% and increase during August–November by up to 12%. As shown in Chapter 5, Surface Water Resources, Table 5-22, the effect of the exchanges on Lake Oroville storage is small. As a result, exchanges are not expected to affect future ecosystem water releases. The modeled exchanges represent a reasonable estimate of future operations. Actual operations and exchanges would be managed in real time according to the Reservoir Operations Plan and agreements between the Authority, Reclamation, and others. The original redd dewatering analysis for the Feather River, which was entirely based on month-to-month flow reductions during the period of spawning and egg/alevin incubation for Chinook salmon and steelhead, suggested a large potential for redd dewatering of Chinook redds in the high-flow channel, but little such potential for steelhead redds (see Section 11N.3.1.2, Feather River, of Appendix 11N, Other Flow-Related Upstream Analyses). Recently, a more comprehensive redd dewatering analysis was prepared for the Final EIR/EIS that includes changes in river stage and redd distributions. This analysis, like the previous analysis, shows substantial dewatering

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		effects for spring-run spawning in September, primarily in Wet Water Years, but this analysis shows little or no dewatering effects on fall-run Chinook salmon and positive effects on steelhead. Note that most salmonid spawning in the Feather River occurs in the low-flow channel where flows change little and where none of the Project alternatives affect flows. Adult spring-run generally migrate into the Feather River from about March through June and hold in the river until spawning during September through November. As noted by the commenter, modeled flow under the Project alternatives during June and July of Critically Dry Water Years is up to 12% lower at the mouth of the river. Although the highest reductions are large, the lowest resulting flow would be about 2,900 cfs, which is likely sufficient for adult immigration. As discussed in Appendix 11N, Section 11N.2.4, Low-Flow Passage Effects on Immigrating Salmon and Sturgeon Adults, the principal impediment to upstream migration of salmonids in the Feather River high-flow channel is the boulder weir at the Sunset Pumps. The threshold for upstream passage over this weir is estimated to be about 1,500 cfs, well below the 2,900 cfs minimum expected June through July flow under the Project alternatives. Note that the overall frequency of flows below 1,500 cfs in the Feather River at Thermalito is expected to differ little between the No Project Alternative and the Project alternatives (Appendix 11N, Table 11N-39). Little is known about environmental cues that could trigger and/or guide adult salmon upstream migrations to Feather River spawning grounds, but June is late in the spring-run immigration period. Any such cues would be much less important by this time of year. Juvenile Feather River spring-run emigrate from about November through June. The relationship between Feather River spring-run

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		emigration survival and flow is unknown. Large changes in flow affect survival of emigrating salmon in the Sacramento River (Michel et al. 2021), and this may also be true for the Feather River, but no such relationship has been demonstrated (Bilski and Kindopp 2009). Most juveniles have likely completed their emigration by June, which would reduce any impact of reduced flows on the juvenile population, if any exists. Green sturgeon adults immigrate to Feather River spawning areas from about February to June, and the larvae and juveniles rear in and migrate from the river from about May through December, assuming their behaviors are similar to those observed in the Sacramento River. However, green sturgeon likely spawn in the Feather River only during wet, high-flow years (Heublein et al. 2017, Seesholtz et al. 2015). In most years, especially Critically Dry Water Years, temperatures downstream of the Thermalito Afterbay outlet are too warm for normal egg incubation by late May (Heublein et al. 2017).
77-36	ATTMT 1. Chapter or Appendix - Section: Chapter 5 - Section 5.4.1.1, Summary of General Changes in Hydrology. Page(s): p. 5-37. Comment and Recommendations: Folsom Lake Exchanges could potentially lead to decreased releases from Folsom Lake in the spring and early summer, which could result in decreased rearing habitat and elevated temperatures for steelhead. The RDEIR/SDEIS's hydrologic analysis shows further cause for concern as flows on the American River in the spring and summer of critically dry years decrease on average by 1-9% (Table 5-25, p. 5-37), under the preferred action alternative. Additionally, higher releases in the fall often result in fall-run Chinook salmon redd dewatering when flows cannot be maintained for egg-incubation through to emergence. CDFW recommends that the FEIR/FEIS include a detailed analysis of spring, summer, and fall	Please see Master Response 3, Hydrology and Hydrologic Modeling, for a discussion regarding exchanges and the representation of exchanges in the model. Of note, Folsom Lake exchanges were removed from the Project description, and these exchanges were not part of the modeling assumptions. The aquatic effects analysis in Chapter 11, Aquatic Biological Resources, examines potential flow-related and water temperature–related effects on fall-run Chinook salmon and steelhead at multiple locations in the American River. The farthest upstream location is Hazel Avenue just below Nimbus Dam. The analysis looks at potential effects on each life stage of fall-run Chinook salmon and steelhead in the river throughout the year, including redd dewatering. Please see Impact FISH-4 in Chapter 11 for a summary of findings regarding fall-

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	releases from Folsom Lake to assess potential impacts that may result from the proposed exchanges with the Proposed Project.	run redd dewatering and Appendix 11N, Other Flow-Related Upstream Analyses, Section 11N.3.1.3, American River, for detailed results. The analysis finds no significant or adverse effects on fall-run Chinook salmon. Similar discussions for steelhead are found in Impact FISH-5. Note that the proposed American River Water Agencies Modified Flow Management Standard (Exhibit ARWA-502), which Reclamation has committed to implement (Bureau of Reclamation 2019b), includes adjustment to their minimum release requirements to protect fall-run redds from dewatering. These adjustments would be implemented under all the Project alternatives.
77-37	ATTMT 1. Chapter or Appendix - Section: Chapter 6 - Surface Water Quality. Page(s): General Comment. Comment and Recommendations: Water quality analyses depend on models that use outputs from CalSim II, for which the output is on a monthly time step. However, daily and weekly changes to water quality can often have lethal or sub-lethal effects on aquatic resources, which a monthly time step cannot capture. Although the timestep for the Sacramento River temperature model (HEC-5q) is 6-hours, the inputs and outputs were monthly-averaged. To adequately analyze and disclose potentially significant impacts, CDFW recommends that the RDEIR/SDEIS's analyses of water quality impacts include a daily time series analysis. Additionally, the worst-case conditions must be analyzed on a daily time-step, e.g., Sacramento River daily maximum temperature increases in summer due to maximum allowable diversions.	Please refer to Master Response 3, Hydrology and Hydrologic Modeling, regarding the use of a monthly time step for the effects analysis. Although Chapter 6, Surface Water Quality, presents the HEC5Q water temperature model outputs as monthly means, the analysis of temperature-related effects on aquatic resources uses a daily time step, including the 7-day average daily maximum values (7DADM), for the Sacramento and American Rivers, the two rivers for which HEC5Q model outputs were available. Please refer to Appendix 11B, Upstream Fisheries Impact Assessment Quantitative Methods, for a description of the analysis; Appendix 11D, Fisheries Water Temperature Assessment, for results of the analysis; and Chapter 11, Aquatic Biological Resources, for a summary of results for each aquatic species and life stage evaluated.
77-38	ATTMT 1. Chapter or Appendix - Section: Chapter 6 - Section 6.2.2.6, Harmful Algal Blooms (HABs). Page(s): p. 6-23. Comment and Recommendations: Harmful algal blooms (HABs) include a wide range phytoplankton such as diatoms and dinoflagellates, in addition to cyanobacteria. Cyanotoxins may be present in water, sediment, and biological organisms even if a bloom isn't observed. Microcystis is the dominant cyanobacteria in California, but Aphanizomenon and	Chapter 6, Surface Water Quality, Section 6.2, Environmental Setting, of the Final EIR/EIS has been revised to include a brief discussion of planktonic and benthic cyanobacteria, including examples of common genera of each that may occur in freshwater surface waterbodies in California. This revision clarifies information already contained in the document regarding HABs. This revision does not change conclusions or impact determinations identified in the analysis.

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	Dolichopermum are becoming more abundant (Lehman et al. 2021). CDFW recommends that the FEIR/FEIS consider other potential sources of HABs in its analysis.	
77-39	ATTMT 1. Chapter or Appendix - Section: Chapter 6 - Section 6.3.2.5, Water Temperature. Page(s): p. 6-34. Comment and Recommendations: Model limitations may obscure the magnitude of the Proposed Project's temperature impacts to the Sacramento River. The Sites reservoir temperature model does not include inflows or outflows for Funks Creek or Stone Corral Creek. It is assumed that the reservoir will stratify as a typical Northern California Reservoir, but the pump outlet location and flat topography (higher winds) may lead to a well-mixed reservoir. An example from another "off-channel" storage project, the San Luis Reservoir Draft Resource Management Plan (2012, p. 2-19) states "Because of constant pumping and mixing of its water, San Luis Reservoir does not typically develop a thermocline." CDFW recommends further analysis on the Proposed Project's stratification potential.	Although graphs illustrating reservoir temperature stratification were not included in the RDEIR/SDEIS, extensive modeling showing reservoir stratification has already been performed. The volume of inflow from Stone Corral Creek and Funks Creek is small, estimated to be a combined average of 14 TAF per year, and is unlikely to substantially affect water temperature in Sites Reservoir. The CE QUAL W2 model was used to simulate water temperatures in Sites Reservoir, as described in Chapter 6, Surface Water Quality, and Appendix 6D, Sites Reservoir Discharge Temperature Modeling. These simulations incorporate wind measurements and consider the shape of the reservoir. The wind values were based on measurements collected at the California Irrigation Management Information System station near the City of Durham, approximately 35 miles east of the reservoir site. These model results indicate that the reservoir would be stratified during all but the coldest months. Simulated temperature profiles shown in Master Response 4, Water Quality, illustrate that temperature stratification is expected to occur even under conditions of low reservoir storage. Pumping at Sites Reservoir would not be constant. Pumping would be used to fill the reservoir only during periods of excess flow in the Sacramento River, and releases for water supply would occur later.
77-40	ATTMT 1. Chapter or Appendix - Section: Chapter 6 - Section 6.3.2.5, Water Temperature. Page(s): p. 6-34. Comment and Recommendations: The RDEIR/SDEIS's temperature modeling does not consider agricultural runoff, which may increase the solar radiation potential of the discharged water. Warm releases from the Proposed Project are targeted for rice farming, and this water will warm further on the rice fields, which presumably will be	As described in Chapter 32, Other Required Analyses, the Project would increase water supply reliability during Dry and Critically Dry Water Years. Increased reliability may allow agricultural users to make different decisions than they otherwise would (e.g., grow crops more consistently on the same agricultural acreage and reduce the need to fallow land in drought years, change the cropping pattern). Surface

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	returned to the Yolo Bypass and/or Sacramento River. This has the potential to impact water quality in the Yolo Bypass and Sacramento River through reductions in dissolved oxygen and increases in water temperature. CDFW recommends that the FEIR/FEIS include an analysis of the effects of agricultural runoff, resulting from Project operations, on dissolved oxygen levels and water temperature.	water deliveries from Sites Reservoir storage may also be used to avoid irrigation with groundwater. As shown in Table 32-2 in Chapter 32, the estimated percent increase in total agricultural deliveries would be small. The largest percent increase is 9% under Alternative 3 for the San Francisco Bay hydrologic region for Dry and Critically Dry Water Years. This percent increase is large compared to other regions because the total amount of agricultural land and associated agricultural water supply in this region is relatively small, so an increase of only 2 TAF in water supply (Table 32-1) is able to cause this increase. The largest increases in deliveries would occur under dry conditions and could increase agricultural acreage under dry conditions somewhat but are not expected to cause much change in acreage under conditions of full water supply. Consequently, it is unlikely there would be a substantial increase in total agricultural acreage, and agricultural runoff is not expected to increase under Project conditions. Furthermore, agricultural runoff is currently regulated by the existing Irrigated Lands Regulatory Program, which protects water quality.
77-41	ATTMT 1. Chapter or Appendix - Section: Chapter 6 - Section 6.3.2.8, Harmful Algal Blooms (HABs). Page(s): p. 6-37, 38. Comment and Recommendations: The RDEIR/SDEIS takes into consideration reservoir water levels and potential effects of HABs. However, it is unclear and unlikely that the reservoir modeling conducted can evaluate whether or not HABs or toxins will be released from the reservoir. CDFW recommends the creation of a monitoring plan of phytoplankton and cyanotoxins that includes the reservoir and downstream locations.	The modeling used to inform the HABs impact analysis for Sites Reservoir in Chapter 6, Surface Water Quality, is related to water temperature, which informs the analysis in terms of whether there is potential for HABs to form, in addition to qualitative consideration of nutrient levels and water residence time. Modeled water surface elevations for Alternatives 1, 2, and 3 were considered within the context of the lowest I/O tower port elevations and the low-level intake to qualitatively assess the potential for releases of potentially high concentrations of cyanobacteria and cyanotoxins from the

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		reservoir. The environmental fate and transport of cyanobacteria and cyanotoxins in reservoir releases was also considered (i.e., dilution, biodegradation, adsorption to sediment, and photodegradation). Given the management of the depth from which reservoir releases are made via I/O tower and the implementation of reservoir HABs monitoring and management actions as part of the Project's reservoir management plan, monitoring of cyanobacteria and cyanotoxins in Stone Corral and Funks Creeks, and the adaptive management approach regarding reservoir releases from the reservoir based on water quality conditions in the reservoir, the potential impact of HABs would be less than significant. Please see Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, regarding monitoring protocols and potential locations of monitoring related to water quality constituents, including HABs (Sections 2D.3.1, Harmful Algal Blooms, and 2D.3.7, Adaptive Management of Water Quality in Reservoir Releases). Text was added to Appendix 2D indicating that water samples will be collected at multiple locations within the reservoir and downstream for microscopic visualization. Text was also added to describe the adaptive management of water quality in Sites Reservoir releases (Section 2D.3.7). These text revisions do not change or modify the impact determinations or conclusions made in the analysis. In addition, the Authority and Reclamation have added cyanobacteria and cyanotoxin monitoring to the stream bioassessment component of Section 2D.4, Stone Corral Creek and Funks Creek Aquatic Study Plan and Adaptive Management. Please refer to Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower to control releases of water quality constituents.
77-42	ATTMT 1. Chapter or Appendix - Section: Chapter 6 - Section 6.3.2.9, Mercury and Methylmercury. Page(s): p. 6-38. Comment and	The intent of the releases from Sites Reservoir to the Yolo Bypass is to temporally and spatially distribute food sources for fish species. If the

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	Recommendations: CDFW suggests that the FEIR/FEIS provide additional analysis on the potential impacts of increased flooding on methylmercury formation in the Yolo Bypass due to August-October flows and releases for Storage Partners. Table 11-13 (p.11-115) indicates that Yolo Bypass flooding could increase by hundreds of acres between August-October due to these flows, which would potentially increase methylmercury formation. Releases for Storage Partners along the CBD, Yolo Bypass, and North Bay Aqueduct may also impact methylmercury formation if releases are not contained within the Tule Canal/Toe Drain.	water inundates floodplain areas (i.e., areas outside existing channels), the food resources would be deposited and would fail to move into the Delta. As such, Sites Reservoir would be operated to maintain flows within the existing Toe Drain, Tule Canal, and other channels, and adjustments in operations would be coordinated between the Authority and parcel owners using the existing Yolo Bypass monitoring network. Clarification has been added to Chapter 6, Surface Water Quality, for the mercury/methylmercury analysis. This clarifying text does not change the conclusions or impact determinations identified in the analysis. There is currently one Storage Partner who would potentially receive a relatively small delivery from the North Bay Aqueduct via the Sacramento River. Water from Sites Reservoir for this delivery would not be routed through Yolo Bypass. There are no Storage Partners expected to take deliveries along the Colusa Basin Drain or Yolo Bypass.
77-43	ATTMT 1. Chapter or Appendix - Section: Chapter 6 - Impact WQ-2, Violate any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water Quality During Operation. Page(s): p. 6-72. Comment and Recommendations: The RDEIR/SDEIS states that "Sites Reservoir releases to the Yolo Bypass would not be expected to violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality in Yolo Bypass . . . With regard to . . . [Dissolved Oxygen] DO" (p. 6-72). CDFW disagrees with this conclusion as DWR's recent synthesis report for the North Delta Food Subsidy study from 2013-2019 showed DO levels in the Yolo Bypass Toe Drain at Lisbon Weir were reduced during the flow pulse in all years (Davis et al. 2021). As indicated in Appendix 6A, the CBD and Knights Landing Ridge Cut (KLRC) are both on the 303(d) List of Impaired Water Bodies for	The North Delta Flow Action studies were reviewed and considered in the analysis in the RDEIR/SDEIS. It is acknowledged in Chapter 6, Surface Water Quality, that dissolved oxygen (DO) levels in the Yolo Bypass may be temporarily affected by habitat releases during the release period (Impact WQ-2) like what occurred during the 2018 and 2019 North Delta Flow Action (aka North Delta Food Subsidy) studies. Additional analysis has been added to Chapter 6 (Impact WQ-2) of the Final EIR/EIS explaining that there appears to be a general correlation between flows in Yolo Bypass and DO levels (as measured in the Yolo Bypass Toe Drain near Lisbon Weir), which is apparent in years when the North Delta Food Subsidy studies have been run (e.g., 2018 and 2019) and in non-managed flow years (e.g., 2020). In addition, text has been added to Chapter 6 noting that DO levels in

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	DO. Conveying water through the CBD and KLRC has the potential to transport low-DO water downstream into the Yolo Bypass. The proposed Yolo Bypass habitat flows will occur within a three-month period between August-October, potentially impacting DO levels in the Yolo Bypass during the entire release period. Releases for Storage Partners along the CBD, Yolo Bypass, and North Bay Aqueduct may also impact DO levels. CDFW recommends providing additional analysis on the potential impacts of transporting water through the Yolo Bypass on DO levels. CDFW suggests including relevant findings from the 2013-2019 North Delta Food Subsidy study related to DO.	non-managed pulse flow years also temporarily drop below the 5.0 milligrams per liter (mg/L) Delta DO objective. DO levels would not be expected to be substantially different from current conditions during the habitat releases from Sites Reservoir. The additional analysis included in Chapter 6 supports the conclusions previously described for DO in the RDEIR/SDEIS and does not change conclusions or impact determinations. The potential effects on special-status fish species (specifically delta smelt) that may result from a Project-related reduction in DO in the Yolo Bypass is discussed in Chapter 11, Aquatic Biological Resources. There is currently one Storage Partner who would potentially receive a relatively small delivery from the North Bay Aqueduct via the Sacramento River. Sites Reservoir may have low DO levels, particularly if releases were made from the hypolimnion. However, as discussed in Chapter 6, water would become aerated upon release, and releases would generally contribute to only a small fraction of the flow in the Sacramento River. Water from Sites Reservoir for this delivery would not be routed through Yolo Bypass. There are no Storage Partners expected to take deliveries along the Colusa Basin Drain or Yolo Bypass.
77-44	ATTMT 1. Chapter or Appendix - Section: Chapter 6 - Impact WQ-2, Sites Reservoir. Page(s): pp. 6-88, 89. Comment and Recommendations: The RDEIR/SDEIS considers that the concentration of cyanotoxins would depend on the magnitude of the bloom, but the assumptions listed in the RDEIR/SDEIS for considering causes of concern are overly simplistic. Microcystis has a pelagic and benthic state. Microcystins can be found in water, sediment, and biological organisms. Latour et al. 2007 found benthic Microcystis colonies at 70 centimeters deep in sediment, with an	The Authority and Reclamation acknowledge the complexities of the environmental fate of cyanotoxins and of cyanobacteria in general in Chapter 6, Surface Water Quality. Text highlighting some of these complexities has been added to Section 6.2.2.6, Harmful Algal Blooms, of Chapter 6 including clarification on biodegradation and photodegradation rates, sediment adsorption of cyanotoxins in the context of fate and transport, “overwintering” of some species of cyanobacteria in or on sediment, and additional general information

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	approximate age of 14, suggesting Microcystis and it's toxin can persist in lake sediments. Biodegradation does occur but it depends on other conditions such as adsorption rate, temperature, and pH. A strain of microcystin, Microcystin-LR, has high affinity to organic matter (Wu et al. 2011; Pawlick and Kornijo et al. 2010). Dissolved microcystins can adsorb to suspended particulate matter as a pathway of transport to downstream regions, including marine environments. (Liu et al.2008). Bivalves, or clams, can have long depuration phase of removing toxins as found in Miller et al. 2010 and Gibble et al. 2016. CDFW recommends that the Proposed FEIR/FEIS acknowledge the complexities of cyanobacteria as being both pelagic and benthic. Cyanotoxins are extremely complex and while they may biodegrade and photodegrade, they can be present in water, suspended sediment, bottom sediment, and biological organisms.	on benthic cyanobacteria. This text does not change the conclusion or impact determination identified in the analysis. Cyanobacteria are essentially ubiquitous in freshwater and marine environments but do not always result in adverse environmental or public health effects simply due to their presence. Similarly, the presence of cyanotoxins in water, suspended sediment, and/or bottom sediment does not necessarily indicate that there would be an overall adverse effect on water quality, public health, aquatic resources, or wildlife.
77-45	ATTMT 1. Chapter or Appendix - Section: Chapter 6 - Impact WQ-2, Yolo Bypass and The Delta. Page(s): p. 6-90. Comment and Recommendations: Aulacoseira is a diatom, which is considered a good food source in general. However, results from Jungbluth et al. 2020, suggests Aulacoseira may not serve as an accessible food source. The North Delta Food Subsidy Synthesis (Davis et al. 2021) found the flow action in 2016 significantly lowered biovolume (Figure 4-1 and Table 4-2). While Aulacoseira was detected in downstream stations, it is unlikely that it was transported from the north due to the flow action since Aulacoseira was observed at very low levels at the upstream stations. Frantzich et al. 2021 conclude phytoplankton taxa were not significantly different before, during, and after the flow pulse.	The comment is referring to text in the Impact WQ-2 discussion for Yolo Bypass and the Delta, which notes that in the 2016 North Delta Flow Action study, a phytoplankton bloom (Aulacoseira granulata) was observed following the pulse flow. The text has been revised in the Final EIR/EIS to highlight that during the 2018 and 2019 North Delta Food Subsidy studies, there was no apparent increase in average biovolume of cyanobacteria between the pre- and post-agricultural water pulse in the Yolo Bypass or in the lower Sacramento River except in the Toe Drain at Road 22 in the 2019 study (Davis et al. 2022). This text revision does not change conclusions or impact determinations identified in the analysis.
77-46	ATTMT 1. Chapter or Appendix - Section: Chapter 6 - Impact WQ-2, Violate any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water Quality During Operation. Page(s): p. 6-90. Comment and Recommendations: The RDEIR/SDEIS states that "according to the [Harmful Algal Blooms] HABs voluntary reports database (California HABs Portal maintained by the California Water Quality	Upon review of data sets referenced by the comment, the Authority and Reclamation acknowledge that Microcystis has been observed at some monitoring stations in the north Delta and at the screw trap in the Toe Drain in Yolo Bypass. However, the presence of toxic cyanobacteria, in this case Microcystis, is not the same as the presence of HABs. There was no notation of any Microcystis bloom

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	Monitoring Council; State Water Resources Control Board 2021a) HABs have not been reported in Yolo Bypass in previous years." (p. 6-90) Microcystis has been observed in the north delta and Yolo Bypass areas in the datasets from the following sources: DWR's Yolo Bypass Fish Monitoring Program; DWR's North Central Region Office dataset; CDFW's Fall Midwater Trawl Survey; and CDFW's Summer Townet Survey. The California HABs portal currently is missing all or most of Interagency Ecological Program data. CDFW suggests that the Proposed Project incorporates this information into their impact analysis in the FEIR/FEIS.	sightings in the Yolo Bypass in the DWR's Yolo Bypass Fish Monitoring Program during the period 1999–2018 (Interagency Ecological Program et al. 2021). However, at the screw trap in the Toe Drain, the Microcystis "visual rating" was "low" (i.e., "widely scattered colonies") multiple days in the months of July, August, and September 2014 and on one day at the end of July 2015. In the 2021 Fall Midwater Trawl (FMWT) September through mid-December sampling period, based on visual assessment rankings of Microcystis spp., Microcystis density was ranked "absent" in the north Delta along the Sacramento River as far downstream as approximately Rio Vista except in September around Rio Vista, where density was ranked "low" (i.e., "visible but widely scattered Microcystis colonies") (California Department of Fish and Wildlife 2022). In the 2020 FMWT, Microcystis was absent in the same north Delta locations along the Sacramento River down to approximately Rio Vista for approximately the same sampling period (California Department of Fish and Wildlife 2021). While the text in Chapter 6, Surface Water Quality, refers to voluntary reports of HABs, this reference is valid and informative to the analysis. Text has been added to Chapter 6 to note that, via the Yolo Bypass Fish Monitoring Program, Microcystis has been observed in the Yolo Bypass, but no bloom sightings were reported as part of this monitoring effort. This text does not change conclusions or impact determinations identified in the analysis.
77-47	ATTMT 1. Chapter or Appendix - Section: Chapter 6 - Pesticides. Page(s): p. 6-91, 92. Comment and Recommendations: The RDEIR/SDEIS states that "there is still some uncertainty about whether augmented flows through the Yolo Bypass could cause increases in pesticide levels in the bypass that might be detrimental to fish or could cause increases in pesticide levels in plankton within the bypass that may provide food for fish in the Cache Slough Complex" (p. 6-91,92). CDFW agrees that there is uncertainty	There is evidence that flow pulses through the Yolo Bypass could increase phytoplankton abundance downstream of the Yolo Bypass and food supply for fish in the North Delta, including delta smelt. This conclusion is based on evaluation of flow pulses that occurred through the Yolo Bypass during 2011 through 2019 as described in Chapters 6 and 11. The magnitude of effect has been variable and the methodology for maximizing primary production has not been

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	surrounding this issue but is concerned that the RDEIR/SDEIS's pesticide impact analysis is based on a qualitative rationale that only considers why "Sites Reservoir releases through the Yolo Bypass could have a limited effect on pesticides in the Delta" (p. 6-91). There is evidence to suggest that increased flows through the Yolo Bypass could increase pesticide concentrations and that exposure to these pesticides could adversely impact aquatic biological resources. Davis et al. 2021, found significantly higher pesticide concentrations in water and zooplankton during flow pulses (Figure 3-60 and Figure 3-62). In some cases, pesticides detected exceeded EPA aquatic life benchmarks for chronic and acute toxicity. Additionally, synergistic or additive effects of pesticides, along with other stressors, may have a significant adverse impact on biological aquatic resources. 11A.1.8.4 of the RDEIR/SDEIS states that "sturgeon are at risk of harmful accumulations of toxic pollutants in their tissues, especially pesticides such as pyrethroids and heavy metals such as selenium and mercury (Israel and Klimley 2008; Stewart et al. 2004)" (p. 11A-56). Additionally, Fong et al. 2016, noted that Delta Smelt populations and other pelagic organisms are in decline likely due to the effects of multiple stressors. CDFW recommends that the FEIR/FEIS's impact analysis consider the potential impacts that may occur should the Proposed Project operations increase pesticide levels through the Yolo Bypass. CDFW also recommends that the FEIR/FEIS consider adding a section to the Water Quality chapter discussing impacts that could occur as a result of synergistic effects from multiple stressors related to water quality.	determined. There is some concern that flow pulses could relocate contaminants and reduce the expected benefits of the pulses (e.g., Davis et al. 2022:2,3). The Chapter 6, Surface Water Quality, analysis of pesticide effects associated with flow augmentation through the Yolo Bypass was based in part on Orlando et al. (2020). This report describes that pesticides could increase at some locations in response to flow pulses. Information from a draft Davis et al. (2022) report has been added to Chapter 6. The Davis et al. (2022) report documents temporarily increased concentrations of pesticides during flow pulses, but it also describes reasons why the flow pulses from Sites Reservoir might not cause substantial detrimental pesticide effects when compared to current conditions. Ultimately, the EIR/EIS determines that pesticide effects associated with flow augmentation through the Yolo Bypass could be significant without implementation of Mitigation Measure WQ-2.2, that implementation of the mitigation measure would reduce or minimize effects associated with releasing water to the Yolo Bypass related to pesticides, and that impacts would be less than significant. Synergistic effects are not well understood, and a description of the current state of knowledge regarding synergistic effects would not add to the body of information presented in Chapter 6 regarding flow augmentation in the Yolo Bypass and potential net benefit to fish. Possible synergistic and additive effects of pesticides and other stressors (e.g., temperature) are difficult to quantify based solely on concentrations. There is much uncertainty around these topics. The requirement for net benefit to fish described in Mitigation Measure WQ-2.2 would allow flow to be released in the Yolo Bypass even if pesticides increase temporarily at some locations, provided that there

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		is a net benefit. Assessment of net benefit would, by definition, need to consider synergistic effects of pesticides as described in Mitigation Measure WQ-2.2. Ultimately, net benefit might need to be determined with experiments such as the enclosure experiments that were attempted with delta smelt during the 2019 flow pulse (Davis et al. 2022:264).
77-48	ATTMT 1. Chapter or Appendix - Section: Appendix 6D - Section 2.1.2, Modeling Input Data. Page(s): p. 6D-2. Comment and Recommendations: The only meteorological input mentioned for the CE-QUAL W2 model is evaporation, which itself was not mentioned or detailed in Appendix 5B or its references. Typically, reservoir temperature models also require wind direction and speed, air temperature, and solar radiation as meteorological inputs. CDFW recommends including more meteorological inputs to CE-QUAL W2 to increase confidence in the results or expand on the description of inputs if others were included in the model.	Appendix 6D, Sites Reservoir Discharge Temperature Modeling, in the Final EIR/EIS has been revised to include details regarding the meteorological boundary conditions. These include hourly precipitation, dew point, average temperature, wind speed and direction, and percent cloud cover. The new information does not change the environmental impact findings/analysis.
77-49	ATTMT 1. Chapter or Appendix - Section: Chapter 7 - Impact FLV-1, Substantially Alter the Existing Drainage Pattern of the Site or Area. Page(s): p. 7-1. Comment and Recommendations: The Proposed Project is estimated to have a 2% reduction in suspended sediment as a result of direct diversions from the Sacramento River. This analysis does not consider the additional sediment reduction from the impoundment of sediment due to the 12,000-acre drainage area of Sites Reservoir itself. CDFW recommends analyzing the impacts due to the reduction in sediment and if necessary, mitigating for reduced sediment supply in the Delta in the FEIR/FEIS.	Further discussion regarding transport of sediment from Stone Corral and Funks Creeks has been added to Chapter 7, Fluvial Geomorphology. The average Colusa Basin drainage area suspended sediment load is approximately 5 to 10% of the average influx of suspended sediment delivered to the Delta (Gray and Pasternack 2016:171). The amount of this sediment originating from Stone Corral and Funks Creeks from upstream of the proposed reservoir that eventually reaches the Delta, however, is uncertain because some may be deposited in the Yolo Bypass (Gray and Pasternack 2016:172, 173). The Stone Corral and Funks Creeks watershed area is a fraction of the total area contributing to the Colusa Basin Drain (CBD). The Colusa Basin watershed area is approximately 1,635 square miles (Gray and Pasternack 2016:3). In contrast, the combined watershed areas of Stone Corral Creek and Funks Creek is about 81 square miles (Chapter

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		5, Surface Water Resources), representing only about 5% of the Colusa Basin watershed. Studies have shown the Inner Coast Ranges foothills portion of the watershed, through which Funks and Stone Corral flow, may produce the majority of the suspended sediment flux through the CBD (Gray and Pasternack 2016:155). The exact contribution of Stone Corral and Funks Creeks to CBD sediment load is uncertain. Flow of the creek water through depositional areas likely prevents some of the suspended sediment from Stone Corral and Funks Creeks from reaching the Sacramento River. Sediment from Funks Creek settles in the existing Funks Reservoir, and sediment from both creeks settles in the agricultural lands, private wetlands, and wildlife refuges they service or inundate under high flow conditions. Based on existing impoundments, floodplain connectivity, and watershed areas, Funks and Stone Corral Creeks are not likely substantial contributors to the total annual suspended sediment supply in the Delta. However, there is uncertainty regarding exact magnitude. Data resolution is insufficient to estimate sediment budget at a scale that would distinguish what portion of sediment delivered to the Delta is derived from Stone Corral and Funks Creeks upper watersheds versus the rest of the CBD watershed. Although Stone Corral and Funks Creeks are unlikely to be significant contributors to total suspended sediment in the Delta, Final EIR/EIS Impact FLV-1 was updated to acknowledge the uncertainty in the suspended sediment contribution from the creeks to the Delta.

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		A sediment monitoring plan (described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, Section 2D.5, Sediment Monitoring Plan and Adaptive Management for Sediment Diverted from the Sacramento River) will be developed to conduct sediment monitoring and modeling, to inform whether adaptive management measures such as sediment reintroduction are warranted based on estimated effects on turbidity. Appendix 2D, Section 2D.5 of the Final EIR/EIS was updated to include consideration of capture of creek sediment by the proposed reservoir. A multi-agency sediment technical team will collaborate on the design of sediment management study plan and adaptive management.
77-50	ATTMT 1. Chapter or Appendix - Section: Chapter 7 - Section 7.3.2, Operation. Page(s): p. 7-10. Comment and Recommendations: The RDEIR/SDEIS used suspended sediment transport, bedload, and river meandering models that "were previously utilized in the 2017 Draft EIR/EIS for a 1.8-MAF reservoir with a Delevan Intake location on the Sacramento River" (p. 7-10). The RDEIR/SDEIS states that the previous model results are valid for the Proposed Project, because "the previous modeling results are generally conservative (i.e., higher in volume) relative to the amount of diverted water (and sediment) being considered under Alternatives 1, 2, and 3" (p. 7-10). However, while the overall amount of water being diverted has decreased in comparison to the previous configuration of the Proposed Project, the amount of water being diverted further upstream has increased to compensate for the loss of the Delevan Intake. This could result in impacts that are not captured in the current modeling. CDFW recommends that the modeling be updated to reflect the current configuration of the Proposed Project.	Chapter 7, Fluvial Geomorphology, Section 7.3.2, Methods of Analysis, Operation, explains why the previous modeling results are conservative. As described in the introduction to Appendix 7B, Hydrodynamic Geomorphic Modeling Results, the amount of water being diverted by the current Project and released is less relative to the 2017 Draft EIR/EIS, and the overall reservoir footprint is smaller. This means the previously evaluated alternatives in the 2017 Draft EIR/EIS had a higher likelihood of affecting geomorphology. Furthermore, the impact analysis does not rely solely on the 2017 modeling. For example, Impact FLV-2 uses USRDOM modeled flood flows to determine Differences in the geomorphic regimes between the various alternatives under high flows. his comment raises the specific concern that if all diversions to storage are made from two points of diversion (Red Bluff and Hamilton City) instead of three (Red Bluff, Hamilton City, and Delevan), then the diversions further upstream at Red Bluff and Hamilton City would need to increase, even though the reservoir would be smaller. However, one of the alternatives evaluated for the

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		2017 Draft EIR/EIS, Alternative B, considered diversions from only two locations, Red Bluff and Hamilton City. Comparisons between the modeled diversions at Red Bluff and Hamilton City in the 2017 Draft EIR/EIS and diversions in the Final EIR/EIS, with a focus on the months with largest diversions to Sites Reservoir storage (December–March), show that the median monthly Final EIR/EIS diversions at Red Bluff and Hamilton City are similar to or substantially less than the median monthly 2017 Draft EIR/EIS diversions at Red Bluff and Hamilton City. These comparisons have been added to Appendix 7B, Hydrodynamic Geomorphic Modeling Results, of the Final EIR/EIS. It supports that modeling performed for the 2017 Draft EIR/EIS provides a conservative estimate of effects downstream of Red Bluff and Hamilton City for the Final EIR/FEIS.
77-51	ATTMT 1. Chapter or Appendix - Section: Chapter 7 - Section 7.3.2, Operation. Page(s): p. 7-10. Comment and Recommendations: The RDEIR/SDEIS states that "the flood metrics evaluated are monthly average flows exceeded 10% of the time because this is the percent of time during which flows are relatively high and most of the geomorphic work would be performed on the Sacramento River system. These values are very close to the 2-year flood event at each station" (p. 7-10). CDFW believes that the 10% exceedance of monthly averaged flow does not have a significant meaning for geomorphic work. No supporting documentation is provided that shows that the flow values are close to the 2-year flood event. It is incorrect to assert that a change to the 2-year peak flow (50% annual exceedance probability) is equivalent or proportional to a change in the monthly-averaged 10% exceedance value. CDFW recommends that the Proposed Project complete an impact analysis using changes to 1.5 or 2-year peak flows (67% or 50% annual exceedance probability, respectively).	The 1.5-year peak flow event or the bankfull event is generally considered to be approximately 90,000 cfs (Tetra Tech 2011:2.1) in the upper Sacramento River, whereas the maximum monthly average between Shasta Lake and Red Bluff is 84,426 cfs. The purpose of the flow analysis was to demonstrate the similarities in the flow regimes between the different alternatives at a common occurrence flow that has the ability to perform geomorphic work on the system, such as suspended sediment transport as described below, thus showing that the geomorphic processes would continue to operate in a similar fashion, relative to the No Project Alternative conditions. The geomorphic analysis relies on The 1.5-year peak flow event or the bankfull event is generally considered to be approximately 90,000 cfs (Tetra Tech 2011:2.1) in the upper Sacramento River, whereas the maximum monthly average between Shasta Lake and Red Bluff is 84,426 cfs.

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		The purpose of the flow analysis was to demonstrate the similarities in the flow regimes between the different alternatives at a common occurrence flow that has the ability to perform geomorphic work on the system, such as suspended sediment transport as described below, thus showing that the geomorphic processes would continue to operate in a similar fashion, relative to the No Project Alternative conditions. The geomorphic analysis relies on suspended sediment transport, bedload, and river meandering modeling results, all of which showed no significant geomorphic changes between the alternatives and the No Project Alternative conditions (Appendix 7B, Hydrodynamic Geomorphic Modeling Results). The Channel Migration model used gage discharge records, from 35,000 cfs (similar to flow statistics reported in Chapter 7) to 90,000 cfs (similar to the 1.5-year peak flow), to estimate channel migration at multiple stations. The Channel Migration report also included flow duration curves for all alternatives, including the 50% non-exceedance probability flow, and they are similar across alternatives (Appendix 7B, Figures 4-8 through 4-10). The Sediment Loads report shows the regression coefficients used to fit suspended sediment data to a range of discharge rates at multiple gage locations (Appendix 7B, Hydrodynamic Geomorphic Modeling Results, Technical Report No. SRH-2011-22: Sediment Loads at Tehama-Colusa, Glen-Colusa, and Delevan Diversions, Tables 2-3 through 2-5). The coefficient values are grouped based on break points in the slope relationship between discharge and suspended sediment concentration. In the Sacramento River, the relationship tends to decrease in slope around 20,000 cfs and 60,000 cfs, which encapsulates the flow statistics reported in Chapter 7. The Bedload Analysis report provides flow duration curve differences from the No Project Alternative for additional reaches and in greater detail above the0.99 non-exceedance probability, because

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		higher flows do more relevant geomorphic work on bedload transport than the 50% exceedance probability (Appendix 7B, Hydrodynamic Geomorphic Modeling Results, Technical Report No. SRH-2011-23: Sacramento River Bedload Analysis of NODOS Alternatives, Figures 2-2 through 2-11). Chapter 7, Fluvial Geomorphology has been revised and now omits the statement that the values are "very close to the 2-year flood event at each station." This modification does not result in changes or modifications to impact determinations or conclusions.
77-52	ATTMT 1. Chapter or Appendix - Section: Chapter 8 - Groundwater Resources. Page(s): General Comment. Comment and Recommendations: The RDEIR/SDEIS relies on modeling from the 2017 DEIR/DEIS. The baseline conditions, as well as the alternatives, have changed since groundwater modeling was last completed. The timing and magnitude of diversions, and reservoir depth and storage all have an impact on the groundwater modeling results. The models used (CalSim, CVHM, and SACFEM) are large in geographic scope, and may not be calibrated well to local hydrology and monitoring wells. No information was provided about the localized calibration or validation of these models. For example, CalSim II does not include any local inflow to the Proposed Project, nor releases to Funks or Stone Corral creeks. Additionally, the RDEIR/SDEIS states "because diversions required to operate a larger reservoir capacity would have minimal effects on groundwater elevation and groundwater/surface water interaction (Section 8.3.2, Operation), it is reasonable to assume these effects would be even smaller under Alternatives 1, 2, and 3 because less water would be diverted for operations" (p. 8-15,16). While the RDEIR/SDEIS considers a smaller reservoir, it has also eliminated the Delevan diversion point and diversion rates at the two remaining diversion points may be higher than modeled. Therefore, the potential impact to groundwater	Conditions for groundwater levels continually fluctuate and vary over time. To address this comment, in Appendix 8A, Groundwater Resources Basin Setting, of the Final EIR/EIS, Section 8A.2.3.3, Colusa Subbasin (5-021.52), has been updated to reflect the 2020 groundwater level, which is lower but flowing in the same direction as the groundwater surveyed in 2016. The analysis evaluates the change between average historic conditions or "normal" conditions and Project alternatives, and both analyses evaluate the change between the Project and alternatives and the No Project Alternative/No Action Alternative. In this regard, the Project construction and operations would have the same general effect on groundwater levels and recharge even with a lower groundwater level (current conditions) than previously assumed in the model. Further detail on the baseline conditions is included in Master Response 2, Alternatives Description and Baseline. In addition, the 2017 groundwater modeled diversions still represent a conservative approach for potential groundwater effects, as the Delevan diversion reflected the combined diversions for a 1.8 MAF reservoir (rather than the current 1.5 MAF reservoir). Based on this higher cumulative diversion rate, the average annual volumetric difference between the 1.8 MAF and the No Project

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	elevations and river stage is unknown but will likely be greater than originally modeled. CDFW recommends that the Authority update the modeling to reflect the Proposed Project's current configuration and that local impacts to groundwater be modeled with the state-of-the-art and locally focused groundwater model used by the Colusa Groundwater Authority for the Colusa Subbasin: CV2SimFGColusa.	Alternative was still relatively small. As noted in Section 10A.3.2.5, Combined Analysis, of Appendix 8B, Groundwater Modeling, "Overall, the plots discussed above suggest that the volumetric and head/stage differences between the Project alternatives and the [No Project Alternative] in the vicinity of the Sites diversions are relatively small." Lastly, diversions would primarily take place during high flows when excess surface water would be available to reduce potential interference with groundwater recharge. In conclusion, although the groundwater diversion analysis utilized historic data from 2017, the model is still conservative based on the cumulative diversion rate and larger reservoir volume. Therefore, the analysis presented in the RDEIR/SDEIS is valid, and updated modeling would not change the presented CEQA determinations or NEPA conclusions.
77-53	ATTMT 1. Chapter or Appendix - Section: Chapter 8 - Groundwater Resources. Page(s): General Comment. Comment and Recommendations: It is anticipated that the Colusa, Yolo, and Red Bluff groundwater subbasins will formally adopt groundwater sustainability plans (GSPs) by January 31, 2022. Sustainable Management Criteria, as established in each basin's GSP, will determine what impacts to groundwater resources would be considered significant or unreasonable. CDFW recommends that the FEIR/FEIS compare the Proposed Project's anticipated impacts on groundwater resources throughout the study area to the Sustainable Management Criteria adopted in each subbasin's GSP when making significance determinations for each Project alternative.	Sustainable management criteria, as established in the Red Bluff, Colusa, and Yolo groundwater sustainability plans, have been added to Section 8A.3, Sustainable Groundwater Management, of Appendix 8A, Groundwater Resources Basin Setting, in the Final EIR/EIS. Chapter 8, Groundwater Resources, Impact GW-3, Conflict with or obstruct implementation of a sustainable groundwater management plan, has also been updated in the Final EIR/EIS to reflect the final adopted groundwater sustainability plans. These plans were also considered in the significance determination of Impacts GW-1 and GW-2. The information added to Appendix 8A and Chapter 8 does not affect or change determinations made in Chapter 8, Groundwater Resources, Section 8.4, Impact Analysis and Mitigation Measures.
77-54	ATTMT 1. Chapter or Appendix - Section: Chapter 8 - Impact GW-2, Substantial Decrease in Groundwater Supplies or Substantial Interference with Groundwater Recharge That Would Impede Sustainable Groundwater Management of the Basin. Page(s): pp. 8-13-8-18. Comment and Recommendations: The RDEIR/SDEIS estimates that the Proposed Project	Potential impacts related to changes to groundwater and groundwater/surface water interconnection from construction and operation of the Project along Stone Corral Creek and Funks Creek, in between the proposed reservoir location and the Glenn Colusa Canal, and near the diversion points on specific ecological resources are

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	will use up to one million gallons of groundwater per day for construction needs over a period of 4.5 years (p. 8-13), amounting to as much as 15% of the total annual groundwater use within the basin (p. 8-18). The RDEIR/SDEIS also anticipates that construction techniques would require dewatering (i.e., pumping and removing water from the aquifer) down to depths as great as 30 feet below ground surface to install features such as the Dunnigan pipeline (p. 8-15). Following construction, the RDEIR/SDEIS also anticipates that Proposed Project operation will reduce groundwater elevations near the diversion points. Specifically, based on the previous groundwater modeling, which as noted above likely underestimates impacts, groundwater elevations may decrease as much as 2.5 feet near the Red Bluff Pumping Plant and the GCID Hamilton City Pump Station (p. 8-15). The RDEIR/SDEIS states that the construction groundwater use "would result in a less-than-significant reduction in groundwater supply" (p. 8-18). However, the RDEIR/SDEIS only considers the potential impacts of temporary construction-related and ongoing operation-related decreased groundwater levels on sustainable groundwater management for human users of groundwater but does not consider the potential impacts on environmental users of groundwater, such as groundwater dependent ecosystems and interconnected surface waters. According to the Natural Communities Commonly Associated with Groundwater dataset (DWR 2021) (https://gis.water.ca.gov/app/NCDatasetViewer/), there are groundwater dependent ecosystems located both near the construction area (along Stone Corral Creek and Funks Creek in between the proposed reservoir location and the Glenn Colusa Canal) and near the diversion points. Decreased groundwater elevations for multiple years in these areas could negatively impact groundwater dependent ecosystems and interconnected surface waters. CDFW recommends that the FEIR/FEIS quantitatively assess the potential	addressed in the relevant ecological resource chapters in the RDEIR/SDEIS. Specifically, effects from changes to groundwater on wetlands and vegetation are addressed in Chapter 9, Vegetation and Wetland Resources; potential changes to groundwater levels from or connection with surface water to wildlife species are discussed in Chapter 10, Wildlife Resources; and potential changes to groundwater elevation or groundwater/surface water interconnection on aquatic ecosystems and species is discussed in Chapter 11, Aquatic Biological Resources. Chapter 9, Vegetation and Wetland Resources, describes the 2020 baseline conditions and hydrology in Section 9.3, Physical Setting, including Stone Corral Creek and Funks Creek. The Natural Communities Commonly Associated with Groundwater (NC) Dataset features appear to be outside of the permanent construction footprint, however, there are several wetland and vegetation features shown in the NC Dataset along Funks Creek that correspond to riparian and wetland areas included in the land cover mapping shown in Figure 9B in Appendix 9B, Vegetation and Wetland Methods and Information. Further, riparian ecosystems depend on groundwater, as well as the interaction between groundwater and streamflow, depending on the proximity of riparian species to a river or floodplain. Many riparian tree and shrub species commonly found along the Sacramento River, including box elder, cottonwood, valley oak, willows, elderberry, and coyote brush, are phreatophytes, which have deep taproot systems to access the capillary fringe above groundwater (California Department of Water Resources 2022; The Nature Conservancy 2018). Small changes in the flow of a large perennial stream, such as the

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	impacts of reduced groundwater levels, both due to construction and ongoing operations, on environmental users of groundwater near the construction area and the diversion points. Resources developed for preparation of Groundwater Sustainability Plans may be helpful, such as the Plant Rooting Depth Database (developed by The Nature Conservancy, https://groundwaterresourcehub.org/sgma-tools/gde-rooting-depths-database-for-gdes).	Sacramento River, under Project conditions would cause very minor, if any, decreases in the water table within the adjacent riparian habitat and would not decrease groundwater to a level below that accessed by riparian tree and shrub root systems. Chapter 9 Impact Analysis and Mitigation Measures discusses impacts to groundwater dependent and interconnected riparian, wetland, and stream habitats from construction and operation in Impact VEG-2 (Substantial adverse effect (i.e., loss or removal) on any riparian habitat or other sensitive natural community) and Impact VEG-3 (Substantial adverse effect (i.e., loss or removal) on state or federally protected wetlands). These analyses focus primarily on the disruption of the surface water that supports riparian, wetland, and stream habitats. Temporary construction impacts on Funks Creek are not anticipated to affect these habitats permanently. Operational impacts were concluded to not adversely affect riparian, wetland, and stream habitats. In addition, as noted in Chapter 10, Wildlife Resources, the Authority would implement BMP-15, Performance of Site-Specific Drainage Evaluations, Design, and Implementation, which requires professional hydrologists and civil engineers to evaluate and identify predevelopment hydrology based on site-specific conditions and local meteorology by using continuous simulation modeling techniques, published data or studies, or other established tools for any Project elements within 250 feet of a seasonal wetland. Chapter 10, Wildlife Resources, discusses impacts on groundwater dependent and interconnected terrestrial wildlife from Project construction and operations. The Section 10.4, Impact Analysis and Mitigation Measures, Amphibians and Reptiles subsection in Chapter 10 discusses species effects from changes to the hydrologic regime along Stone Corral Creek and Funks Creek, as well species effects as a

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		result of modifications to the hydrologic regime from changes in topography, soil compaction, and increased surface runoff along diversions and Dunnigan Pipeline. Chapter 11, Aquatic Biological Resources, discusses effects on fish from changes groundwater dependent surface water due to Project construction and operations. Stone Corral Creek and Funks Creek conditions and hydrology are discussed in Section 11.2.7, Local Drainages. Section 11.2.7.4, Hydrology, notes the primary hydrological driver is precipitation, with flows tied to storm events and overland runoff. As described in Chapter 11, Aquatic Biological Resources, the Reservoir Operations Plan would identify the approach for releases to maintain fish in Funks and Stone Corral Creeks in good condition, thereby also maintaining the wetland and riparian habitats associated with these streams. BMP-15, Performance of Site-Specific Drainage Evaluations, Design, and Implementation, and BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002 for Limited Threat Discharges to Surface Water) and State Water Resource Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the permits and any amendments thereto), will ensure effects on seasonal wetlands will be minimized. Currently, Funks and Stone Corral Creeks are ephemeral waterways which dry out seasonally, therefore the connected and dependent ecological systems along these creeks should be adapted to water fluctuation and dry periods. In addition, as noted above the Reservoir Operations Plan would identify the approach for releases to maintain

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		fish in Funks and Stone Corral Creeks in good condition, as well as maintaining the wetland and riparian habitats associated with these streams. To be conservative, additional studies looking at the flow regime and interconnection between the surface water and groundwater along the Funks and Stone Corral Creeks are planned and outlined in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, Section 2D.4, Stone Corral Creek and Funks Creek Aquatic Study Plan and Adaptive Management. As noted in Impact FISH-11, additional field studies are planned to determine the baseline flow schedule. This would then be incorporated into the Reservoir Operations Plan. The Reservoir Operations Plan would identify the approach for releases, including release schedules and volumes, a monitoring plan, and an adaptive management plan to maintain fish in good condition consistent with California Fish and Game Code Section 5937 in Funks and Stone Corral Creeks (the Section 2.5.2.1, Water Operations, Funks Creek and Stone Corral Creek Releases subsection in Chapter 2, Project Description and Alternatives). Studies along Funks and Stone Corral Creeks were not able to be incorporated into the RDEIR/SDEIS due to lack of permission to access the sites. Once access is granted, these field studies would be completed before final designs for Sites and Golden Gate Dams are settled. The RDEIR/SDEIS also notes that flow regime and interconnection between the surface water and groundwater at diversion facility operations at the Red Bluff Pumping Plant (RBPP) and Hamilton City Pump Station will be monitored with additional field studies conducted to verify RDEIR/SDEIS modeling and analysis to ensure that the Project does not create an adverse effect.

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		Therefore, based on the determination of groundwater effects to ecological resources discussed in Chapters 9 through 11 and implementation of best management practices, management plans, and technical studies outlined in Appendix 2D, further quantitative assessment of the potential impacts of reduced groundwater levels, both due to construction and ongoing operations is not warranted. Lastly, as noted in Impact GW-2, the clay soils in rice fields adjacent to the Dunnigan Pipeline would act as a barrier between the construction dewatering depth and basin aquifer. Therefore, effects from dewatering during installation of Dunnigan Pipeline would be localized.
77-55	ATTMT 1. Chapter or Appendix - Section: Chapter 9 - Mitigation Measure VEG-1.1, Conduct Appropriately Timed Surveys for Special-Status Plant Species Prior to Construction Activities. Page(s): p. 9-26. Comment and Recommendations: Mitigation Measure VEG-1.1 discusses conducting surveys for special-status plant species prior to construction and states the Authority will comply with the "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (California Department of Fish and Wildlife 2018)" (p. 9-26), or the most current protocols, specifically with respect to the number and timing of surveys, use of reference populations, and evaluation of negative findings. Surveys for rare annual plants need to consider compounding influences from low rainfall and rainfall timing conditions. Many annual species of the rare plants may not germinate during a prolonged drought or may be affected by rainfall timing. In some instances, it may be feasible to assume the species are present, especially if habitat is present and the species have been reported on the habitat in previous year surveys. CDFW recommends the FEIR/FEIS be updated to include rare plant surveys on the	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the timing and adequacy of the special-status plant species surveys required in mitigation measures. Chapter 9, Vegetation and Wetland Resources, states that special-status plant species surveys under Mitigation Measure VEG-1.1 will be conducted in accordance with the most recent CDFW protocols, including that surveys would occur during the seasons that special-status plant species would be evident and identifiable, which is generally during their blooming periods.

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	Proposed Project site will be conducted on the entire Proposed Project area where habitat is present and over multiple growing seasons before assuming that the species are not present within Proposed Project areas.	
77-56	ATTMT 1. Chapter or Appendix - Section: Chapter 10, Impact WILD-1g: California Red-legged Frog. Page(s): p. 10-68. Comment and Recommendations: The RDEIR/SDEIS establishes minimum flows between 0 to 100 cfs and the use of larger pulse flows to maintain habitat present immediately downstream from the Proposed Project. The minimum flows and the larger pulse flows are an estimation and will be finalized later after the RDEIR/SDEIS is certified. The RDEIR/SDEIS determines that many of the impacts to species and habitat present downstream from the reservoir within Funks and Stone Corral Creeks are less than significant based on the assumption that minimum and larger pulse flows will continue after construction of the Proposed Project. Minimum bypass flows and pulse flows are essential to maintain the habitat characteristics and the existing geomorphology of these creeks. The RDEIR/SDEIS cannot guarantee the existing Proposed Project design allows for larger pulse flows, but the less than significant determination to the species and habitat relies on the assumption that these larger pulse flows will continue after construction of the Proposed Project. Therefore, due to the uncertainty of whether these pulse flows can continue, CDFW recommends that the FEIR/FEIS include provisions to modify the Proposed Project design to allow for adequate releases that will be calculated after the document is certified. If these post-certification modifications are not feasible, the FEIR/FEISshould include an impact analysis to the species and habitat present within Funks and Stone Corral Creeks caused by missing adequate pulse flows and describe any additional avoidance, minimization, and/or mitigation measures that would be needed to reduce any potentially significant impacts to a less-than-significant level.	As described in the Water Operations section of Chapter 2, Project Description and Alternatives, and summarized in Chapter 10, Wildlife Resources, of the RDEIR/SDEIS, the Project has the capacity to provide a range of releases to Stone Corral and Funks Creeks (0 to 100 cfs), augmented by higher periodic pulse flows, if necessary, to maintain fluvial geomorphic processes in the stream channel. Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, describes the technical studies (Aquatic Study Plan) that would help determine the release schedule and volumes, should releases be found necessary to comply with California Fish and Game Code Section 5937, a requirement that dam operators provide sufficient flow below dams to keep fish in good condition, as discussed in Chapter 11, Aquatic Biological Resources, Section 11.2.7, Local Drainages. Section 2D.4.3, Flow Characterization and Geomorphic Study, in Appendix 2D describes the flow characterization and geomorphic study, which would confirm the appropriate operating regime, consistent with the commitment to not encroach on existing water rights or ecological function, including wetland function. The study will be conducted prior to construction of dams on Funks and Stone Corral Creeks to establish the unaltered hydraulic regime and unaltered geomorphic conditions. As specified in Appendix 2D, CDFW, USFWS, and Colusa County will be consulted in the development of appropriate performance standards and success criteria for the hydrologic conditions (i.e., flow releases) and geomorphic conditions on both Funks and Stone Corral Creeks and the timing of any adaptive management actions.

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77-57	ATTMT 1. Chapter or Appendix - Section: Chapter 10, Mitigation Measure WILD-1.24: Conduct Surveys for Western Burrowing Owl. Page(s): p. 10-89. Comment and Recommendations: Mitigation Measure WILD-1.24 of the RDEIR/SDEIS states that the Authority will "conduct burrowing owl surveys in accordance with CDFW's 2012 Staff Report on Burrowing Owl Mitigation (2012 Staff Report) (California Department of Fish and Game 2012)" (p. 10-89). The 2012 Staff report concludes that because burrowing owls may re-colonize a site after a few days, subsequent surveys should be conducted if more than two days pass between Proposed Project activities. CDFW recommends the FEIR/FEIS state that additional surveys will be conducted if a lapse in Proposed Project activities of two days or greater occurs.	The recommendation to conduct surveys for burrowing owls if Project activities lapse for more than 48 hours in areas that could be recolonized by burrowing owls was added to Mitigation Measure WILD-1.24. The text revisions do not change conclusions or impact determinations identified in the impact analysis related to wildlife.
77-58	ATTMT 1. Chapter or Appendix - Section: Chapter 10, Mitigation Measure WILD-1.26: Rodenticide Use. Page(s): p. 10-91. Comment and Recommendations: The 2012 Staff Report also includes avoidance measures to help avoid negative impacts that could result in take of burrowing owls, nests, or eggs through efforts to control nuisance animals as the use of rodenticides may impact non-target wildlife. Anticoagulant rodenticides, including diphacinone, have been detected in the majority of predators and scavengers tested in California (Hosea 2000), including bobcats (Lynx rufus) (Serieys et al. 2015) and raptors (Kelly et al 2014). Acute rodenticides, such as zinc phosphide, and fumigants carry much less risk of secondary exposure in wildlife and should be prioritized over anticoagulant rodenticides. CDFW recommends that the FEIR/FEIS include a measure for the Authority to develop an Integrated Pest Management Plan (IPMP) which focuses on long-term prevention of pest damage through habitat modification (Van Vuren et al 2014), incorporates biological control methods such as raptor perches and owl boxes to increase natural raptor predators, and includes limited and targeted rodenticide use when necessary. The IPMP should include measures to reduce rodent density before any anticoagulant baits are placed to reduce the number of	As described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, and incorporated into the analysis in Chapter 10, Wildlife Resources, the Authority will prepare a LMP to protect wildlife resources during management and maintenance activities on all non-recreation lands held in fee or easement (including the Project buffer) by the Authority. Land management, maintenance, and monitoring actions for any mitigation areas owned by the Authority will also be described in the LMP. These activities will include vegetation maintenance and rodent control. The LMP will require a qualified biologist to provide annual training to maintenance personnel on the general measures and practices described in the plan. The LMP will also describe monitoring activities. The development of an Integrated Pest Management Plan has been added to the LMP in Appendix 2D of the Final EIR/EIS to ensure that rodenticide use is minimized for rodent control and other long-term rodent prevention methods are used instead. Mitigation Measure WILD-1.26 requires that the Authority's use of rodenticides be minimized to the maximum extent feasible. The

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	contaminated rodents available to predators and scavengers. It should also include regular monitoring to ensure rodent control measures are taken only in response to current rodent activity. Additionally, CDFW recommends that rodenticides, anticoagulant or non-anticoagulant, are not broadcast to minimize the risk to non-target species from ingesting it directly. Furthermore, CDFW recommends that the Authority consult with California Department of Pesticide Regulation's PRESCRIBE database (https://www.cdpr.ca.gov/docs/endspec/prescint.htm) prior to any vertebrate pest control activity. The database incorporates section by section coordination with CDFW's Biogeographic Information and Observation System (BIOS) and the California Natural Diversity Database (CNDDB) to provide species-specific use restrictions over and above anything generic already on the pesticide label including use of modified bait stations (and what those modifications must be).	prohibition of broadcasting rodenticides and the recommendation to consult the California Department of Pesticide Regulation's PRESCRIBE database have been added to this mitigation measure in Chapter 10 of the Final EIR/EIS. The text addition supports content already in the mitigation measure. The text revisions do not change conclusions or impact determinations identified in the impact analysis related to wildlife.
77-59	ATTMT 1. Chapter or Appendix - Section: Chapter 10 - Mitigation Measure WILD -1.28. Page(s): p. 10-97. Comment and Recommendations: A requirement in Mitigation Measure WILD-1.28 states that, "a minimum of two aerial surveys or ground observation periods lasting at least 4 hours each will be conducted…to confirm presence/absence of golden eagle" (p. 10-97). Aerial survey methods can cover more area than ground survey efforts. CDFW recommends increasing the minimum time spent conducting ground surveys to no less than 6 hours. CDFW also requests that the Authority coordinate with CDFW regarding any potential mitigation related to bald eagle and golden eagle.	The focused surveys required by Mitigation Measure WILD-1.28 would follow current USFWS survey methods for golden eagle (Pagel et al. 2010). In 2022, the Authority completed three golden eagle surveys by helicopter and three ground surveys from public roads. The Authority and Reclamation will coordinate with CDFW and USFWS regarding any additional measures that will be incorporated into the Eagle Take Permit to reduce impacts on bald and golden eagles.
77-60	ATTMT 1. Chapter or Appendix - Section: Chapter 10 - Mitigation Measure WILD-1.31, Compensate for the Loss of Foraging Habitat for Swainson's Hawk and White-tailed Kite. Page(s): p. 10-106. Comment and Recommendations: The Proposed Project will result in the significant loss of foraging habitat, which could contribute to the reduction of Swainson's	The Authority has been consulting with CDFW regarding Swainson's hawk foraging habitat mitigation to be included in the incidental take permit (ITP). CDFW and the Authority have agreed to follow the foraging habitat mitigation guidelines in CDFW's Staff Report Regarding Mitigation for Impacts to Swainson's Hawk (Buteo

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	hawk range and abundance in Glenn County and California. To reduce the impacts to a less than significant level, CDFW recommends the FEIR/FEIS require acre for acre habitat replacement in the form of fee title acquisition with a conservation easement to protect Swainson's hawk foraging habitat. Implementation of this mitigation measure would ensure consistency of the FEIR/FEIS with the Yolo Habitat Conservation Plan/Natural Community Conservation Plan and the South Sacramento Habitat Conservation Plan mitigation strategies for this species.	swainsoni) in the Central Valley of California (California Department of Fish and Game 1994). Therefore, to maintain consistency with requirements of the ITP, the compensatory mitigation ratios in Mitigation Measure WILD-1.31 have not been modified to acre for acre habitat replacement. The Authority will continue to work with CDFW on a comprehensive mitigation strategy for Swainson's hawk as part of the permitting process and comply with the mitigation ratios in Mitigation Measure WILD-1.31 and the ITP.
77-61	ATTMT 1. Chapter or Appendix - Section: Chapter 10 - Mitigation Measure WILD-1.23, Conduct Preconstruction Surveys for Non-Raptor Nesting Migratory Birds and Implement Protective Measures if Found. Page(s): p. 10-114. Comment and Recommendations: It is unknown if the Proposed Project will impact some of the state-listed species with the potential to occur in the Proposed Project area until surveys are conducted. CDFW recommends that Mitigation Measure WILD-1.23: Conduct Preconstruction Surveys for Non-Raptor Nesting Migratory Birds and Implement Protective Measures if Found is revised in the FEIR/FEIS to also implement protective measures if preconstruction surveys detect statelisted bird species in areas outside their modeled habitat. This is especially important if the species or their nesting habitat are located within the direct project footprint. CDFW recommends that if state-listed species are found during surveys that the FEIR/FEIS includes provisions to contact CDFW to establish compliance with CESA and obtain any applicable permits prior to impacting the species. If the Proposed Project results in permanent impacts to any of these species, mitigation already disclosed in the RDEIR/SDEIS should also be implemented.	The intent of Mitigation Measure WILD-1.23 is to protect all nesting special-status bird species. Mitigation Measure WILD-1.23 has been revised to address commenter concerns regarding state-listed birds, for the purpose of the Authority's compliance with the California Endangered Species Act (CESA). The text revisions do not change conclusions or impact determinations identified in the impact analysis related to nesting migratory birds.
77-62	ATTMT 1. Chapter or Appendix - Section: Chapter 10 - Impact WILD-1o: Bank Swallow. Page(s): p. 10-117. Comment and Recommendations: Timing of flow releases can have both direct and indirect impacts to bank swallow populations. Direct impacts and potential take can occur if high flows	As described in Impact WILD-1o, operation of Sites Reservoir (flow releases) would not have substantial effects on the geomorphic regime (including natural river geomorphic processes such as sediment transport and bank erosion) and existing river geomorphic

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	during the late spring and summer nesting season cause inundation of burrows or loss of nests caused by localized bank sloughing. Indirect impacts could occur with changes in flow regimes as bank swallows need winter and early spring flows to allow refreshing of erosional banks. Therefore, a change from current operations of flows on the Sacramento River as a result of the Proposed Project could beneficially or adversely impact bank swallows depending on the timing, duration, and volume of flows. CDFW recommends the FEIR/FEIS include the consideration of bank swallow life cycle in any changes in flows as a result of the Proposed Project, especially during nesting season (April 1 - August 31).	characteristics (e.g., sinuosity, channel gradient, substrate composition, channel width and depth, and riparian vegetation) of the Sacramento River downstream of the release locations. While these releases would occur from May to November, which partially overlaps the bank swallow nesting period, the overall volume of water in the Sacramento River would generally be similar to the amount of water in the river under baseline conditions, and the minor changes that would result from diversions from and releases to the Sacramento River would not affect suitable bank swallow nesting habitat along the river.
77-63	ATTMT 1. Chapter or Appendix - Section: Chapter 10 - Mitigation Measure WILD -1.26. Page(s): p. 10-134. Comment and Recommendations: Mitigation Measure WILD-1.26 includes the installation of signage discouraging feeding of wildlife to aid in the reduction of potential nuisance rodents. While signage can be effective at reducing the number of visitors feeding wildlife, it does not eliminate feeding or the resulting wildlife dependency on handouts. Example regulations include, the California Code of Regulations Title 14, section 251.3, which specifically states that it is illegal to feed big game mammal; section 251.1, which addresses feeding as "harassment" of animals. "Harass," as defined in this section, as an "intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering." Any applicable local regulations should also be considered by the Proposed Project.	The Authority will comply with the California Code of Regulations and local regulations related to discouraging the public from feeding wildlife. The text of Mitigation Measure WILD-1.26 has been revised to reference the California Code of Regulations to address the commenter's concern regarding discouraging the feeding of wild animals.
77-64	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Section 11.3.2, Operations. Page(s): p. 11-57. Comment and Recommendations: The RDEIR/SDEIS states that "where feasible, and when modelers indicate using them is appropriate, daily model outputs are utilized" (p. 11-57). However, use of USRDOM daily time step hydrologic data is limited to juvenile stranding analysis, redd scour, and redd dewatering analysis for evaluating	In addition to the analyses listed by the commenter, there are several other daily outputs used in the analyses, including daily Freeport flows from the DSM2-HYDRO model for through-Delta survival effects (Appendix 11J, Through-Delta Survival and Delta Rearing Habitat of Juvenile Chinook Salmon), as well as, for example, the Daily Divertible and Storable Flow for river flow-survival migration analyses

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	impacts FISH-2 through FISH-5 as standalone, not cumulative projections of impacts.	(Appendix 11P, Riverine Flow-Survival). The IOS model and integrated life cycle model for winter-run Chinook salmon (Appendix 11I, Winter-Run Chinook Salmon Life Cycle Modeling) use daily flows for through-Delta survival effects. Whether monthly or daily models, all analyses ("standalone," in the commenter's words, or otherwise) form part of the weight of evidence for the overall impact conclusions in Impacts FISH-2 through FISH-5, as well as for all other fish species.
77-65	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-2, Delta. Page(s): General Comment. Comment and Recommendations: CDFW is concerned that important changes in location and timing of available Delta rearing and migratory habitat under the Proposed Project are not being captured by model projections in the RDEIR/SDEIS. Delta abiotic factors that influence habitat suitability and the subsequent rearing and survival components of salmonid life history is a significant knowledge gap that is not currently resolvable. This should be acknowledged throughout the text of Chapter 11. However, it is well established that the quality and quantity of habitats available for Chinook salmon and steelhead in the Delta depend on inflows from the Sacramento River (del Rosario et al. 2013). CDFW recommends that the Proposed Project utilize the California Water Fix analysis done for potential impacts to reduced inundation of river adjacent floodplain bench habitat to assess changes in the location and timing of available Delta rearing and migratory habitat due to Proposed Project operations.	As suggested by the commenter, an analysis of potential impacts on rearing habitat represented by adjacent bench habitat was added to the Final EIR/EIS (see discussion of results in Chapter 11, Aquatic Biological Resources, Impact FISH-2; methods are provided in Appendix 11J, Through-Delta Survival and Delta Rearing Habitat of Juvenile Chinook Salmon). The additional analysis does not change the significance conclusions. However, note that the impact determination was updated from less than significant with mitigation in the RDEIR/SDEIS to less than significant in the Final EIR/EIS because of the inclusion of former Mitigation Measure FISH-2.1, Wilkins Slough Bypass Flow criteria, now refined, in the Project description as described in Master Response 2, Alternatives Description and Baseline.
77-66	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Yolo Bypass and Fremont Weir Spill Flow and days of Yolo Bypass Inundation. Page(s): p. 11-114. Comment and Recommendations: As noted in the RDEIR/SDEIS, Proposed Project operations could reduce recruitment of juvenile salmonids onto the Yolo Bypass via Fremont Weir during overtopping events and through the proposed Fremont Weir Notch Project headworks structure. CDFW is concerned that the analyses conducted are lacking in fully	An analysis of the percentage of flow and fish entering Yolo Bypass has been added to the Final EIR/EIS, based on daily downscaled CALSIM data. In addition, analyses based on the work by Acierto et al. (2014) and U.S. Army Engineer Research and Development Center (2017) using the Daily Divertible and Storable Flow Tool input data have also been added, which includes methods developed for the Yolo Bypass Salmonid Habitat Restoration and Fish Passage EIS/EIR

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	evaluating the potential impact of operations on juvenile salmonid access to floodplain rearing habitat in the Yolo Bypass. The RDEIR/SDEIS analysis for flow reductions at Fremont Weir only spans January-June, thereby missing November and December when overtopping may occur. Additionally, the total reduction in inundated habitat is skewed by adding modeled inundated habitat in the August-October period during conditions when juvenile salmon most likely will not have access to that habitat. To fully assess potential impacts, CDFW suggests the RDEIR/SDEIS include an analysis of how Proposed Project diversions will reduce flow entering the Yolo Bypass on a daily time-step during Fremont Weir overtopping events and through the proposed Fremont Weir Notch headworks structure for the time period of November 1 through May 31, to adequately capture Fremont Weir spill events and Fremont Weir notch operations. Changes in flow entering the Yolo Bypass on a daily time scale may be more important than monthly changes to inundated acres because it is assumed that fish access to the Bypass is the limiting factor for rearing rather than total inundated acres. CDFW suggests using the two-dimensional TUFLOW model developed for the Fremont Weir Notch EIR/EIS (BOR and DWR 2019). Reductions in flow should be related to reductions in juvenile salmonid entrainment onto the Yolo Bypass using best available information such as entrainment models developed for the Fremont Weir Notch Project.	consistent with the commenter's suggestion. These analyses, which can be found for example in the Floodplain Inundation and Access discussion of Impact FISH-2, generally show limited potential for negative effects of Alternatives 1, 2, and 3 and would be expected to bracket results that might be obtained using the TUFLOW model suggested by the commenter. The comment states that showing inundated habitat results for the August through October period, during which the juvenile salmonids would not have access to the habitat, "skews" the results. However, the RDEIR/SDEIS explicitly states that the habitat created during this period is not available to juvenile salmon or to splittail. This information is presented more prominently in the Final EIR/EIS.
77-67	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Floodplain Inundation and Access. Page(s): General Comment. Comment and Recommendations: A key objective of the Fremont Weir Notch Project is to improve connectivity between the Sacramento River to provide safe and timely passage for adult winter- and spring-run Chinook salmon, Central Valley steelhead, and green sturgeon. CDFW recommends the FEIR/FEIS include an impact analysis of Proposed Project operations to the Fremont Weir Notch Project, considering impacts to the number of adult fish passage days. This analysis should be based upon the fish passage criteria	An analysis of the number of days meeting adult passage criteria has been added to Chapter 11, Aquatic Biological Resources, of the Final EIR/EIS (see Section 11.4, Impact Analysis and Mitigation Measures, Impact FISH-2 and Impact FISH-6, subsections titled Adult Upstream Passage at Fremont Weir, for examples). Results from this analysis do not change the impact determination.

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	developed for the Fremont Weir Notch Project. Since the Fremont Weir Notch Project is also a mitigation project for CVP & SWP operations, any changes to floodplain inundation frequency and duration should be considered when developing mitigation strategies to address those potential impacts.	
77-68	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-2, Yolo Bypass Inundated Area. Page(s): pp. 11-115, 11-301. Comment and Recommendations: In the analysis of changes in access to suitable juvenile salmonid (and splittail) rearing habitat, the RDEIR/SDEIS describes the August - October flows through Yolo Bypass as creating "habitat". The RDEIR/SDEIS also notes very few to no juvenile salmonids (or splittail) will be present or able to access this flooded land and, therefore, additional flows through the Yolo Bypass in August - October will not provide "suitable habitat" or "habitat acreage". CDFW recommends the FEIR/FEIS reflect this clarification and that analysis of changes in access to suitable rearing habitat not include the additional flows proposed to be released through the Yolo Bypass in August - October.	The cited text in Chapter 11, Aquatic Biological Resources, and Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis, has been revised in the Final EIR/EIS to clarify that Yolo Bypass acreage inundated during the August through October period is not considered habitat for anadromous salmonids or Sacramento splittail (in Chapter 11 and Appendix 11M in the Final EIR/EIS, see first paragraph following Table 11M-1). This revision does not change the impact determination.
77-69	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Floodplain Inundation and Access for Sutter Bypass. Page(s): pp. 11-118, 119; 11-147; 11-179; 11-205. Comment and Recommendations: "The results of the frequency analysis of weir spills shows reductions in the number of spills, especially for the SutterBypass, indicating a reduction in bypass entry opportunity for juvenile salmonids" (p. 11-118, 119). Similar analyses are provided on p. 11-147 for spring-run Chinook salmon, p. 11-179 for fall and late-fall-run Chinook salmon, and p.11-205 for Central Valley steelhead. CDFW believes that the existing analyses and discussion of results on the potential impact of operations on juvenile salmonid access to floodplain rearing habitat in the Sutter Bypass do not fully capture potential impacts. It is not clear from the text what time period was modeled to assess reduction in weir spill events, the modeling results are not presented and the impact	With respect to the commenter's uncertainty in the time period analyzed for Sutter Bypass inundation, the methods are described in Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis, stating that the analysis is for the October-April time period. Additional analysis of potential effects on juvenile salmonid entry into Sutter Bypass at Moulton Weir, Colusa Weir, and Tisdale Weir has been added to Final EIR/EIS based on the daily proportion of river flow entering Sutter Bypass at each weir. It is considered that these results provide a reasonable indication of potential impacts on juvenile salmonids in lieu of the type of model that the commenter suggested, given that flow entering the bypass is an indicator of potential fish entry into the bypass. The additional information does not result in changes to conclusions. An analysis of backwater

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	of the described reduction in weir spill event is not evaluated. Like for the Yolo Bypass, Sites operations could reduce beneficial recruitment of listed juvenile salmonids onto the Sutter Bypass via Moulton, Colusa, and Tisdale Weirs. Operations also have the potential to impact juvenile rearing habitat at the southern end of the Sutter Bypass due to a reduction of floodplain inundation arising from backwatering around the confluence of Sacramento River and Feather River. CDFW recommends that the same level of detail in-text as is provided for Yolo Bypass for potential changes to weir spill flows, days of inundation, and inundated area in Sutter Bypass. As for the Yolo Bypass, additional analyses should be conducted to better assess how operations will impact juvenile salmonid access to floodplain rearing habitat in the Sutter Bypass. This should include an analysis of how Sites proposed diversions will reduce flows in the Sutter Bypass on a daily time-step. CDFW suggests using the two-dimensional TUFLOW model developed for the Big Notch Project EIR/EIS (BOR and DWR 2019). Reductions in flow should be related to reductions in juvenile salmonid entrainment onto the Sutter Bypass using best available information.	inundation into the southern Sutter Bypass from the Sacramento River has been prepared and is included in Appendix 11M of the Final EIR/EIS. The results indicate that lower Sutter Bypass suitable habitat created by Sacramento River backflow would be lower under the Alternatives 1, 2 and 3 than the NAA. However, these differences are relatively small and unlikely to affect overall salmonid or splittail production and do not affect the impact determination for any of the species that spawn or rear in the Sutter Bypass.
77-70	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Floodplain Inundation and Access for Sutter Bypass. Page(s): General Comment. Comment and Recommendations: The potential impacts of operations on adult fish passage through and out of the Sutter Bypass were not analyzed. Proposed Project operations may reduce the number of days that adult salmonids and acipenserids can pass from the Sutter Bypass back to the Sacramento River during weir overtopping events (e.g., at Moulton, Colusa, and Tisdale Weirs) and at the planned fish passage notch in Tisdale Weir. Additional analyses should be conducted to better understand how the Proposed Project will impact adult fish migration within Sutter Bypass and out of Sutter Bypass. This should include an analysis of how diversions will reduce flow entering the Sutter Bypass on a daily timestep over associated	Analysis of adult fish passage for salmonids and sturgeons at the three Sutter Bypass weirs has been added to the Final EIR/EIS using the criteria suggested by the commenter. This provides more quantitative results and does not change the impact determination.

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	flood weirs and at the planned fish passage notch at Tisdale Weir. Flow reductions should be related to the adult fish passage criteria for depth and velocity that were developed for the BNP (DWR 2017).	
77-71	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-2, Yolo Bypass Inundated Area. Page(s): p. 11-118. Comment and Recommendations: Katz et al. 2017 and Bellido-Leiva et al. 2021 do not provide evidence that the Yolo Bypass provides good rearing habitat for juvenile salmonids. Please remove and provide additional reference by Sommer et al. (2001).	Although Katz et al. (2017) and Bellido-Leiva et al. (2021) do not provide primary evidence that the Yolo Bypass provides good rearing habitat for juvenile salmonids, they do provide important supporting evidence and are therefore retained. Text has been added to Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis, to clarify that increased juvenile salmonid growth rates are the principal evidence demonstrating that the Yolo Bypass provides good rearing habitat. Reference to Sommer et al. (2001) is included in the RDEIR/SDEIS.
77-72	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-2, Delta. Page(s): p. 11-125. Comment and Recommendations: Appendix 11J does not include specific information regarding the sensitivity analysis (e.g., What were the assumptions and parameters of the sensitivity analysis? What time of year was the Georgiana barrier assumed operational?). It is unclear if 50% reduction in mortality is an appropriate assumption under all alternatives, given the study did not take into consideration reduced outflow conditions as a result of Sites proposed alternatives. Also, it is not clear if 50% should be assumed across all flow conditions, months, and water years. The BAFF was only studied in 2011 (wet WY) and 2012 (below normal WY); therefore, there are no above normal, dry, or critical years studied. CDFW suggests including a detailed description of the modeling assumptions included in the sensitivity analysis.	Edits have been made to Appendix 11J, Through-Delta Survival and Delta Rearing Habitat of Juvenile Chinook Salmon, Section 11J.2.1, Methods, of the Final EIR/EIS to clarify assumptions of the sensitivity analysis. The commenter refers to a "50% reduction in mortality," but the analysis is assessing the effects of a 50% reduction in entry into Georgiana Slough, as opposed to a 50% reduction in mortality. As the commenter notes, the bioacoustic fish fence (BAFF) was tested in only two water year types, so there is not complete information for all water year types, but the best available information was used. As shown in the results of the sensitivity analysis in Appendix 11J, the relative difference between the Project alternatives and the No Project Alternative remained similar, so assumptions regarding the relative effectiveness of the barrier did not change conclusions regarding the potential effects of the Project alternatives.
77-73	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Tables 11-17, 11-18, 11-27, and 11-28. Page(s): p. 11-126, 27, 11-154. Comment and Recommendations: The current Salvage Density Method only includes water years 2009-2019, which omits above normal water year types. Previous	The commenter is concerned that the water year types used to determine the density for the salvage-density method was limited to 2009 through 2019 (note that water years 2009 to 2020 were included). This approach was adopted to ensure that recent density

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	applications of this model (i.e., SWP EIR and Incidental Take Permit Application) included all water years analyzed with CalSim (1922-2003), which includes above normal water year types. CDFW recommends the interpretation of the results from this analysis and how they are applied to the evaluation of potential impacts consider the limited years of data used, which may underestimate potential impacts.	was used because of the changes since historical periods. Given that the method is assessing differences in south Delta exports (as described in Appendix 11Q, Other Delta Species Analyses, Section 11Q.2, Salvage-Density Method), differences in south Delta exports for Above Normal Water Years are available from summarized CALSIM modeling results to assess such differences (see Appendix 5B4, Regional Deliveries, in the Final EIR/EIS). To illustrate relative differences with salvage-density weightings representative of species seasonal patterns, the density patterns for Wet Water Years were added for Above Normal Water Years in the Final EIR/EIS.
77-74	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Tables 11-17, 11-18, 11-27, and 11-28. Page(s): p. 11-126, 11-127, 11-206. Comment and Recommendations: The results of the Salvage Density Method are averages across water year type rather than by month and water year type. For winter-run and spring-run Chinook Salmon, salvage is not consistent across the year therefore the modeling results may underrepresent any changes to salvage during the months of peak salvage. Historically, peak salvage of winter-run Chinook Salmon occurs in March (with a smaller peak in January) and peak salvage of springrun Chinook Salmon occurs in April. CDFW suggests presenting the results of the Salvage Density Method by month and water year type.	Additional tables of the type suggested by the commenter have been added to Appendix 11Q, Other Delta Species Analyses, of the Final EIR/EIS under Section 11Q.2, Salvage-Density Method. The additions do not change the significance conclusions. However, note that the impact determination was updated from less than significant with mitigation in the RDEIR/SDEIS to less than significant in the Final EIR/EIS because of the inclusion of former Mitigation Measure FISH-2.1, Wilkins Slough Bypass Flow criteria, now refined, in the Project description as described in Master Response 2, Alternatives Description and Baseline.
77-75	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Life Cycle Models. Page(s): pp. 11-127 - 11-129. Comment and Recommendations: The OBAN winter-run Chinook salmon life cycle model was run to provide an analysis of the potential integrated effects of Alternatives 1, 2, and 3 on the species relative to the NAA. As noted in the RDEIR/SDEIS, OBAN does not have a flow survival component capable of analyzing primary impacts of the Proposed Project on winter-run Chinook salmon. Given the absence of a flow survival component, OBAN provides limited utility for evaluation of Proposed Project impacts on winter-run Chinook salmon.	For the Final EIR/EIS, the OBAN life cycle model accounts for flow-survival effects and shows little difference between scenarios.

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77-76	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Mitigation Measure FISH-2.1: Wilkins Slough Flow Protection Criteria. Page(s): pp. 11-131, 132. Comment and Recommendations: The Flow Threshold Survival Analysis to Assess Potential Effects of Sites Reservoir Project Mitigation Measure FISH-2.1 should be conducted separately for winter-run Chinook salmon because the key input relies on a Wilkins Slough Bypass Flow of 10,172 cfs from March through May after which most winter-run Chinook salmon have passed Wilkins Slough. Thus, winter-run Chinook salmon are not currently accounted for in this analysis.	Please see Master Response 5, Aquatic Biological Resources, for a discussion of the revised analysis in the Final EIR/EIS related to bypass flows at Wilkins Slough. As mentioned in Master Response 5, the Wilkins Slough bypass flow criterion of 10,700 cfs is now part of the Project operational criteria (instead of a mitigation measure) and covers the period from October 1 to June 14, which includes key salmonid (including winter-run Chinook salmon) outmigration periods during the Project's diversion season.
77-77	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-4, Sites Reservoir Release Effects. Page(s): pp. 11-180, 11-206. Comment and Recommendations: Any inundation of lands in Yolo Bypass that occurs between August-October will impact landowners in the Bypass. Relevant land uses (and approximate timing) include waterfowl season (typically mid-October to through mid-January); flooding of seasonal wetlands (typically September or October through April); rice harvest (typically September to October). CDFW recommends that the Proposed Project provide additional analysis on the potential impacts to landowners from conveying flow deliveries through the Yolo Bypass.	Chapter 15, Agriculture and Forestry Resources, Impact AG-4 addresses potential impacts on agriculture with respect to inundation in the CBD and Yolo Bypass. The conclusion with respect to agriculture is as follows: "Alternatives 1, 2, and 3 would not result in inundation of agricultural fields within the Yolo Bypass during the growing and harvesting season, and no conversion of Important Farmland to nonagricultural uses in the Yolo Bypass area is anticipated as a result of operations." Chapter 9, Vegetation and Wetland Resources, and Chapter 10, Wildlife Resources, also discuss the Yolo Bypass. Chapter 9 addresses potential impacts on vegetation and wetland resources. This chapter describes methods to assess changes in flows in the Yolo Bypass and determines that "flows in the August–October period would remain in the existing channels, and no impacts on vegetation and wetland resources outside of channels within the Yolo Bypass are anticipated." Chapter 10 addresses potential impacts on wildlife resources. This chapter discusses impacts in the Yolo Bypass related to flows in multiple locations (e.g., Impacts WILD-1c, WILD-1h, WILD-1i, WILD-1k, WILD-1l, WILD-1n, WILD-1o, WILD-1p, and WILD-1q), concluding that significant impacts in the Yolo Bypass from inundation are not

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		anticipated based on modeling results. This chapter states, "Sites Reservoir would be operated to maintain flows within the existing Toe Drain, Tule Canal, and other channels, and adjustments in operations would be coordinated between the Authority and parcel owners using the existing Yolo Bypass monitoring network."
77-78	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-4, Sites Reservoir Release Effects. Page(s): pp. 11-180, 11-206. Comment and Recommendations: "Fall-run Chinook salmon entering the Toe Drain may eventually reach the Wallace Weir, where fish rescue and relocation to the Sacramento River by CDFW occurs, either at the recently completed Wallace Weir Fish Rescue Facility or by beach seine in the vicinity of the Wallace Weir" (p. 11-180 for fall-run, p. 11-206 for steelhead). Operations of the Wallace Weir Fish Salvage Facility should not be considered an avoidance or minimization measure for potential impacts from conveying water through the Yolo Bypass on adult salmonids. The purpose of the Wallace Weir Fish Rescue Facility is to prevent listed adult fish from entering the Colusa Basin Drain and increase the efficiency of potential fish salvage operations. The long-term goal for the Yolo Bypass fisheries enhancement efforts is to reduce fish salvage at Wallace Weir. Increasing reliance on the facility to reduce impacts from Proposed Project deliveries conflicts with this goal. As such, it is inappropriate to use operations of the fish rescue facility as a rationale for explaining why Proposed Project reservoir releases would not impact adult fall-run Chinook salmon and steelhead. Additionally, increased flows through Colusa Basin Drain and Wallace Weir may impact the operational capacity of the Wallace Weir Fish Rescue Facility, further increasing the chance of stranding, migratory delays, and exposure to poor water quality conditions to fish being present downstream of Wallace Weir between August and November. Increased reliance of the Wallace Weir Fish Rescue Facility should be put in context of	The analysis of potential increases in adult fall-run Chinook salmon entering the Yolo Bypass does not consider that operation of the Wallace Weir Fish Salvage Facility is an avoidance or minimization measure for potential impacts from conveying water through the Yolo Bypass. Rather, the analysis acknowledges the existence of fish rescue and provides context on the rate of rescue and associated mortality during managed flow actions analogous to reservoir releases under Alternatives 1, 2, and 3. This shows the rate of rescue/mortality to be low relative to Evolutionarily Significant Unit size. Mitigation Measures FISH-8.1 and WQ-2.2 will address water quality issues associated with potential effects of reservoir releases moving water through the Yolo Bypass. The comment regarding operational capacity is ambiguous as to whether it is referring to ability to pass flows or the capacity to handle fish. Based on a review of Project capabilities, the weir and fish rescue facility would be operational at the flows associated with these releases. The capacity to handle fish will be addressed in the public benefits contract required by the WSIP for the administration of water dedicated to environmental benefits.

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	the objectives of the facility and a discussion of how handling and transporting anadromous fish potentially impacts their fitness should be included. Overall, the Proposed Project should provide a more objective description of the potential impacts of reservoir releases through the Yolo Bypass on increased stranding of fall-run Chinook salmon and steelhead, as well as impacts to operations of Wallace Weir Fish Rescue Facility.	
77-79	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-6, Flow Effects. Page(s): p. 11-223. Comment and Recommendations: Fish screen entrainment assessment is based on pallid sturgeon (Mefford and Sutphin 2008). This species is a poor proxy for green or white sturgeon. More suitable references would be products of the Cech or Fangue labs at UC Davis such as Poletto et al. 2014 and Mussen et al. 2014.	The references suggested by the commenter as being more suitable are less suitable for the purpose of assessing the potential for entrainment of larval sturgeon through fish screens because those references pertain to juveniles for which the size means zero risk of entrainment. The reference to Mefford and Sutphin (2008) is only one part of the weight of evidence for entrainment risk and is appropriate given the morphological similarity of pallid sturgeon to green sturgeon. The analysis further goes on to cite work from the Cech/Fangue labs at UC Davis, in discussing monthly velocity criteria based on Verhille et al. (2014) for protection of larval sturgeon at water diversions.
77-80	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-6, Flow Effects. Page(s): p. 11-223. Comment and Recommendations: The RDEIR/SDEIS states that "The [green sturgeon] adults spawn primarily from March through July, although they periodically spawn in late summer and fall (as late as October) (Heublein et al. 2009, 2017, NMFS 2018b)" (p. 11-223). This statement is not consistent with the cited literature. The first two citations do not support this statement and the last citation (NMFS 2018) states that larvae have been found in late summer and fall. The latest reports of larvae have been around early October, which would correspond to spawning in July or August, not in the fall. Green sturgeon have never been reported spawning that late in the season.	The cited text has been revised to eliminate post-July as a possible spawning period, and corresponding discussion of results has been deleted from the report. This does not change the impact determinations.

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77-81	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-6, Table 11-48. Page(s): p. 11-228. Comment and Recommendations: The RDEIS/SDEIS notes flow at Hamilton City will be reduced to 5-13% of average flow. This is of concern for green and white sturgeon. January - February corresponds with peak adult white sturgeon up-migration, and March with the start of green sturgeon up-migration for spawning. While it is unlikely that these reductions would be enough to limit passage, it is not known if they would impact migratory cues and change or alter the timing of migrations. CDFW recommends this potential impact be addressed in the FEIR/FEIS.	As recommended, the potential impact of reduced flow in the Sacramento River on migratory cues and timing of green and white sturgeon is addressed in the Final EIR/EIS. This does not change the impact determination.
77-82	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-6, Table 11-48 and Flow Effects, Adult Migration and Holding. Page(s): p. 11-240. Comment and Recommendations: Green sturgeon spawning in the Feather River is limited to wet and above normal years due to blocked passage at Sunset Weir (as noted on p. 11-240); however, there are ongoing plans to improve passage at that barrier. If passage is improved, it is likely that spawning will occur in the Feather River in lower water years. Even if passage is improved, the reductions in flow predicted in June and July would impact rearing of larval green sturgeon. Note that one of the reasons the species was listed was that there was only one small spawning area in the Sacramento River, making the species susceptible to catastrophic events. Enhancing and supporting spawning in the Feather River (and other rivers) is an important component of the NMFS Recovery Plan (NMFS 2018). CDFW recommends the FEIR/FEIS address potential impacts to larval green sturgeon rearing habitat.	Material addressing this topic has been added to the Impact FISH-6: Operations Effects on Green Sturgeon subsection in Chapter 11, Aquatic Biological Resources, Section 11.4, Impact Analysis and Mitigation Measures, in the Final EIR/EIS. This does not change the impact determination.
77-83	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-6, Appendix 11L Sturgeon Delta Analyses. Page(s): General Comment. Comment and Recommendations: The RDEIR/SDEIS finds the Proposed Project to have Less Than Significant (LTS) effects on both green sturgeon and white sturgeon. However, the Proposed Project has the potential to	The commenter suggests that the Project has the potential to impact sturgeon survival and recruitment due to reductions in Sacramento River flow and that bypass flow criteria do not sufficiently offset such potential effects. However, the commenter does not provide an indication of what they consider sufficient flows to be nor any source

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	impact sturgeon survival and recruitment due to reductions in Sacramento River flow associated with input flows to the reservoir, which are not sufficiently offset by protective bypass flow criteria. Additionally, as larval sturgeon could likely be in close proximity to points of diversion at the time of diversion for the Proposed Project, an analysis of the screening efficacy on larval sturgeon may be warranted.	information from which this could be developed. The EIR/EIS includes an analysis of potential effects on sturgeon abundance based on available Delta outflow-abundance relationships, which form part of the considerations for the less-than-significant conclusions for the two sturgeon species. Note that bypass flow criteria have been updated in the Final EIR/EIS, which does not change the impact determination (see Master Response 2, Alternatives Description and Baseline); please also refer to Master Response 5, Aquatic Biological Resources, for a discussion regarding flow and mitigation measures. With respect to larval sturgeon and the commenter's suggestion for an analysis of screening efficacy, the potential for near-field effects, including consideration of screening efficacy, is provided in Impact FISH-6 for green sturgeon and Impact FISH-7 for white sturgeon.
77-84	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-6, Appendix 11L Sturgeon Delta Analyses. Page(s): General Comment. Comment and Recommendations: Spawning success and juvenile recruitment are poorly understood for both species of sturgeon due to the difficulty of monitoring the benthic, dispersed, and cryptic early life stages of these fishes. The best available evidence indicates that white sturgeon only have large, successful recruitment events approximately every 8-10 years, correlated with wet water years, especially those associated with high spring outflow (Fish 2010; Stevens and Miller 1970). It appears that green sturgeon show a similar pattern. Reports from the USFWS Red Bluff office show green sturgeon eggs captured on egg mats and larvae captured in both rotary screw traps and benthic D-nets show high numbers in wet years with high water levels (B. Poytress, USFWS, personal communication). Operations of Proposed Project that reduce flows during wet and above normal years, during the periods of egg development, larval rearing, and juvenile migration carry a strong risk of harming those early life stages and reducing these rare successful recruitment years. To minimize these	The correlation of flow with recruitment referred to in this comment is largely driven by a few very high flow years, as shown in Appendix 11L, Sturgeon Analyses, Figure 11L-1. Such flows are largely unimpaired flows that result from major storm events and are not much affected by Project operations. Given differences in life cycle and habitat use between green sturgeon and white sturgeon, the applicability of the white sturgeon YCI to green sturgeon is unclear. However, larval abundance and distribution may be influenced by spring and summer outflow. The effects of the Project operations on flow in the Sacramento River under the No Project Alternative and Alternatives 1, 2, and 3 are discussed in Chapter 11, Aquatic Biological Resources. In particular, the differences in flow between the No Project Alternative and each of the alternatives are presented by month and water year type at four locations in the Sacramento River: Bend Bridge, RBDD, Hamilton City, and Wilkins Slough in Tables 11-57 through 11-60. These

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	potential impacts, Proposed Project operations should time reservoir inflow so that it does not meaningfully reduce flows in the Sacramento River during critical sturgeon rearing and migration, especially during the wettest years. Additionally, monitoring of early life stage abundance or YCI should be funded through the Proposed Project in order observe the effects of Proposed Project operations on sturgeon and inform adaptive management of Proposed Project operations, as necessary.	locations are representative of the portion of the Sacramento River in which larval and juvenile green sturgeon rear for several months post-hatching before migrating to the Delta. Generally, the differences between flow under the No Project Alternative and Alternatives 1, 2, and 3 are small, less than 5%; however, there are some exceptions. The only reduction in flow greater than 5% in a wet year is a reduction in flow in April at Hamilton City under Alternative 3 from 16,312 cfs (No Project Alternative/No Action Alternative) to 15,441 cfs (5.3%, Alternative 3). Given this is the only wet year reduction greater than 5% and the remaining flow is still relatively high, the effect on green sturgeon larval production is anticipated to be minimal. There are reductions in flow greater than 5% in other months and water year types. Flow at RBDD for all alternatives in January, February, and March may see reductions between 5.3% and 8.1%. Except for March, these reductions do not persist downstream at Hamilton City or Wilkins Slough. Given that only migratory/pre-spawning adults are present in these reaches during these months, the flow reductions are not expected to have an adverse effect on juvenile production and survival. Potential effects of these flow reductions on migratory green sturgeon and white sturgeon adults are discussed in Chapter 11. Alternative 3 is estimated to reduce flows by greater than 5% in May of Critically Dry Water Years and June of Above Normal, Below Normal, and Critically Dry Water Years. Juvenile production does not appear to be associated with Below Normal and Critically Dry Water Years, and none of the reductions persist in the estimated effects at Hamilton City and Wilkins Slough. Therefore, the effect of those reductions is expected to be localized with minimal effect on habitat for juvenile rearing. Finally, the pulse protection measures in the Project, and the Wilkins Slough requirement, which

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		precludes diversions if they would reduce flow at Wilkins Slough below 10,700 cfs, are likely to ensure sufficient flows for adult green sturgeons to complete their spawning migrations and ensure pulse flows are available to stimulate downstream migration of larval and juvenile green sturgeon. Therefore, the impact of the Project on green sturgeon was determined to be less than significant (CEQA) and no adverse effect (NEPA). Please see Impact FISH-6 in Chapter 11. The Authority and Reclamation recognize that there may be some uncertainty in these determinations attributable to the paucity of information on green sturgeon life history and habitat use and are committed to support, collaborate with, and as appropriate augment ongoing research to improve understanding of the flow-survival relationship in the middle reach of the Sacramento River (RBDD to Verona), including the roles of pulses, base flows, sediment levels, predation, and inundated acres of side-channel habitat, and to use the results to refine the criteria for managing diversions to protect the function of the Sacramento River between RBDD and Verona to support migration and rearing of juvenile salmon and sturgeon (see Appendix 2D, Section 2D.6.4, Minimum Bypass Flows in the Sacramento River at Wilkins Slough Study).
77-85	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact Fish-6, Delta Outflow Effects. Page(s): p. 11-242. Comment and Recommendations: The RDEIR/SDEIS suggests that even if upstream passage of adults is blocked briefly, "it is likely adults would hold and continue their migration and spawning after flow subsequently increased" (p. 11-242). There is nothing in the literature to suggest this. Evidence suggests that when passage is blocked, green sturgeon will move back downstream (e.g., adults blocked by the insertion of the gates at Red Bluff Diversion Dam prior to 2011; Heublein et al. 2009). It is not known whether they attempt to spawn lower	The cited phrase has been deleted from the Final EIR/EIS because it is not supported, as the commenter notes. A new analysis has been prepared for adult sturgeon upstream migration flows based on observations of white sturgeon migrations in Schaffter 1997, and the results have been added to Chapter 11, Aquatic Biological Resources, and Appendix 11N, Other Flow-Related Upstream Analyses. The new analysis does not change the impact determination.

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	in the system or simply abort the migration and return to salt water. Suggesting that Proposed Project operations will not have an impact on sturgeon should not be based on the assumption that they will wait until later to migrate, as it is possible that the fish will not spawn at all.	
77-86	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact-Fish-8: Operations Effects on Delta Smelt. Page(s): pp. 11-250 - 11-258. Comment and Recommendations: The RDEIR/SDEIS's analysis of effects from reservoir releases to CBD/Yolo Bypass begins by asserting that providing flow through CBD and Yolo Bypass may benefit Delta smelt. This section cites Bush (2017) to assert that 23% of the population may benefit from releases through the Yolo Bypass. This is not an accurate representation of the findings of that study. Bush (2017) found that the proportion of freshwater resident Delta smelt was variable and that summer water temperature was likely the main driver of the proportion of freshwater residents that are present in the Cache Slough complex. Furthermore, the North Delta food web actions (NDFA) have not demonstrated a measurable improvement in the Delta smelt population, habitat, or abundance of prey items. The only NDFA having a phytoplankton bloom observation, occurred in 2016 and was comprised of Aulacoseira, a long chain-forming diatom that copepods (a major food item for Delta smelt and longfin smelt) do not consume at high rates during blooms (Jungbluth et al. 2020). Other NDFA have resulted in no observed increase in phytoplankton. These results show the uncertainty associated with food web benefits of the NDFA. Further discussion of this action in the RDEIR/SDEIS describes the uncertainty in the extent to which Delta smelt could be affected by an increase in pesticides in the lower Yolo Bypass, as Proposed Project habitat flows would redirect CBD water that is relatively high in pesticides into the Yolo Bypass, and the potential deleterious effects that Delta smelt in the Yolo Bypass could experience due to exposure to low dissolved oxygen (p. 11-255). The RDEIR/SDEIS also acknowledges water temperature in this region is	Please see Master Response 5, Aquatic Biological Resources, which addresses the effects on delta smelt from reservoir releases to the CBD and Yolo Bypass. As mentioned in Master Response 5, the EIR/EIS does not state that 23% of the delta smelt population may benefit from reservoir releases through the Yolo Bypass; the analysis merely provides perspective on the proportion of the population residing in the region mostly likely to benefit from the releases. As mentioned in Master Response 5, the Final EIR/EIS was revised to include environmental conditions affecting proportion of freshwater residents and North Delta Flow Action having a phytoplankton bloom observation. Master Response 5 also addresses the uncertainty in potential negative effects from reservoir releases on delta smelt as a result of effects on temperature, DO, and pesticides.

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	frequently at the cusp of the upper thermal maximum for Delta smelt, concluding that as a result "there is some uncertainty in the potential for effects on Delta Smelt" (p. 11-258). As stated above, Bush (2017) found that high water temperature may lead to lower frequency of freshwater resident Delta smelt in the North Delta. Therefore, any increase in water temperature in the Yolo Bypass or North Delta is likely to reduce the frequency of freshwater resident Delta smelt. CDFW suggests revising this section for clarity and clearly stating the potential benefits, uncertainties, and potential deleterious effects of reservoir releases to CBD/Yolo Bypass on Delta smelt.	
77-87	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact-Fish-8: Operations Effects on Delta Smelt. Page(s): General Comment. Comment and Recommendations: The RDEIR/SDEIS does not currently address the role of outflow on the transport and dispersal of Delta smelt larvae. Reduced delta outflow reduces the transport and dispersal of Delta smelt larvae downstream to areas of higher quality habitat (IEP MAST 2015, CDFW 2020). Polansky et al. 2021 also found that outflow is important for postlarval survival. CDFW suggests adding in a discussion of the Proposed Project's operational effects on survival of Delta smelt larvae in the FEIR/FEIS to better inform Proposed Project impacts to Delta smelt.	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to delta smelt and flow-related effects, including a discussion of spring outflow-related variables.
77-88	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact-Fish-8, Flow-Related Effects. Page(s): pp. 11-260, 261. Comment and Recommendations: The RDEIR/SDEIS analyzed expected decreases in Delta outflow and the abundance of Eurytemora affinis, a copepod that is an important food for Delta smelt and found that there would be less prey available to Delta smelt in spring under all three operational scenarios compared to the No Action Alternative (p. 11-260). However, these analyses used statistical relationships between outflow and Eurytemora abundance observed over several months of the spring period. The largest decrease in Delta outflow under the operational scenarios would be in March, with relatively little	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to delta smelt and flow-related effects, including a discussion of delta smelt and Eurytemora affinis.

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	change in Delta outflow in April and May. Therefore, decreases in food availability in March would be expected to be greater than those represented in Table 11-58 (averaged over March through May) and Table 11-59 (averaged over March through June) (p. 11-261). The conclusion that such small decreases are unlikely to be "statistically detectable" does not mean that such decreases would not be biologically significant or deleterious to a species already suffering from food limitation. The ability to statistically detect the decrease in Eurytemora abundance is influenced by the large variability in the zooplankton data, which is inherent in zooplankton data as copepod distribution is patchy. Even at relatively low abundance, Eurytemora is highly positively selected for by Delta smelt in spring and increasing or extending its period of abundance provides feeding benefits to larval and small juvenile Delta smelt (Slater and Baxter 2014). Therefore, the negative impacts to Delta smelt from reduced prey availability may be greater than what is presented in the RDEIR/SDEIS.	
77-89	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact-Fish-8, Flow-Related Effects. Page(s): pp. 11-263, 264. Comment and Recommendations: The RDEIR/SDEIS highlights a debate regarding the importance of low salinity zone habitat to Delta smelt, citing a small set of references (pp. 11-263, 264). Yet, throughout the Delta Smelt Flow-Related Effects section (pp. 11-260-264), the RDEIR/SDEIS states that an average of 23% of Delta smelt surviving to adulthood are freshwater residents and the remainder either migrate to the low salinity zone or are resident there (Bush 2017). This contradicts the assertion that the low salinity zone is possibly not an important habitat for Delta smelt, when an average of 76% of Delta smelt surviving to adulthood reside there or migrate there for a portion of their life. CDFW suggests the Proposed Project either remove the suggestion the low salinity zone is not an important habitat for Delta smelt or expand the discussion. Specifically, the discussion should include the importance the Suisun Bay where habitat quality is maximized (Feyrer et al.	Please see Master Response 5, Aquatic Biological Resources, which addresses low salinity zone habitat effects on delta smelt. As mentioned in Master Response 5, additional discussion regarding differences in fall habitat was added to the Final EIR/EIS.

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	2007, Feyrer et al. 2011, Kimmerer et al. 2013) and Delta smelt foraging efficiency and success is greater (Hammock et al. 2017, Hammock et al. 2019). Recent statistical analyses conducted by USFWS also provide strong support for the importance of fall habitat to recruitment of Delta smelt (Polansky et al. 2019 and Polansky et al. 2021).	
77-90	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact FISH-9: Operations Effects on Longfin Smelt and Appendix 11A. Page(s): General Comment. Comment and Recommendations: There is a well-documented positive correlation between winter and spring Delta outflow and the abundance of longfin smelt the following fall. Adults, immature sub-adults, eggs, larvae, and young juveniles are all present during some portion of this period and may be affected by various factors associated with Delta outflow. While the underlying mechanism or mechanisms driving this relationship remain unclear, the correlation between outflow and longfin smelt abundance has remained strong across multiple decades and through a substantial decrease in abundance (Maunder et al. 2015; Nobriga and Rosenfield 2016; Rosenfield and Baxter 2007; Stevens and Miller 1983; Tamburello et al. 2019; Thomson et al. 2010). Other analyses examined the magnitude of Delta outflow associated with positive longfin smelt population growth (State Water Resources Control Board (SWRCB) 2017, Rosenfield et al. 2010). The magnitude of outflow required varied depending on what averaging period was considered, however, both examinations concluded that the probability of positive population growth decreases with reduced outflow (SWRCB 2017) indicating that further reduction in winter/spring outflow may exacerbate the current decline in longfin smelt population.	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to longfin smelt and flow-related effects, including impacts on population caused by changes in flow.
77-91	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Impact FISH-9: Operations Effects on Longfin Smelt and Appendix 11F. Page(s): General Comment. Comment and Recommendations: The effect that Proposed Project operations would have on longfin smelt was modeled using a	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to longfin smelt and flow-related effects, including a discussion of the appropriateness of the Nobriga and Rosenfeld model.

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	reconstruction of analysis conducted by Nobriga and Rosenfield (2016). The intent of the original Nobriga and Rosenfield analysis was to test various life history conceptual models using contrasting variants of a generalized population model. The analysis using Nobriga and Rosenfield approach may not accurately convey Proposed Project impacts. Visual examination of model fit as presented in Figure 11F-1 showed that the model 2abc median differed from empirical data by as much as an order of magnitude in some years and that the 95% confidence intervals spanned multiple orders of magnitude indicating a high degree of uncertainty. The results are presented in such a way that mask Proposed Project effects by including all variation due to all factors including a multiple order of magnitude decline in the population and error associated with model coefficients. To facilitate clearer interpretation of impacts to longfin smelt, the results should be presented as a proportional change in the modeled FMWT index under NAA conditions prior to averaging by water year type. A second approach based on previously published regression analysis described by Kimmerer et al. (2009) and Mount et al. (2013) was also presented. The results of this second approach were similar to the Nobriga and Rosenfield method in that there was a high degree of uncertainty and that the Proposed Project operations resulted in a net negative impact on longfin smelt abundance.	
77-92	ATTMT 1. Chapter or Appendix - Section: Chapter 11 - Mitigation Measure FISH-9.1: Tidal Habitat Restoration for Longfin Smelt and Appendix 11F.5 Tidal Habitat Restoration Mitigation Calculations for Longfin Smelt. Page(s): p. 11-274 and pp. 11F-32, 33. Comment and Recommendations: The proposed mitigation to offset the effect of reduced outflow used an equation described by Kratville (2010). This equation may not be appropriate due to the fact that it was developed to calculate the acreage required to mitigate the direct and indirect loss of larval Delta smelt associated with SWP/CVP exports. The equation is based on the findings of Kimmerer and Nobriga (2008) which applied a particle tracking model to	Please see Master Response 5, Aquatic Biological Resources, which addresses adequacy of Mitigation Measure FISH-9.1 in reducing impacts related to outflow effects on longfin smelt to a less-than-significant level.

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	estimate the proportion of simulated Delta smelt larva that would be entrained into the south Delta Export facilities from various locations in the Delta. Kratville (2010) does state that this analysis is generally representative of the effects that SWP/CVP exports have on longfin smelt larvae in dry years. However, it does not encompass the full period in which larval longfin smelt are present. Larval longfin smelt are present in the estuary beginning as early as mid-December when the E:I ratio is 65%. Therefore, this equation may be appropriate to calculate the acreage needed to offset any increase in south Delta exports associated with Proposed Project operations, if it is adjusted to account for the different E:I ratio in December and January. However, it does not account for impacts associated with reduced Delta outflow due to Proposed Project diversions.	
77-93	ATTMT 1. Chapter or Appendix - Section: Impact Fish-10 through Impact Fish-17. Page(s): General Comment. Comment and Recommendations: The projections of Proposed Project effects on native and introduced fish species (Impact Fish-10 through Impact Fish-17) do generally use the best available species life history accounts and current information. The uncertainty associated with projections of less than significant Proposed Project impacts on these fish is especially high because there is no precedent for these effects because quantitative models and analysis of fish response for a project of this type and scale are nonexistent. In other words, the best available science to evaluate Proposed Project effects on these fish species results inevitably in conclusions that are speculative. Because of this uncertainty, CDFW recommends that the FEIR/FEIS fully describe this level of uncertainty and include these fish species in the adaptive management program.	Please refer to Master Response 5, Aquatic Biological Resources, for a discussion of uncertainty in impact analyses as it pertains to CEQA/NEPA. Any uncertainty surrounding the analyses and models used in impact determinations (as noted, the best available tools and current information) is fully acknowledged and described throughout Chapter 11, Aquatic Biological Resources, of the EIR/EIS and taken into account as fish experts review multiple lines of evidence to assess potential Project impacts. The impact determinations are not speculative and are supported by substantial evidence outlined in the more than 300 pages of analysis contained in Chapter 11 and the 30 different methods used to conduct analyses regarding Project operations as summarized in Table 11-4 and the 15 technical appendices supporting Chapter 11. As described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, the adaptive management program will be focused on addressing uncertainties in the analyses of effects of the Project on ecosystems, with an emphasis on special-status species. Consideration of these species may be included as appropriate.

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77-94	ATTMT 1. Chapter or Appendix - Section: Appendix 11A - Section 11A.1.3.2, Life History and General Ecology. Page(s): p. 11A-25. Comment and Recommendations: RDEIR/SDEIS states: "Until recent years, salmon passage was not possible above the Coleman Hatchery barrier weir located on Battle Creek." This is not correct. Fish passage is always possible at the Coleman National Fish Hatchery barrier weir. The Coleman National Fish Hatchery controls fish passage at the weir for hatchery operations.	The language in Appendix 11A, Aquatic Species Life Histories, regarding the weir at Coleman National Fish Hatchery has been revised in the Final EIR/EIS per this comment and is included in Section 11A.1.3.3, Distribution and Abundance. This text revision does not change an impact determination or conclusion.
77-95	ATTMT 1. Chapter or Appendix - Section: Appendix 11A - Section 11A.1.3.2, Table 11A-2. Page(s): p. 11A-27. Comment and Recommendations: The RDEIR/SDEIS uses National Marine Fisheries Service 2019 for their table of general life stage timing for winterrun Chinook salmon. However, this table should be updated to include Glenn Colusa Irrigation District's long-term winter-run monitoring data and Tisdale's Rotary Screw Trap data from CDFW's Tisdale Monitoring Program to reflect best available science and provide winter-run emigration information between RBDD and Knights Landing.	The table provided by National Marine Fisheries Service (2019) is a general representation and not intended to include every possible data source. Tisdale rotary screw trap data are summarized in Appendix 11A1, Juvenile Salmonid Monitoring, Sampling, and Salvage Timing Summary from SacPAS. Available Glenn-Colusa Irrigation District monitoring data have less temporal resolution than other data sources (monthly sums of fish captured) and show generally consistent patterns to other data sources.
77-96	ATTMT 1. Chapter or Appendix - Section: Appendix 11A - Section 11A.1.4.3, Distribution and Abundance. Page(s): p. 11A-32. Comment and Recommendations: The RDEIR/SDEIS states "Today, only the mainstem Sacramento River and Butte, Mill, and Deer Creeks maintain wild spring-run Chinook salmon populations" (p. 11A-32). Battle Creek should be added to the list of creeks containing wild spring-run (NMFS 2016).	The suggested changes regarding Battle Creek in Appendix 11A, Aquatic Species Life Histories, Section 11A.1.4.3, Distribution and Abundance, have been made. This text revision does not change an impact determination or conclusion.
77-97	ATTMT 1. Chapter or Appendix - Section: Appendix 11A- Section 11A.1.4.4, Stressors. Page(s): p. 11A-36. Comment and Recommendations: The reference National Marine Fisheries Service 2014 appear to have been taken out of context with regards to discussing stressors on spring-run Chinook salmon. The text should be revised to reflect the literature cited or removed. Specifically, stressors in Deer, Mill, and Antelope creeks include agricultural	National Marine Fisheries Service (2014) presents a detailed threat assessment. The language in Appendix 11A, Aquatic Species Life Histories, was meant to be a brief summary of that assessment. The language in Chapter 11, Aquatic Biological Resources, has been revised to better reflect the summary language in the recovery plan,

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	water diversions primarily, with loss of habitat due to urban development secondary.	which highlights agricultural diversions. This text revision does not change an impact determination or conclusion.
77-98	ATTMT 1. Chapter or Appendix - Section: Appendix 11F - Section 11F.5. Page(s): p. 11F-34. Comment and Recommendations: The RDEIR/SDEIS calculated tidal habitat restoration mitigation for longfin smelt. "The overall area of effect for each scenario was calculated as 10% of the area of the above calculations, consistent with calculations for the mitigation requirements used by California Department of Fish and Game (2009) and California Department of Water Resources (2019)" (p. 11F-34). However, the description is confusing, and it is unclear how the overall area for each scenario was calculated. CDFW suggests the FEIR/FEIS provide a clear step-by-step description of the calculation.	Information regarding the description of the calculation that the comment is seeking can be found in the Kratville (2010) document cited in Appendix 11F, Smelt Analysis. As such, no text modification has been made to Appendix 11F.
77-99	ATTMT 1. Chapter or Appendix - Section: Appendix 11I - Winter- Run Chinook Salmon Life Cycle Modeling. Page(s): General Comment. Comment and Recommendations: Clarification is needed on the flow scenarios used for IOS CalSim II inputs specific to the Proposed Project and to determine if Yolo (including Big Notch restoration project) and Sutter Bypass Project associated flow changes are accounted for in IOS. Temperature inputs for the Sacramento River are derived from the USBR SRWQM temperature model but it is not clear if the modeling is specific to the Proposed Project based on the documentation. Temperature inputs are only applied to the spawning reach from Keswick to Balls Ferry, but Proposed Project related flow changes are not accounted for in this section of the Sacramento River. Therefore, redd dewatering is another component of IOS that was not modeled. Chinook salmon redd dewatering could occur or be exacerbated by Proposed Project operations depending on water year type and water transfers.	The IOS modeling primarily uses CALSIM modeling, for which assumptions (including the presence of a Fremont Weir Notch) are documented in Appendix 5A1, Model Assumptions. The Sutter Bypass Project, which is in the early planning stages, is not included in the modeling. All modeling is specific to each operational scenario (i.e., No Project Alternative or Alternatives 1, 2, and 3). As the commenter notes, the IOS model does not include redd dewatering. There are standalone analyses related to redd dewatering for winter-run Chinook salmon elsewhere in the EIR/EIS, which found minor effects.
77-100	ATTMT 1. Chapter or Appendix - Section: Appendix 11I - Winter- Run Chinook Salmon Life Cycle Modeling. Page(s): General Comment. Comment and Recommendations: IOS has been updated to include a flow survival	The method description for the IOS model has been revised to include more details related to data and fit of the flow-survival function in the Final EIR/EIS (see Appendix 11I1, IOS Winter-Run

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	component for migrating winter-run smolts. The simple linear regression presented was based on seven years of winter-run Chinook salmon acoustic tag data; however, the specific years utilized are not provided and the linear regression does not include the data points that were used to develop the linear regression (Figure 4, Appendix 11I). The survival values range from approximately 25% at 3,250 cfs to 37% at 60,000 cfs from Bend Bridge to Verona. It is unclear how the regression was interpolated, extrapolated, and fit to the data points utilized. It has been shown in other flow survival analyses that there may be inflection points and thresholds of flow related survival that are vastly different than what was presented in the RDEIR/SDEIS analysis (Michel et al. 2021). Therefore, the actual impact of Proposed Project operations on salmonid survival in the Sacramento River may be under-represented.	Chinook Salmon Life Cycle Model). This text revision does not change an impact determination or conclusion. This model has a different flow-survival relationship than the Michel et al. model (2021) because it focused only on winter-run Chinook salmon smolts, whereas Michel et al. (2021) included some winter-run as well as other runs of salmon and focused more on the spring period, which is after most winter-run migration is complete. It is unclear why, as the commenter suggests, Project operations would be underrepresented by the IOS model. Other than noting that there are different survival relationships, there is no specific reason given why there should be a bias for underrepresentation. Please see Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures, in particular related to the inclusion of Wilkins Slough bypass flow criterion in Alternatives 1, 2, and 3 for the Final EIR/EIS (also see Master Response 2, Alternatives Description and Baseline).
77-101	ATTMT 1. Chapter or Appendix - Section: Appendix 11I - Winter- Run Chinook Salmon Life Cycle Modeling. Page(s): General Comment. Comment and Recommendations: The Delta Passage Model (DPM) component of IOS relies on monthly average CalSim II flows as an input and variable entry timing for each year in the model simulation. It is unclear if river migration has a pulse flow component or is simply a function of smolt maturation, and how year-specific entry to the Delta curves are generated. As such, CDFW cannot determine if these entry curves coincide with actual Proposed Project diversions. When coupled with the use of monthly averaged flow inputs, there is significant potential for the IOS model to under-represent Proposed Project impacts on through Delta survival. It is also unclear if the DPM component of IOS relies on Perry 2010 or if it has been updated to the more recent Perry 2018 model. CDFW recommends that the DPM	Documentation for the Delta Passage Model (DPM) that describes the data sources and analysis used in the most recent revision was added as an appendix to the IOS model description in the Final EIR/EIS (Appendix 11I1, IOS Winter-Run Chinook Salmon Life Cycle Model). Within the IOS documentation (Appendix 11I1, page 21), the section on Delta Passage describes how fish enter the Delta and contrasts how it happens in IOS versus the DPM, specifically: "The timing of winter-run entry into the Delta is a function of upstream fry/egg rearing and river migration so timing changes annually, in contrast to the fixed nature of Delta entry for the standalone DPM." Figure 5 in Appendix 11I1 compares entry distributions in several different years within IOS relative to the DPM, based on application in modeling for a prior project.

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	component of IOS including the smolt entry component of the IOS life cycle model be more thoroughly documented in Appendix 11I-2.	
77-102	ATTMT 1. Chapter or Appendix - Section: Appendix 11K - Weighted Usable Area Analysis. Page(s): General Comment. Comment and Recommendations: The RDEIR/SDEIS relies on Weighted Usable Area (WUA) curves developed by USFWS to determine potential impacts to salmonid rearing habitat in the Sacramento River and states "The results of the analyses suggest that Alternatives 1-3 would cause few large changes in spawning WUA in any of the rivers and would generally result in more increases than reductions in rearing WUA in the Sacramento River, especially for juveniles (53% increases in total)" (p. 11K-77). Salmonids tend to rear in off-channel and side-channel habitat, characteristic of slower velocities and shallower depths. As a result, decreased flow in the Sacramento River subsequently leads to slower and shallower conditions, potentially indicating higher WUA. However, the assessment presented in the RDEIR/SDEIS is inadequate in analyzing impacts to rearing habitat in the Sacramento River as it fails to assess other important habitat components including the potential for habitat fragmentation, inundation frequency and duration, as well as complexity. Therefore, the potential impacts to salmonid rearing habitat may be underestimated. CDFW recommends the FEIR/FEIS include additional assessment of the Proposed Project's impacts to rearing habitat availability within the Sacramento River system, as well as the other systems (i.e., the American and Feather Rivers) impacted by the Proposed Project.	The comment states that the RDEIR/SDEIS fails to address potential effects of Alternatives 1, 2, and 3 on important aspects of juvenile rearing habitat availability other than main channel rearing WUA, including off-channel and side-channel habitat inundation frequency and duration and habitat fragmentation and complexity. Habitat fragmentation and complexity were not analyzed because data and models for quantifying effects of Alternatives 1, 2, and 3 on these features were not available. However, the effects of Alternatives 1, 2, and 3 on off-channel and side-channel habitat inundation are quantitatively analyzed in the Final EIR/EIS in Chapter 11, Aquatic Biological Resources; Appendix 11K, Weighted Usable Area Analysis, and Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis. The rearing WUA habitat analysis used to compute the results presented in Appendix 11K, Section 11K.3.2, Rearing Habitat Weighted Usable Area, includes side-channel habitat along the mainstem Sacramento River in its development of rearing habitat WUA curves (U.S. Fish and Wildlife Service 2005). In addition, floodplain hydrologic modeling was conducted for Sacramento River side channels, the Yolo Bypass, and the Sutter Bypass, and related rearing habitat effects were analyzed. The results of these analyses are presented throughout Appendix 11M and in Chapter 11, Aquatic Biological Resources, under Impact FISH-2: Operations Effects on Winter-Run Chinook Salmon, subheading Yolo Bypass Inundated Area. They indicate minor reductions in side-channel habitat acreages under Alternatives 1, 2, and 3 in the Colusa to Knights Landing reach of the river (Appendix 11M, Table 11M-9) and little change in the more upstream reaches (Appendix 11M, Tables 11M-7 and 11M-8). The results also show a minor reduction under Alternatives 1, 2, and 3

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		in the number of inundation events of shorter duration (8 to 17 days) and minor increases in the number of events of longer duration (18 to 24 days) (Appendix 11M, Figure 11M-9). The potential effects of Alternatives 1, 2, and 3 on off-channel rearing habitat in the Yolo and Sutter Bypasses are also analyzed in Appendix 11M and Chapter 11. These results show some reduction in rearing habitat in the Yolo Bypass and little change in the Sutter Bypass (Appendix 11M, Section 11M.3.1, Yolo Bypass Weir Spill Events and Inundated Floodplain Habitat Area, and Section 11M.3.2, Sutter Bypass Weir Spill Events and Inundated Floodplain Habitat Area). No rearing habitat analyses were done for the Feather and American Rivers because no suitable tools or information for conducting such analyses on these rivers were available.
77-103	ATTMT 1. Chapter or Appendix - Section: Appendix 11K - Weighted Usable Area Analysis. Page(s): General Comment. Comment and Recommendations: The RDEIR/SDEIS states that "Rearing habitat WUA was estimated only for the Sacramento River because no adequate flow versus rearing WUA curves located for the Feather or American River were available. The available flow versus rearing WUA information for these rivers is old, limited, and potentially unreliable (Appendix 11K)" (p. 11-58). Instream juvenile rearing habitat data for fall-run Chinook salmon from instream flow studies conducted by Mark Gard (CDFW) for the American River are available online at http://cvpia-habitat-docs-markdown.s3-website-us-west-2.amazonaws.com/watershed/american_river.html (Gill and Tompkins 2020a). Instream spawning and rearing habitat data for fall-run Chinook salmon and steelhead in the Feather River are available online at http://cvpia-habitat-docs-markdown.s3-website-us-west-2.amazonaws.com/watershed/feather_river.html (Gill and Tompkins 2020b). Additionally, instream spawning and rearing habitat data for fall-run Chinook salmon and steelhead in the Feather River from the California	The links provided in the comment point to the Central Valley Project Improvement Act flow-habitat modeling program, conducted by Gill and Tompkins (2020), which uses data from WUA studies found in the literature that the authors cite in their documentation. The studies used to provide rearing habitat WUA data for the American and Feather Rivers in Gill and Tompkins (2020) are studies that are discussed in Appendix 11K, Weighted Usable Area Analysis, Section 11K.2, Methods. This section in Appendix 11K explains why the studies cited in Gill and Tompkins (2020) were not used for the EIR/EIS, and the primary reason was that they are not reliable sources. The studies cited in Gill and Tompkins (2020) include a 1985 USFWS report on American River rearing WUA, which is considered unreliable because of its age and previous lack of application by other researchers. For example, the Water Forum 2017 (Bratovich et al. 2017) report on studies to provide a biological rationale for the Modified Flow Management Standard does not mention or cite the 1985 USFWS report despite developing exhaustive studies related to

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	Department of Water Resources (DWR) and from Thomas R. Payne & Associates were used in instream flow evaluations for the relicensing of the Oroville facilities. These evaluations determined relationships between flow and both suitable spawning and rearing habitat for 23.25 miles of the Feather River. In addition, the CVPIA Structured Decision Making process utilizes the DWR Federal Energy Regulatory Commission (FERC) instream spawning and rearing habitat data for the Feather River. CDFW recommends the Proposed Project utilize these WUA curves to assess potential impacts to rearing Weighted Usable Area for juvenile salmonids in the Feather and American River systems.	flow effects on American River salmonids (unfortunately they do not include rearing habitat WUA). For Feather River rearing WUA, Gill and Tompkins (2020) cite a 2002 study conducted by Payne and Allen that was later updated by a 2005 study by Payne. The results of both studies are considered unreliable and unusable for the purposes of the rearing habitat assessments. The report of the 2005 study (Payne 2005) opens with the following disclaimer: "This addendum to the original SP-F16 report [the 2002 report] serves to describe PHABSIM results for fry and juvenile steelhead trout and Chinook salmon. The results for this component of the analysis were more ambiguous and difficult to interpret than those for adult salmon and steelhead. In an effort to reach agreement on the meaning and applicability of the juvenile salmonid PHABSIM findings, an interagency meeting was held on June 3, 2004. At this meeting it was agreed that, given current channel conditions, the results did not support a clear alternative or ideal discharge level. Rearing habitat indexes for fry and juvenile Chinook salmon and steelhead did not respond clearly or significantly to changes in discharge. Furthermore, results differed markedly depending on how areas having no cover were treated in the model. Although the results appear to be valid (i.e., they correctly represent a simplified version of juvenile fish habitat), the amount of suitable habitat seems relatively insensitive to modeled discharge levels. Based on this interpretation, the group agreed that efforts to improve physical habitat for juvenile salmonids (e.g., increasing habitat complexity with side channels, mid-channel bars, riparian vegetation and/or instream objects) should be given primary consideration, and that any flow changes should be complimentary to these physical habitat enhancements. However, the group did recommend that juvenile salmonid PHABSIM results be used wherever possible to aide [sic] in the design and placement of future habitat enhancements."

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		The Authority and Reclamation recognize others have used the results of the Payne (2005) study, including for the NMFS (2016) Oroville Biological Assessment, but the Payne (2002 or 2005) study results are not appropriate for evaluating effects of flow on rearing habitat quality. The above statement from Payne (2005) has been added to Appendix 11K, Section 11K.2, Methods, to provide a fuller explanation for why this study's results are not used in the EIR/EIS analyses.
77-104	ATTMT 1. Chapter or Appendix - Section: Appendix 11M - Section 11M.2.1, Bypass and Side Channel Inundated Habitat Area. Page(s): p. 11M-1. Comment and Recommendations: The one-meter threshold for optimal floodplain depth is somewhat arbitrary, from both a fish ecology perspective and in context of the modeling accuracy. CDFW recommends an analysis of changes to inundated surface area with removal of discussion related to optimal/suboptimal depths.	The comment recommends quantifying juvenile salmonid rearing habitat in the bypasses and side-channel areas as total inundated habitat without reference to a 1-meter-depth threshold for habitat suitability. We believe this practice would provide a misleading picture of juvenile habitat availability. A number of sources are cited as justification for adopting the 1-meter-depth threshold (in Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis, see first paragraph in Section 11M.2, Methods).
77-105	ATTMT 1. Chapter or Appendix - Section: Appendix 11M - Section 11M.2.2, Bypass Flow and Weir Spill. Page(s): p. 11M-5. Comment and Recommendations: The RDEIR/SDEIS Appendix 11M states, "Note, however, that the total flow in the bypass is not always a good indicator of suitable habitat availability, as shown in Figures 11M-1 and 11M-2" (p. 11M-5). CDFW disagrees with this statement. Flow is a good metric of available suitable habitat in both Sutter Bypass and Yolo Bypass, as increased flows equal increased entrainment of fish.	We have revised the sentence in the Final EIR/EIS as follows to eliminate ambiguity: "Note that the total flow in the bypass is not always a good indicator of suitable rearing habitat availability, as shown in Figures 11M-1 and 11M-2."
77-106	ATTMT 1. Chapter or Appendix - Section: Appendix 11P - Riverine Flow-Survival. Page(s): Figure 11P-1. Comment and Recommendations: The RDEIR/SDEIS's analysis showed that estimated survival for the status quo and Proposed Project scenarios was similar (Figure 11P-1), with the exception of two wet years (2011 and 2017). This illustrates that the Proposed Project diversion criteria generally minimize diversions during the historical periods of fish movement, as reflected in Red Bluff rotary screw	Please see Master Response 5, Aquatic Biological Resources, for a discussion of these topics in the scope of flow and mitigation measures, which notes, for example, limitations in the availability of data for other life stages and how the analysis accounts for fish from Feather River and Butte Creek.

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	trap data. However, fish presence/passage at the RBDD rotary screw traps is an incomplete reference point to assess impacts of Proposed Project diversions on juvenile salmonid flow-survival relationships. Listed fish (Central Valley spring-run Chinook and steelhead) enter the Sacramento River downstream of Red Bluff Diversion Dam (RBDD) (e.g., Antelope, Deer, Mill Creek populations) October through June. Additionally, peak passage events of fish at the RBDD rotary screw traps should be evaluated by juvenile life-stage (e.g., fry, parr, smolt). For example, fry life-stage individuals are caught at much higher rates than larger-sized individuals, and flow-survival impacts should be weighted towards parr and smolt life stages, which are more actively out-migrating through Sacramento River mainstem to reach the ocean versus fry life-stages that are still rearing in the lower Sacramento River and Delta, often for extended periods of time. This is a key consideration for evaluating survival for status quo and Proposed Project scenarios and concluding whether or not survival would be similar in real-life scenarios based on the fish presence criteria used in the Sites Diversion tool. The analysis also omits Proposed Project impacts on Butte Creek and Feather River origin salmonids, including CESA listed salmonids which enter the Sacramento River below Wilkins Slough.	
77-107	ATTMT 1. Chapter or Appendix - Section: Appendix 11P - Riverine Flow-Survival. Page(s): p. 11P.2. Comment and Recommendations: The RDEIR/SDEIS analyzes the effects of in-river flow generally utilizing the best flow survival science available (Michel et. Al. 2021) and has documented the methodology well in Section 11P.2. The RDEIR/SDEIS assesses the proposed diversion criteria by application of published flow-survival relationships to daily flow data, while accounting for historical fish migration patterns as represented in monitoring data. The Sites Reservoir Daily Divertible & Storable Flow Tool provided daily Sacramento River at Wilkins Slough flows for the flow-survival analysis, which include daily diversions by the Red Bluff and Hamilton City diversions. However, the period of record is limited to	Please see Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures, including the lack of Above Normal Water Years noted by the commenter.

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	2009-2018 and does not include above normal year types during which Proposed Project diversions would be expected.	
77-108	ATTMT 1. Chapter or Appendix - Section: Chapter 16 - Section 16.2.2.1, Table 16-2. Page(s): p. 16-4 - 16-6. Comment and Recommendations: Table 16-2 Key Recreational Characteristics of Recreation Area Potentially Affected by Proposed Project-Related Changes to SWP or CVP Operations is missing the Yolo Bypass Wildlife Area, a significant public recreation area in the Yolo Bypass. Additionally, some recreational areas are grouped while others are not (e.g., Sutter Bypass and Sutter National Wildlife Refuge are grouped within Sutter Bypass Wildlife Area). Table 16-2 inconsistently identifies acreage as part of each recreational area description. These details are important for understanding the scale of potential Proposed Project impacts. CDFW recommends the FEIR/FEIS include an updated table that identifies each individual wildlife area potentially affected, with each area's acreage clearly stated.	Table 16-2 in Chapter 16, Recreation Resources, has been modified. The revised table now includes concise and consistent descriptions of each waterbody, including the acreage. The Key Recreational Facilities column now identifies all of the wildlife refuges and wildlife areas along each waterway and within the larger recreational areas. The table modifications do not result in a change in impact determinations or conclusions.
77-109	ATTMT 1. Chapter or Appendix - Section: Chapter 28 - Section 28.4.1.3, Sites Reservoir Operation. Page(s): General Comment. Comment and Recommendations: The modeling conducted in the RDEIR/SDEIS compares both with and without climate change future scenarios for all alternatives. The results from the analyses were then used to qualitatively assess the impacts and benefits that the Proposed Project might have with climate change. The RDEIR/SDEIS states that overall, it is not expected to have adverse effects on aquatic species under climate change (p.28-29). However, analyses in the RDEIR/SDEIS demonstrate that the Proposed Project operations will have an adverse impact on aquatic species and results from the climate modeling indicate the Proposed Project under climate change would likely exacerbate these adverse impacts. For example, the RDEIR/SDEIS states that it "would result in larger reductions to flow under climate change in Critically Dry Water Years from December to March and larger increases in August to make up for the significantly decreased flow"	The description of Project operations has been refined as described in Master Response 2, Alternatives Description and Baseline. The refinements include modification to the minimum Wilkins Slough flow criteria, which now require that diversions to Sites Reservoir may not cause flow at Wilkins Slough to decline below 10,700 cfs from October 1 to June 14. The revised standard is modeled throughout the Final EIR/EIS and included in the modeling results in Chapter 28, Climate Change. Therefore, the Authority and Reclamation have established more protective bypass flow criteria, as recommended by the commenter. In addition, the Authority will consider climate change in the context of operations and the Project objectives through the implementation of an adaptive management plan, as suggested by the commenter. Text in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, has been revised accordingly.

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	(p. 28-16). A reduction in flow in the months of December to March, particularly in critically dry years, which are predicted to increase under climate change, would have adverse effects on rearing and emigrating salmonids. Likewise, the RDEIR/SDEIS's analysis indicates that Delta outflow decreases with climate change, which could further exacerbate impacts to longfin smelt. CDFW recommends establishing more protective bypass flow criteria and include in the Proposed Project's adaptive management plan strategies to address how the Proposed Project may alter future operations to account for the potential adverse effects of climate change.	The text indicated by the commenter in Section 28.5.5, Aquatic Biological Resources (formerly on page 28-29), discusses the Project impacts disclosed in Chapter 11, Aquatic Biological Resources, not potential effects under climate change. The Chapter 28 text has been revised to describe the results presented in Table 28-13. The revisions describe the Project-related actions under climate change that contribute to the modeled results. In most Critically Dry Water Years (e.g., 2014), water for diversion to Sites Reservoir is likely to be unavailable. The results seen in Table 28-13 are primarily attributable to exchanges between Shasta Lake and Sites Reservoir to conserve cold-water pool for temperature control in late summer and fall months. Reclamation may decide to work with the Authority to provide additional temperature control in the upper Sacramento River. Reclamation could deliver water from Sites Reservoir in exchange for conserving cold water in Shasta Lake for temperature management. Under this Project-driven condition, flows upstream of Knights Landing would be reduced. The Project is required to and will comply with existing and future standards for the Sacramento River. Water temperatures in the Sacramento River are and will continue to be managed through water releases from Shasta and Keswick Dams in accordance with the State Water Resources Control Board water rights and water quality criteria related to the CVP and SWP operations under the Project, as well as relevant biological opinions. Reclamation's decision to provide additional temperature control through the use of Shasta Lake under Project conditions is currently and would continue to be required to be made in consultation with Reclamation's existing temperature task group and submitted to the State Water Board, pursuant to Water Rights Order 90-5. The existing minimum bypass flows in the Sacramento River will remain

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		unchanged under the Project (3,250 cfs at the Red Bluff Diversion Dam and 4,000 cfs downstream at the Hamilton City Pump Station). Please see Master Response 5, Aquatic Biological Resources, regarding baseline and special-status species, Project benefits to fisheries, and flow-related effects on longfin smelt and delta smelt.
77-110	ATTMT 1. Chapter or Appendix - Section: Chapter 31 - Section 31.3.1, Surface Water Resources and Water Quality. Page(s): pp. 31-18, 19. Comment and Recommendations: Section 31.3.1 discusses diversions within the Central Valley and Delta as related to Table 31-1. However, the discussion does not include the Delta Conveyance Project (DCP) (although it is included in Table 31-1). The DCP has planned exports ranging from 3,000 cfs to 7,500 cfs, which will affect water supply and water quality. CDFW recommends revising the text to include proposed DCP construction and operations in analyzing the cumulative effects of the Proposed Project with past, present, and foreseeable future projects.	The DWR released the Draft EIR for the Delta Conveyance Project on July 27, 2022, with eight action alternatives. The Department of Water Resources will select an alternative when the Delta Conveyance Project Final EIR is published. Publicly available operations criteria (modeled and not modeled) for the Delta Conveyance Project were unavailable during preparation of the RDEIR/SDEIS; therefore, a quantitative analysis of the cumulative effects of implementing both the Project and the Delta Conveyance Project could not be performed. Please refer to Chapter 31, Cumulative Impacts, for a discussion of the regulatory requirements for analysis of cumulative impacts and for a list of considered projects. The Delta Conveyance Project is considered qualitatively in aggregate with other projects in Chapter 31, Section 31.3.1, Surface Water Resources and Water Quality. In Dry and Critically Dry Water Years, the incremental effects of Sites Reservoir on methylmercury concentrations in fish tissue in the Sacramento River at Freeport (north Delta) would be cumulatively significant when added to the impacts from other projects, including the Delta Conveyance Project. Cumulative effects of Sites Reservoir on Delta salinity and related water quality constituents (e.g., chloride) would be less than significant because Project effects on Delta salinity would be minimal (described in Chapter 6, Surface Water Quality), and all projects potentially affecting Delta salinity would be required to provide flow

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		through the Delta that is sufficient for meeting water quality objectives. A change in flow would not by itself represent an environmental impact. Therefore, the effects of changes in flow described in Chapter 5, Surface Water Resources, on environmental resources are evaluated throughout the document in specific resource chapters and subsections of Chapter 31. For example, the effect of changes in Delta flows, including those that may occur as a result of the Delta Conveyance Project, on aquatic biological resources is evaluated qualitatively in the aquatic biological resources section of Chapter 31. Chapter 31, Section 31.3.6, Aquatic Biological Resources, describes that reasonably foreseeable projects would have to comply with the terms and conditions of regulatory permits (biological opinions and ITPs), which reduces the likelihood of substantial adverse effects on the overall Sacramento River system over its entire geography. Flows in the Sacramento River and Delta are highly altered compared to natural regimes, and they are managed consistent with current regulatory requirements (e.g., 2006 Bay-Delta Water Quality Control Plan, as amended in 2018 (State Water Resources Control Board 2006, 2018), ROC ON LTO BiOps (U.S. Fish and Wildlife Service 2019, National Marine Fisheries Service 2019), and SWP ITP (California Department of Fish and Wildlife 2020)). These managed flows provide essential habitat elements for a variety of species and ecological processes. Any new diversions or ongoing operations that have the potential to affect fish habitat resulting from a change in Sacramento River flow would also be required to operate consistent with regulatory requirements. Flows in the Sacramento River, its major tributaries and flood bypasses, and the Delta are, and will continue to be, managed to meet regulatory objectives, which have been

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		developed to be protective of fish, fish habitat, and ecological processes. Increased transfers through the Delta potentially resulting from Sites Reservoir (e.g., to move water to Sites Storage Partners) would result in more fresh water moving through the Delta, not less. Water transfers between Storage Partners are included in the CALSIM simulations. If, in the future, these transfers were made through the Delta tunnel instead of through the Delta, the effect on flows through the Delta would be as if no transfer had occurred.
77-111	[Attachment 2: Appendix B, References]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter.
78-1	The mission of the State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards throughout the state (Regional Boards) (collectively 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 administers water rights in California and the State and Regional Boards have primary authority over the protection of the State's water quality. The Sites Project will require both water right and water quality approvals from the State Water Board and Central Valley Regional Water Quality Control Board (Central Valley Water Board). Accordingly, the Water Boards are responsible agencies for the Project pursuant to the California Environmental Quality Act (CEQA).	The Authority and Reclamation appreciate the State Water Resources Control Board's (State Water Board's) engagement on the Project. The Authority and Reclamation acknowledge the various authorities of the State Water Board and the regional water quality control boards. The water rights and water quality processes the commenter notes are identified in Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements. The Authority and Reclamation appreciate the collective State Water Board's and Regional Water Quality Control Boards' (Water Boards') input.

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	As responsible agencies under CEQA, the Water Boards must review and consider the environmental effects of the Project identified in the draft REIR/SEIS that are within their purview and reach their own conclusions on whether and how to approve the project. (Cal. Code Regs., tit. 14, § 15096, subd. (a).) Responsible agencies should also comment on draft environmental impact reports and negative declarations for projects that will require the responsible agencies' approval. (Id., § 15096, subd. (d).) Accordingly, the Water Boards submit these joint comments. General comments regarding the Project are included below whereas specific comments are included in a comment table as an attachment to this letter. In addition, for each comment in the attached table, the commenting Water Board (or Section within the State Water Board) is identified to facilitate follow up discussion between staff if warranted. Should you have questions or topics for discussion regarding these comments, please contact the appropriate staff identified below.	
78-2	Consideration of CEQA by the Water Boards The Water Boards, as responsible agencies under CEQA, will review and consider the draft REIR/SEIS prepared by the Sites Project Authority (Authority) for the Project. Consideration of environmental effects is required before taking any final action, such as issuing a water right permit or a water quality certification pursuant to section 401 of the Clean Water Act. Accordingly, these comments are intended to assist in development of a robust CEQA document capable of supporting actions by the Water Boards for the Project. Addressing the Water Boards comments provided in this letter may take additional time at this stage for the Project, but availability of this information is expected to result in more timely processing of the Authority's applications for permits and other approvals from the Water Boards. In exercising their independent authority, however,	The Authority and Reclamation acknowledge the State Water Board's and regional boards' authorities and the relevance of this EIR/EIS to their respective processes and approvals related to the Project.

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	the Water Boards may reach determinations that differ from those presented in the draft REIR/SEIS.	
78-3	Water Rights The Project will involve the diversion and use of surface water from the Sacramento River and will require a water right permit. The draft REIR/SEIS states that the Authority intends to file a water right application to appropriate water by permit with the State Water Board. Consideration of such an application is a discretionary action that requires a determination that unappropriated water is available, a review of potential impacts to public trust resources, and a determination that the appropriation of water is in the public interest.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding water rights. The Authority and Reclamation acknowledge that the Project requires a water right, involving a water right application and discretionary action by the State Water Board.
78-4	Water Right Processing, Timing, and Hearing Water right applications can vary greatly in processing time depending on the size and complexity of the project. When a water right application is submitted to the State Water Board, staff will review the application for completeness within 30 days. However, if deficiencies are found that make the application incomplete, the State Water Board will send a deficiency letter which will provide a minimum of 60 days to address deficiencies. The State Water Board will begin processing the application once it is deemed complete. The Board's first step will be to prepare a public notice of the application. Public noticing of water right applications includes publication to provide existing water right holders and other stakeholders that may be affected by the proposed project information about the project and the opportunity to file protests against approval of the application. The noticing period for the Project would be 60 days. Individuals and other entities may file protests against the water right application if they think that the proposed action will cause injury to an existing water right holder,	The Authority and Reclamation appreciate this discussion of the water rights application process. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding water rights. Master Response 1 discusses that process as it relates to the lead agency processes by the Authority and Reclamation in deciding whether and, if so, how to approve the Project within their statutory authorities.

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	adversely affect public trust resources, have an adverse environmental impact, or not be in the public interest. If a valid protest is received during the noticing period, the water right applicant will be prompted to conduct protest resolution. (Wat. Code, § 1333.) Protest resolution typically lasts a minimum of 180 days. Depending on the number and content of the protests, protest resolution may be a lengthy process. Protest resolution may also result in the water right applicant and/or the protestants providing additional information to support their findings and/or claims. (Wat. Code, § 1334.) Protest resolution may result in the applicant conducting additional analysis to investigate matters raised by protestants. A robust draft REIR/SEIS and supporting documentation should assist a water right applicant in resolving protests. In addition to the notice and protest process, other processing steps run concurrently, such as evaluation of water availability and potential impacts to public trust resources, as discussed below. This project may involve a petition to acquire a state-filed application. A water right hearing is required if a petition for assignment of a state-filed application is filed. (Wat. Code, § 10504.1.) A water right hearing is also required if there are outstanding protests on a water right application that raise disputed issues of material fact. (Wat. Code, § 1350, 1351.) Whenever practicable, a hearing on a petition for assignment of a state-filed application will be combined with any required hearing on a related application. (See Cal. Code Regs., tit. 23, § 739.) If the water right application for the Project requires a water right hearing, the hearings process generally runs after the steps discussed above, as information generated during processing is relied upon during the hearing. As mentioned above regarding protests, a robust draft REIR/SEIS, addressing all State Water Board comments is expected to greatly assist with this process.	

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	A hearing may take several years to complete. The California Water Commission has provided resources for State Water Board staffing to assist with processing of Proposition 1 Water Storage Investment Program (WSIP) projects, including this project. This dedicated staffing allows for expedited processing. The Authority should be aware that even when a project is considered expedited, hearing on an expedited project will be prioritized as appropriate in regard to other high priority efforts, such as other WSIP projects and other high priority matters that require a hearing, and reprioritization of State Water Board efforts due to drought conditions is a possibility. The Authority has indicated during its CEQA public scoping meetings and in the construction schedule (table 2C-18) in the draft REIR/SEIS that it would like to have all permit approvals for the Project, including any approvals from the State Water Board, by mid-2023. The Authority should be aware that processing a water right application for the Project will take a considerable amount of time due to the complexity of the Project, and the Authority should be prepared to accommodate a process that is likely to take longer to complete than 18 months. The applicant can help speed the hearing timeline, and the entire water rights process, by completing a robust water availability analysis and resolving protests prior to the hearing.	
78-5	Water Availability and Public Interest The State Water Board will consider the hydrologic analyses, diversion criteria, and water availability findings included in the draft REIR/SEIS while processing the water right application filed for the proposed project. However, the Authority is advised that the State Water Board is required under the Water Code to make its own independent findings on the availability of unappropriated water to supply the proposed project as a prerequisite to any water right permitting decision. In determining the	The Authority and Reclamation appreciate this information regarding the State Water Board's process for considering a water right application and specifically the importance of a water availability analysis. As described in Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, the Authority submitted the Application to Appropriate Water for the Sites Reservoir Project to the State Water Board Division of Water Rights on May 10, 2022, via the Water Rights Online Forum and directly to the Division of Water Rights (Sites Project Authority 2022). The

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	amount of water available for appropriation, the State Water Board must take into consideration the public interest and the relative benefit to be derived from all beneficial uses of the water concerned, including irrigation, municipal, industrial, recreation, preservation and enhancement of fish and wildlife resources, and the water quality needed to protect beneficial uses. In order to inform the State Water Board's decision making, the environmental document should include an evaluation of a range of operating criteria as discussed further below. If such analyses are not included in the environmental document, additional hydrologic analyses will likely be required during the water right permitting process to inform and support the State Water Board's water availability findings. These additional analyses may ultimately lead to water availability findings and associated restrictions on the proposed diversions that differ from those presented in the draft REIR/SEIS.	application included a water availability analysis using three different analytical methods with varying levels of conservatism (Sites Project Authority 2022).
78-6	Public Trust In addition to the State Water Board's obligations under CEQA and the Water Code, the State Water Board has an independent obligation to consider the effect of an application for a water right permit on public trust resources, and avoid or minimize harm to those resources to the extent feasible and in the public interest. (National Audubon Society v. Superior Court (1983) 33 Cal.3d 419, 446-447.). The common law public trust doctrine protects public uses of navigable water bodies, including fishing, recreation, and the preservation of fish and wildlife habitat. Under the public trust doctrine, the State Water Board has a duty of continuing supervision over the appropriation of water. The Board is not confined by past allocation decisions, and the CEQA baseline should not be construed as the appropriate baseline for consideration of the need to protect public trust resources. In addition, it is the policy of this state that all state agencies, boards, and commissions seek to conserve endangered species	The Authority and Reclamation appreciate this information regarding the State Water Board's process for considering a water right application and specifically the State Water Board's obligation to consider the effect of an application on public trust resources. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public trust and California reasonable use doctrines in relation to the Project.

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	and threatened species and use their authority in furtherance of the purposes of the California Endangered Species Act. State agencies should not approve projects which would jeopardize the continued existence or habitat of any endangered species or threatened species if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy. (Fish & G. Code, §§ 2053 & 2055.)	
78-7	Range of Alternatives The State Water Board acknowledges the significant benefit of a major new water supply project such as Sites Reservoir to enhance California's water resiliency, where such projects can be designed and operated in a manner that does not exacerbate existing pressures on the Delta ecosystem. In order to provide for the timely processing of the Sites Project water right application and associated approvals, the draft REIR/SEIS should include an evaluation of a reasonable range of operational alternatives, specifically including operating constraints that would result in concentrating diversions during high flow periods when there is excess flow in the system and avoiding proposed diversions during lower flow periods when those flows provide for protection of water quality, fish, and wildlife. As described in the draft REIR/SEIS, the mitigation actions may not be sufficient to reduce operational impacts of the proposed project to less than significant for salmonids, delta smelt, and longfin smelt. Current science indicates that average Delta outflows as high as 42,800 cfs from January through June provide benefits to longfin smelt and other Delta species. Evaluating a range of bypass flows needed to achieve outflows up to this level and other levels that current science identified in the State Water Board's 2017 Scientific Basis Report indicates is protective of Delta species is important to understand the benefits and tradeoffs of this Project.	The Authority and Reclamation considered multiple operational scenarios over the course of the Project development that were designed to meet the Project objectives, purpose, and need; enhance Project benefits; and reduce or avoid impacts. The features of alternatives, including Sites Reservoir capacity, conveyance systems, and operational scenarios, were conceptually developed and refined over time to maximize the achievement of the objectives. This process is described in Appendix 2A, Alternatives Screening and Evaluation, and Appendix 2B, Additional Alternatives Screening and Evaluation. Please see Master Response 9, Alternatives Development, regarding operational criteria development. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the water rights process and the State Water Board's Scientific Basis Report and the 2006 Bay-Delta Water Quality Control Plan, as amended in 2018 (Bay-Delta Plan) (State Water Resources Control Board 2006, 2018). Please see Master Response 2, Alternatives Description and Baseline, regarding merits of the Project and alternatives, as well as refinements to Project operations. Please see Master Response 9, Alternatives Development, regarding identified adverse effects on fish and wildlife disclosed in the EIR/EIS that would not be substantially lessened as a result of changed operational criteria.

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	The alternatives evaluated in the draft REIR/SEIS all have very similar operational constraints, with relatively minimal bypass flow criteria. Additional operational alternatives should be evaluated in order to provide a reasonable range of alternatives to inform the public and other decision makers of the benefits and impacts of the Project.	In the Final EIR/EIS, the refinements include modification to the minimum bypass Wilkins Slough flow criteria, which now requires that diversions to Sites Reservoir may not cause flow at Wilkins Slough to decline below 10,700 cfs from October 1 to June. Also, the minimum flow requirements have been increased to 10,700 cfs for October 1 through June 14 and 5,000 cfs for September (there will be no diversion from June 15 to August 31 because the Sacramento River is fully appropriated). This incorporation of higher flow requirements into the Project description eliminates the need for Mitigation Measure FISH-2.1, and new modeling results indicate the corresponding impacts for Impacts FISH-2, FISH-3, FISH-4, and FISH-5 remain less than significant. Please refer to Master Response 2, Alternatives Description and Baseline, regarding refinements to Project operations, such as refinements to the Wilkins Slough bypass criteria. Please see Master Response 5, Aquatic Biological Resources, for a discussion related to longfin smelt and Mitigation Measure FISH-9.1. Master Response 9 also discusses the reasonable range of feasible alternatives and the operational criteria considered and evaluated over the years, including refinements to Project operations such as refinements to the Wilkins Slough criteria.
78-8	The alternatives are also needed to provide adequate information to support the State Water Board's independent decision-making process to determine if, and under what conditions, to issue a water right permit or water quality certification for the Project. The operating constraints for the Project identified in the draft REIR/SEIS are based largely on existing regulatory requirements applicable to the existing operations of the State Water Project (SWP) and Central Valley Project (CVP) that were developed without consideration of the Sites Project. Many of these requirements are	As described in Chapter 2, Project Description and Alternatives, the Authority intends to apply for and obtain a water right permit from the State Water Board for the operation of Sites Reservoir. Chapter 2 also describes the reasonably foreseeable future conditions that were used as the environmental baseline and indicates that the 2019 Biological Opinions from the U.S. Fish and Wildlife Service and National Marine Fisheries Service for the Reinitiation of Consultation on the Long-Term Operation of the Central Valley Project and State Water Project (U.S. Fish and Wildlife Service 2019, National Marine

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	in the process of being updated to strengthen environmental protections, including the water quality and flow objectives included in the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) and the federal biological opinions issued under the federal Endangered Species Act for the long-term operation of the SWP and CVP. In prior comments on the Project's environmental documentation, the State Water Board has consistently indicated that a range of operating criteria should be evaluated for the Project to inform the State Water Board's decision making. Specifically, the State Water Board has commented that operating criteria should be evaluated that are consistent with possible updates to the Bay-Delta Plan, which are reasonably foreseeable, as identified in the State Water Board's 2017 scientific basis report in support of potential update and implementation of the Bay-Delta Plan (www.waterboards.ca.gov/water_issues/programs/peer_review/docs/scientific_basis_phase_ii/201710_bdphaseII_sciencereport.pdf) and the State Water Board's 2018 Framework for possible updates to the Bay-Delta Plan. Specifically, bypass flow criteria should be evaluated that are consistent with achieving inflows and outflows of 55 percent of unimpaired flow, with a range of 45 to 65 percent. This information is needed to evaluate water availability for permitting purposes and the potential to meet state approved water quality objectives and standards for certification purposes. If this information is not included in the EIR/EIS, then supplemental analyses may be needed, which could result in longer processing timelines for the Sites water right application and could delay other decisions by the Water Boards.	Fisheries Service 2019) and the Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project Incidental Take Permit (California Department of Fish and Wildlife 2020) are included in the baseline conditions. Please see Master Response 2, Alternatives Description and Baseline, and Master Response 9, Alternatives Development, for further information on the alternatives and their development. There are a number of pending projects and actions in the Delta that are currently too speculative to analyze at this time, such as the Delta Conveyance Project, updates to the Bay-Delta Plan (State Water Resources Control Board 2006, 2018), and voluntary agreements. Without additional information (e.g., SacWAM results) to calculate water availability, it is not possible for the Authority or Reclamation to evaluate the impacts of such changes to the Project. The Authority understands that the State Water Board may seek additional analysis of the Project during the Board's water rights and certification processes. The Authority will work with the State Water Board to provide additional analysis. As identified in Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, the Authority recognizes and acknowledges that updates to the Bay-Delta Plan could result in restrictions on diversions for Sites Reservoir. Please also see Master Response 3, Hydrology and Hydrologic Modeling, for a description of the modeling criteria used in the RDEIR/SDEIS analyses.
78-9	As you are aware, the California Environmental Protection Agency and California Natural Resources Agency are engaged in efforts to develop a voluntary agreement to implement updates to the Bay-Delta Plan that, if	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, and the response to comment

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	successful, will be submitted to the State Water Board and potentially incorporated into the Bay-Delta Plan. A voluntary agreement, however, would not necessarily contemplate or address operating criteria for new diversion projects or other diverters that are not part of any voluntary agreement. Ideally, the draft REIR/SEIS would evaluate how the project would affect tributary and Delta outflows that would be provided through a voluntary agreement and demonstrate, though imposition of appropriate operational criteria, that the project would not detract from voluntary agreement flows, including new flows or ambient flows that a voluntary agreement would rely on. This would facilitate a project design that is harmonized with a voluntary agreement and one that is potentially consistent with updated Bay Delta plan criteria. Absent this analysis, the Authority runs the risk of advancing a project that is not compatible with a voluntary agreement.	78-8 with regard to the Bay-Delta Plan (State Water Resources Control Board 2006, 2018) and the voluntary agreements.
78-10	Evaluation of the Effects of the Project The environmental document should fully describe how the Project is proposed to be integrated with other major existing and planned water infrastructure projects, many of which involve participants in the Sites project, including planned operations and accounting for those operations. The lack of explanation of how these projects would work together prevents a full understanding of the project. Further, the environmental document relies on the development of future plans to mitigate impacts of the project on water quality and fish and wildlife. The major details of these plans are needed in order to fully evaluate the effectiveness of these mitigation measures and the full impacts of the project.	The cumulative impact analysis in Chapter 31, Cumulative Impacts, provides a qualitative analysis of how the Project would interact with other water infrastructure projects. In addition, the modeling incorporates exchanges and diversion criteria to represent the integration of the Project with the CVP and SWP systems. Please also see Master Response 2, Alternatives Description and Baseline, regarding coordination with CVP and SWP and disclosure of impacts. The Project's impacts on water quality, fish and wildlife are described in Chapter 6, Surface Water Quality, Chapter 11, Aquatic Biological Resources, and Chapter 10, Wildlife Resources. Please see Master Response 4, Water Quality; Master Resource 5, Aquatic Biological Resources; and Master Response 6, Vegetation, Wetland, and Wildlife Resources, for additional information regarding the modeling analysis in the EIR/EIS. Where the environmental analysis identifies potentially

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		significant impacts, specific mitigation measures are identified in the EIR/EIS. In addition to the mitigation measures addressing potentially significant impacts, future studies and adaptive management plans are a part of the Project and will be used to measure the performance of the Project and to refine Project operations as needed based on future site-specific conditions and applicable regulatory requirements. The adaptive management for the Project does not impede the environmental impact evaluation or the effectiveness of mitigation, which is based on a robust scientific and technical analysis. It is designed to monitor the impacts of the Project's operation and to provide future flexibility to incorporate information about Project operations as this information arises into management of the Project and of its potential impacts on water quality and aquatic resources.
78-11	Water Quality Certification Section 401 of the Clean Water Act (33 U.S.C. § 1341) requires any applicant for a federal license or permit for an activity that may result in any discharge to waters of the United States to obtain certification from the State that the project will comply with the applicable water quality requirements, including water quality standards promulgated pursuant to section 303 of the Clean Water Act (33 U.S.C. § 1313). Clean Water Act section 401 directs that certifications shall prescribe effluent limitations and other conditions necessary to ensure compliance with the Clean Water Act and with any other appropriate requirements of state law, which includes the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.). Conditions of certification shall become a condition of any federal license or permit subject to certification. The Project requires one or more federal permits and will result in a discharge to waters of the United States, and therefore	The Section 401 water quality certification is described in Table 4-2 of Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements. The Authority will obtain all required permits and comply with all permit requirements. Although the net effect of the Project would be to enhance beneficial uses of water, the Authority and Reclamation are aware that, as part of the State Water Board and Regional Water Quality Control Boards' permitting processes, additional actions may be required beyond the CEQA mitigation measures. BMPs related to disturbance of waters of the United States are described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies.

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	must obtain a water quality certification from the State Water Board. Since the Project involves a water right activity, the application for a Water Quality Certification should be submitted to the State Water Board, which will coordinate with the Central Valley Water Board on its processing. The State Water Board's certification must ensure compliance with applicable water quality standards as listed in regional and state water quality control plans. Water quality control plans designate the beneficial uses of water that are to be protected (such as municipal and industrial, agricultural, and fish and wildlife beneficial uses), water quality objectives for the reasonable protection of the beneficial uses and the prevention of nuisance, and a program of implementation to achieve the water quality objectives. (Wat. Code, §§ 13241, 13050, subds. (h), (j).) The beneficial uses, together with the water quality objectives contained in the water quality control plans, and applicable state and federal anti-degradation requirements, constitute California's water quality standards for purposes of the Clean Water Act. In issuing water quality certification for a project, the State Water Board must ensure consistency with the designated beneficial uses of waters affected by the project, the water quality objectives developed to protect those uses, and anti-degradation requirements. (PUD No. 1 of Jefferson County v. Washington Dept. of Ecology (1994) 511 U.S. 700, 714-719.) Although the draft REIR/SEIS analyzes the Project's potential impacts to environmental resources in comparison to baseline (existing) environmental conditions, the water quality certification process will evaluate the Project's consistency with water quality standards. The evaluation of the Project's consistency with water quality standards may require actions in addition to proposed CEQA mitigation measures.	

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78-12	Central Valley Water Board The Central Valley Water Board is responsible for protecting the quality of surface and groundwaters of the state through regulatory actions and permitting authorities as provided below. The Project must comply with the requirements listed below by the Central Valley Water Board which includes the Basin Plan, Antidegradation Considerations, Total Maximum Daily Loads (TMDLs) and Impaired Water Bodies, Construction Storm Water General Permit, Waste Discharge Requirements, Dewatering Permit, Limited Threat General NPDES Permit, and NPDES permit.	The Authority and Reclamation acknowledge the State Water Board's comment regarding Central Valley Regional Water Quality Control Board jurisdiction. The Final EIR/EIS discusses the Central Valley Regional Water Quality Control Board jurisdiction and associated permitting requirements in the following sections: Table 4-1 of Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements. In Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, please see: BMP-12, Development and Implementation of Stormwater Pollution Prevention Plan(s) (SWPPP) and Obtainment of Coverage under Stormwater Construction General Permit (Stormwater and Non-stormwater) (Water Quality Order No. 2022-0057-DWQ/NPDES No. CAS000002 and any amendments thereto), for a discussion of the State Water Board Stormwater Construction General Permit BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002 for Limited Threat Discharges to Surface Water) and State Water Resources Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the existing permits and any amendments thereto), for a discussion of actions to comply with permit requirements related to discharged surface water and groundwater from dewatering activities.

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		In Appendix 4A, Regulatory Requirements, please see the following sections: Section 4A.2.2.2, Porter-Cologne Water Quality Control Act, for a discussion of the basin plans and State Water Board and U.S. Environmental Protection Agency (USEPA's) approval and for a discussion of total maximum daily load (TMDL) programs. Section 4A.2.2.3, California Antidegradation Policy, for a discussion of the California Antidegradation Policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Waters in California (State Water Board Resolution No. 68-16). Section 4A.2.1.1, Clean Water Act, for a discussion of Clean Water Act Section 303(d) requirements and a discussion of water quality impairments and TMDL programs. The Authority and Reclamation reiterate their response to comments from the Central Valley Regional Water Quality Control Board (Comment Letter 76) that the Authority will obtain all required permits and comply with all permit requirements.
78-13	Basin Plan The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act and has developed the Water Quality Control Plan for the Sacramento and San Joaquin River Basins. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. Water quality standards are also	Please see Appendix 4A, Regulatory Requirements, Section 4A.2.2, State Policies and Regulations, for discussion of the Porter-Cologne Water Quality Control Act, Basin Plans, and California Toxics Rule (CTR). Please also see response to comment 78-12.

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	contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38. For more information on the Water Quality Control Plan for the Sacramento and San Joaquin River Basins, please visit our website: www.waterboards.ca.gov/centralvalley/water_issues/basin_plans	
78-14	Antidegradation Considerations All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The Antidegradation Implementation Policy is available on page 74 at: www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf In part it states: Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State. This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.	Please see Appendix 4A, Regulatory Requirements, Section 4A.2.2.3, California Antidegradation Policy, for a discussion of the California Antidegradation Policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Waters in California (State Water Board Resolution No. 68-16). As a result of this policy, the water quality assessment for the Project evaluates the potential for substantial degradation of water quality even if all water quality standards and requirements are expected to be maintained. The Authority will obtain all required permits and comply with all permit requirements.
78-15	Total Maximum Daily Loads (TMDLs) and Impaired Water Bodies Shasta Lake, Sacramento River, Lake Oroville, Feather River, Folsom Lake, American River, Yolo Bypass, and the Sacramento-San Joaquin Delta are	Table 6A-4 in Appendix 6A, Water Quality Constituents and Beneficial Uses, of the RDEIR/SDEIS has been updated based on the most current approved 303(d) list (i.e., 2020–2022 303(d)) list, and the table title revised to "Impaired Water Bodies in the Study Area Included in

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	currently on the Clean Water Act Section 303(d) List of Impaired Waters due to a wide variety of constituents of concern, including chlordane, chlorpyrifos, DDT (Dichlorodiphenyltrichloroethane), diazinon, dieldrin, group A pesticides, invasive species, mercury, PCBs (Polychlorinated biphenyls), and toxicity. Central Valley Water Board staff recommends referencing the most current 303(d) list and requirements contained in existing TMDLs for the potential discharge area of the reservoir within the draft REIR/SEIS.	the 2020–2022 California Integrated Report for Clean Water Act Sections 303(d) and 305(b)" in the Final EIR/EIS. Relevant TMDLs for water quality impairments in the study area are identified in Section 6.2, Environmental Setting, of Chapter 6, Surface Water Quality. The updates to the 303(d) list for the geographies discussed in the impact analysis were relatively minor and include water temperature and dissolved oxygen (DO) for specific reaches of the Sacramento River. The updates to the most recently approved list(s) do not change conclusions or impact determinations identified in the analysis because Sites Reservoir releases would not adversely affect water temperature or DO in the Sacramento River.
78-16	The Yolo Bypass Sacramento River is identified on the Clean Water Act Section 303(d) List as impaired by mercury because of elevated methylmercury concentrations in fish that pose a risk to wildlife and humans who consume fish. Due to historical mercury and/or gold mining in the watershed, the project boundary likely has deposits of mercury-containing sediments. As project construction is occurring, Central Valley Water Board staff recommends project proponents implement practices to control erosion and minimize discharges of mercury and methylmercury. For instance, Central Valley Water Board staff recommends the implementation of turbidity curtains and/or cofferdams for in-water work to limit the discharge of suspended solids downstream, which will reduce the risk of methylation downstream of mercury that is attached to those suspended solids. The goal is to minimize erosion of the mercury-containing soils in order to protect beneficial uses in this portion of the Sacramento River and to reduce mercury and methylmercury loads moving downstream.	As identified in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, erosion and sediment control measures will be implemented as part of BMP-12, Development and Implementation of Stormwater Pollution Prevention Plan(s) (SWPPP) and Obtainment of Coverage under Stormwater Construction General Permit (Stormwater and Non-stormwater) (Water Quality Order No. 2022-0057-DWQ/NPDES No. CAS000002 and any amendments thereto). In addition, as identified in Chapter 6, Surface Water Quality, in the Impact WQ-1 discussion, in-channel or in-water construction would require the temporary installation of coffer dams, and silt curtains would be used, as necessary, when installing coffer dam sheet piles for construction in Sacramento River. Water pumped from behind the Sacramento River coffer dam (i.e., on the landward side) would be discharged through a silt sock to the area between the coffer dam and the silt curtains to minimize turbidity effects in the river channel.
78-17	The Central Valley Water Board requests that the Project proponent coordinate with Central Valley Water Board TMDL staff to develop a monitoring plan that would reduce the potential for methylation and	As noted in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, methylmercury reduction actions will be implemented in coordination with the State Water Board and the

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	mercury contamination, or contamination of any other constituents of concern, in the surrounding areas that may be influenced by discharge from the reservoir from regular operation, as identified within mitigation measures discussed in Chapter 6 of the draft REIR/SEIS.	Central Valley Regional Water Quality Control Board, as required. Monitoring is necessarily part of any methylmercury reduction action(s) that may be implemented in Sites Reservoir because pre-action and post-action monitoring would be the only means of determining whether methylmercury reduction actions were successful. Text was added to Appendix 2D in the Final EIR/EIS to note that, in addition to methylmercury reduction actions, fish tissue monitoring will also be implemented in coordination with the State Water Board and Central Valley Regional Water Quality Control Board, as required. Text was also added to Appendix 2D providing for water quality monitoring for cyanobacteria and cyanotoxins at multiple depths and locations in the vicinity of the I/O tower and downstream if, based on visual monitoring, harmful algal blooms (HABs) occur near the I/O tower. These text additions do not change the conclusions or impact determinations identified in the analysis. In addition, text has been added to Appendix 2D of the Final EIR/EIS to clarify how the Reservoir Management Plan (RMP) will be modified over time. The RMP is and will continue to be revised throughout the operation of the reservoir. This text addition does not change conclusions or impact determinations identified in the analysis in Chapter 6. Revisions to the RMP will be prepared in consultation with regulatory agencies and other stakeholders.
78-18	Due to concerns with likely spikes in methylmercury with the operation of the reservoir, the Central Valley Water Board recommends that reservoir managers monitor and report mercury in fish tissue periodically (minimum every 10 years) in a range of species, following Surface Water Ambient Monitoring Program (SWAMP) Safe To Eat Workgroup protocols.	Text was added to Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, as well as Mitigation Measure WQ-1.1, of the Final EIR/EIS noting that ongoing monitoring, including aqueous and fish tissue methylmercury, will be implemented to assess the effectiveness of methylmercury reduction actions (specifically water chemistry management actions). Text was also added that following the initial filling of Sites Reservoir, a fish

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		sampling program will be implemented to determine if a population of game fish has established. If so, fish tissue monitoring for mercury will be implemented and, as available, tissue from both sport and prey-sized fish from multiple species will be sampled. In addition, text was added to Appendix 2D and Mitigation Measure WQ-1.1 to note that, in addition to methylmercury reduction actions, fish tissue monitoring will also be implemented in coordination with the State Water Board and the Central Valley Regional Water Quality Control Board, as required. Text was revised in Appendix 2D and Mitigation Measure WQ-1.1 to include the Safe to Eat Workgroup protocol and to clarify that multiple fish species will be sampled, as identified by the comment. The text revisions do not result in a change to an impact determination or conclusion. The Authority will coordinate with the Central Valley Regional Water Quality Control Board to implement mercury/methylmercury control or reduction measures and monitor and report on fish tissue methylmercury, as required.
78-19	Construction Storm Water General Permit Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction	Please see Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, under BMP-12, Development and Implementation of Stormwater Pollution Prevention Plan(s) (SWPPP) and Obtainment of Coverage under Stormwater Construction General Permit (Stormwater and Non-stormwater) (Water Quality Order No. 2022-0057-DWQ/NPDES No. CAS000002 and any amendments thereto). The Authority will obtain all required permits and comply with all permit requirements.

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	activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Board website at: www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.html	
78-20	Waste Discharge Requirements – Discharges to Waters of the State If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/	Please see Appendix 4A, Regulatory Requirements, Section 4A.2.2.2, Porter-Cologne Water Quality Control Act, for a discussion of waters of the state. The Authority will obtain all required permits and comply with all permit requirements.
78-21	Dewatering Permit	Groundwater dewatering and the Project's compliance with applicable State Water Board and Central Valley Regional Water Quality Control

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	If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge. For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at: www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at: www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf	Board requirements are described in Chapter 8, Groundwater Resources, and in BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002 for Limited Threat Discharges to Surface Water) and State Water Resources Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the existing permits and any amendments thereto), in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. The Authority will obtain all required permits and comply with all permit requirements.
78-22	Limited Threat General NPDES Permit If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for Limited Threat Discharges to Surface Water (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the	As described in Chapter 8, Groundwater Resources, groundwater discharged to surface waterbodies would comply with Central Valley Regional Water Quality Control Board Order No. R5-2022-0006, and groundwater discharged to land would comply with State Water Board Order No. 2003-0003-003-DWQ (BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002 for Limited Threat Discharges to Surface Water) and State Water Resources Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To

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	Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf	Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the existing permits and any amendments thereto)). See also BMP-14 in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. The Authority will obtain all required permits and comply with all permit requirements.
78-23	NPDES Permit If the proposed project discharges pollutants to waters of the United States and the discharge is not eligible for coverage under the Limited Threat General NPDES Permit, the proposed project will require coverage under an individual National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: www.waterboards.ca.gov/centralvalley/help/permit/	If any National Pollutant Discharge Elimination System permits are required in connection with the Project in addition to permits related to stormwater and dewatering that are discussed in these responses, all required permit processes will be followed by the Authority and its contractors.
78-24	Tribal Resources For projects that may involve tribal resources, the Water Boards are committed to having meaningful involvement and consultation with California Native American Tribes on actions that may have an impact to tribal lands, tribal interest, and/or tribal cultural resources consistent with the mission of the Water Boards: www.waterboards.ca.gov/about_us/public_participation/tribal_affairs/docs/california_water_board_tribal_consultation_policy.pdf	Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, for the Authority's and Reclamation's tribal consultation obligations.
78-25	Equity Resolution	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the relationship with other plans, programs, policies, and agencies. See also Master

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	The State Water Board adopted Resolution No. 2021-0050, Condemning Racism, Xenophobia, Bigotry, and Racial Injustice and Strengthening Commitment to Racial Equality, Diversity, Inclusion, Access, and Anti-Racism (https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2021/rs2021_0050.pdf). Any action by the State Water Board related to the Project will take this resolution into consideration ensuring there is no conflict with the resolution.	Response 1 regarding the State Water Board Diversity, Equity, and Inclusion Resolution. The State Water Board's comment with respect to Resolution No. 2021-0050 is noted.
78-26	Page ES-7 - For the No Project Alternative, the Executive Summary identifies that most water users would use their total contract amounts and most senior water right users would also fully use or divert pursuant to their water rights. However, many contractors and water right holders do not use their full contract amounts or water rights even when those supplies are available. This should be clarified. A summary of historical uses for the different groups of water users should be provided. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Please see Master Response 2, Alternatives Description and Baseline, for information regarding water use and contract amounts. Please also see Master Response 3, Hydrology and Hydrologic Modeling, regarding the modeled representation of the baseline and water rights and contracts.
78-27	Page ES-7 - The alternatives evaluated in the draft REIR/SEIS appear to be minor variations of one alternative and do not appear to provide a reasonable range of alternatives pursuant to CEQA requirements or meet the State Water Board's informational needs. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Please see response to comment 78-7 regarding the multiple operational scenarios considered by the Authority and Reclamation over the course of the Project. Please see Master Response 9, Alternatives Development, regarding operational criteria development and the reasonable range of feasible alternatives pursuant to CEQA requirements. Please also see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the interaction between the EIR/EIS and the separate State Water Board water rights process.
78-28	Page ES-7: It does not appear that the action alternatives incorporate reasonably foreseeable changes to regulatory instream flow requirements as described in the Board's scientific basis report in support of potential	This EIR/EIS identifies a reasonable range of alternatives for analysis under CEQA and NEPA. As described in Chapter 2, Project Description and Alternatives, Appendix 2A, Alternatives Screening and Evaluation,

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	update and implementation of the Bay-Delta Plan. Potential changes include new and modified Sacramento River inflow, Delta outflow, and cold water habitat objectives, as well as other requirements to ensure the reasonable protection of fish and wildlife beneficial uses. The Board released a final report identifying the science upon which changes to the Bay-Delta Plan will be based. The draft REIR/REIS should analyze a range of bypass flows, diversion rates and amounts, that are consistent with the scientific basis report regarding potential modification to flow requirements and cold water habitat objectives for the protection of fish and wildlife. This information is needed to evaluate water availability for permitting purposes and potential to meet state approved water quality objectives and standards for certification purposes. https://www.waterboards.ca.gov/water_issues/programs/peer_review/docs/scientific_basis_phase_ii/201710_bdphaseII_sciencereport.pdf. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	and Appendix 2B, Additional Alternatives Screening and Evaluation, an extensive screening process was conducted through multiple water resource planning efforts and considered a wide variety of factors, including potentially significant environmental effects, to develop the alternatives evaluated in the RDEIR/SDEIS. Please refer to Master Response 9, Alternatives Development, regarding the reasonable range of feasible alternatives and consideration of bypass flows. Please also refer to Master Response 5, Aquatic Biological Resources, for a discussion of the use of best available science and data to evaluate bypass flows. Master Response 5 also identifies and describes the benefits to aquatic biological resources, including the benefits to the cold-water pool. Chapter 31, Cumulative Impacts, qualitatively describes the potential amendments to the Bay-Delta Plan (State Water Resources Control Board 2006, 2018). Please also see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the interaction between the EIR/EIS and the decision making on the Project by the Authority and Reclamation, and the separate State Water Board water rights and water quality certification processes. Please also see Master Response 9 regarding the Bay-Delta Plan updates.
78-29	Page 1-7 - The environmental document should identify and evaluate alternative operational criteria for the project that avoid additional modification of baseline flows in most water years to protect the aquatic ecosystem and fish populations in the Bay-Delta Watershed and to demonstrate proposed project feasibility taking into consideration possible updates to flow-dependent water quality objectives in the Bay-Delta Plan. Water diversions through infrastructure such as dams, reservoirs, and distribution facilities (canals, pumps, pipelines) have substantially modified the volume, timing, frequency, rate, and duration of river flows and these modifications are primary contributors to the decline, persistent low	The Authority and Reclamation considered multiple operational scenarios over the course of the Project development that were designed to meet the Project objectives, purpose, and need; enhance Project benefits; and reduce or avoid impacts. The features of alternatives, including Sites Reservoir capacity, conveyance systems, and operational scenarios, were conceptually developed and refined over time to maximize the achievement of the objectives. Please see Master Response 9, Alternatives Development, regarding operational criteria development. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for

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	abundance, and high extinction risk for multiple native fish species and other aquatic organisms in the Bay-Delta watershed. A significant amount of scientific information indicates that existing river flows, Delta outflows, and interior Delta flows (baseline flows) are not sufficient for halting and reversing declines of multiple fish populations in the Bay-Delta watershed. Additional surface storage, conveyance, and operational flexibility in the Proposed Project allows for greater impairment of baseline flows (volume, timing, frequency, rate, and duration) in the Bay-Delta watershed and allows for increases in adverse impacts on depleted fish populations and other aquatic organisms. Modifications to the baseline hydrograph, volume, timing, frequency, rate, and duration) in the riverine and tidal portions of the Bay-Delta watershed and subsequent impacts to ecological resources including fish populations should be estimated and disclosed in the context of changes from baseline and unimpaired flow conditions. Given the potential for additional degradation of baseline flows associated with the Proposed Project, and the relationship between flows and fish population viability, operational alternatives that avoid loss of baseline flows in most water years are needed to assess the feasibility of mitigating ecological and fishery impacts in the context of anticipated updates to the Bay-Delta Plan and to produce a record in support of multiple Board decisions. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	information regarding the Bay-Delta Plan (State Water Resources Control Board 2006, 2018), and Master Response 2, Alternatives Description and Baseline, regarding what is included in the baseline. The environmental baseline includes the operations of the existing reservoir and the existing flows in the existing rivers and compares these conditions to conditions expected under Project operations. For example, in Chapter 11, Aquatic Biological Resources, Impacts FISH-2 through FISH-11 describe the relative changes between the environmental baseline and Alternatives 1 through 3. Please also refer to Master Response 5, Aquatic Biological Resources, regarding the environmental baseline and special-status species.
78-30	Chapter 2 indicates that a benefit of the Sites Project is exchanges in releases from Shasta and Folsom for cold water pool maintenance and other environmental needs. However, the CalSim and HEC5Q modeling does not show noticeable benefits of such exchanges. Any assertions of cold water pool benefits should be supported with quantitative results that demonstrate such benefits.	Please refer to Master Response 5, Aquatic Biological Resources, for additional discussion of benefits to aquatic biological resources, including the benefits to the cold-water pool. As discussed in Master Response 5, improved cold-water pool conditions under Alternatives 1, 2, and 3 allow for lower water temperatures relative to the No Project Alternative in drier years during summer months, which coincides with winter-run spawning, egg incubation, and alevin

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	[Commenting Water Board or Section within the State Water Board: Bay-Delta]	development. As a result, reduced temperature-dependent winter-run egg mortality under Alternatives 1, 2, and 3 was found in Martin and Anderson egg mortality models, SALMOD, and IOS winter-run life cycle model in drier years.
78-31	Page 2-29 - The Project proposes to divert water during times that Shasta Reservoir should be minimizing loss of storage or gaining storage for temperature management during the summer and fall. The environmental document should include proposed operating constraints specifically designed to avoid impacts to Shasta and Trinity River storage, temperature management, and impacts to salmonid redd dewatering and stranding associated with these operations. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	In coordination with Reclamation, the Authority would construct, operate, and maintain an offstream reservoir to capture excess water from major storms and store the water until it is most needed during dry periods. Please see Master Response 3, Hydrology and Hydrologic Modeling, which describes the modifications to modeling in the Final EIR/EIS for Shasta Lake operations and the resulting benefits to cold-water pool management, fall flow stability, and spring pulse flow actions that would occur under the Authority's and Reclamation's preferred alternative. Also, please see Master Response 2, Alternatives Description and Baseline, regarding diversions and operational criteria that have been refined in response to comments and agency coordination. Please see Master Response 8, Trinity River, regarding the scope of analysis related to the Trinity River system and how effects would not occur on the Trinity River. The Project is not proposing to modify, change, remove, or add to any of these factors. Regardless of the Project, Reclamation would continue to operate the CVP Trinity River Division facilities consistent with all applicable statutory, legal, and contractual obligations.
78-32	Page 2-29 - More details should be provided about the timing and magnitude of releases for specific Storage Partners and the route that water would be conveyed to ensure that possible impacts associated with these issues can be fully evaluated and disclosed. In addition, the total quantity of diversions, including losses, should be identified and evaluated.	Storage Partner deliveries are described in the EIR/EIS by subgroups, such as north-of-Delta and south-of-Delta deliveries. Each subgroup has similar hydrologic and environmental effects. Chapter 5, Surface Water Resources, contains a summary of water supply deliveries in Section 5.4.1.2, Summary of Water Supply Delivery

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	[Commenting Water Board or Section within the State Water Board: Bay-Delta]	Results. This section includes deliveries to storage partners north and south of the Delta and to refuges. Storage Partner deliveries are also presented in Chapter 32, Other Required Analyses. Tables 32-1 and 32-2 break down Sites Reservoir deliveries for agriculture by Sacramento, San Joaquin/Tulare Lake, and San Francisco Bay hydrologic regions. Tables 32-3 and 32-4 break down Sites Reservoir deliveries for municipal and industrial purposes by San Francisco Bay, South Lahontan, and South Coast hydrologic regions. Additional information about deliveries is provided in Appendix 5B5, Water Supply. Chapter 5 provides a summary of the hydrologic modeling results, including diversions at Red Bluff (Table 5-13), diversions at Hamilton City (Table 5-15), and releases at Sites Reservoir (Table 5-18). The Sites Reservoir releases are broken down into releases to the Sacramento River (Table 5-19) and Yolo Bypass (Table 5-20). Appendix 5B1, Project Operations, includes extensive CALSIM results for Sites Reservoir operations, including total Sites Reservoir diversions. Please refer to Master Response 3, Hydrology and Hydrologic Modeling, for a discussion of losses. Effects associated with these changes in hydrology and water supply are evaluated throughout the document.
78-33	Page 2-29 - The environmental document states that the Authority intends to apply for and obtain a water right permit from the State Water Board for operations of the Project and that actual operations will depend upon the terms and conditions of the water right permit. As discussed above, in order to inform the State Water Board's decision making on appropriate operational constraints for the project, a reasonable range of operational	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding water rights. The Authority is seeking a water right from the State Water Board. The analysis in the EIR/EIS is comprehensive and descriptive of the effects of the Project. Modifications to the Project during the permitting process, including the water rights process, could result in stricter diversion criteria and thus a lower level of effects than analyzed in the

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	constraints should be evaluated in the environmental document and the public should be given the opportunity to review and comment on those analyses before the environmental document is finalized. Specifically, a range of operations that include criteria that provide additional protection for fish and wildlife should be evaluated, including Sacramento River and Delta outflow bypass flows. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	EIR/EIS. Please see Master Response 9, Alternatives Development, regarding the reasonable range of feasible alternatives.
78-34	Page 2-30 - The proposed Project states that "Sites Reservoir would be filled through the diversion of Sacramento River water that generally originates from unregulated tributaries to the Sacramento River downstream from Keswick Dam. A limited volume of the diversions to Sites Reservoir would come from flood releases from Shasta Lake." The draft REIR/SEIS should be revised to include discussion as to how water targeted for diversion by the Project will generally be limited to water generated in the watershed below Keswick Dam. In the limited circumstances where flood releases from Shasta Lake of water originating above Keswick Dam will be relied upon, the draft REIR/SEIS should be revised to clearly define what constitutes "flood releases" and should explain how flood releases will be tracked to ensure the Project is diverting only "flood releases" to the extent it diverts water that originates above Keswick Dam. Additionally, even if a limited volume of water comes from flood releases, please note that the entire watershed from the lowest proposed point of diversion (Hamilton City) upstream should be considered when evaluating water availability, as well as downstream instream flow needs. [Commenting Water Board or Section within the State Water Board: PERMITTING AND SECTION]	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding water rights and water availability and Master Response 3, Hydrology and Hydrologic Modeling, regarding the modeled representation of diversions. Diversions would take place when there is more water in the system than needed to meet all instream flow requirements, Delta objectives, and existing water right obligations. The water diverted may come from either local runoff downstream of Shasta Lake or from Shasta Lake flood control releases. Flood control releases are part of Reclamation's flood operations for Shasta Lake. Other releases from Shasta Lake are made for specific purposes. The determination of when there is water available for diversion to Sites Reservoir storage is made within the CALSIM modeling. During real-time operations, Reclamation tracks whether releases from Shasta Lake are made for downstream purposes or for flood control purposes. Water released for downstream purposes would not be available for diversion to Sites Reservoir storage and is represented as such in the modeling.

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78-35	Pages 2-31, 32 - The Bend Bridge Pulse Protection specifies criteria for qualified pulse flow events that would occur during October through May for the protection of migrating juvenile salmonids. For these criteria, the fish pulse protection is flow-based to simulate the effect of pulse flows on fish migration. The draft REIR/SEIS should identify fish pulse protection criteria and associated modeling rules to simulate implementation. If fish pulse protection criteria are based solely on real-time fish monitoring, flow-based modeling may overestimate actual river flows, which may be lower due to real-time decision making by water resource managers and advice from technical working groups. Pulse protection criteria should incorporate options for flow-based pulses to trigger migration and pulse flows in response to real-time fish monitoring information. Identifying these criteria will allow modeling to more accurately reflect flow conditions resulting from pulse protection. The pulse flow event is defined as 3-day trailing averages at the Sacramento River at Bend Bridge and tributary flows. A 3-day "trailing" average has the potential to miss the initial "pulse", i.e., within the first three days of a precipitation event, of flow and fish migration. Alternative methods should be considered to protect the initial pulses of flow and migrating fish, such as using the California Nevada River Forecasting Center daily river forecast and/or fish monitoring data. The second bullet item describes a qualified pulse event as the 3-day trailing average flows at Bend Bridge (Sacramento River) flow greater than 8,000 cfs "and" tributary flow upstream exceeding 2,500 cfs. The inclusion of the conjunction "and" indicates that the pulse flow criteria for both the Sacramento River and tributaries must be met for a pulse protection to be initiated. In order to protect migrating fish from both the mainstem Sacramento River and the tributaries, however, pulse flow criteria should be established separately for the mainstem Sacramento River and the tributaries. In addition, the draft REIR/SEIS should explicitly state whether the tributary flow of 2,500 cfs criteria represents the combined flows for the	The pulse flow protection measure is not a simulation and is a measure to ensure pulses are protected so that fish may respond to the migration signals they provide. The pulse flow protection measure is also to minimize exposure of fish moving to diversions in response to these pulses. As described in Chapter 2, Project Description and Alternatives, of the Final EIR/EIS, the pulse protection criteria have been modified to address the potential for missing the initial pulse and are no longer based solely on fish monitoring. The criteria will consider predictions of storm-generated pulse events from the California Nevada River Forecasting Center. To address uncertainties in the forecasts, the criteria include monitoring of fish movement and real-time monitoring of flow at Bend Bridge. If a pulse is predicted, operators will be prepared to cease diversions if and when a signal is observed in real-time monitoring of gage data at Bend Bridge that verifies the prediction. Fish movement will also be monitored for a signal that the fish are moving and protections should be implemented. While the importance to the first storm event of the season for stimulating fish movement is generally accepted (e.g., Poytress et al. 2014), the causal mechanisms are not fully documented and the modeling suggested in the comment is not likely to be informative. The utility of fish movement as a trigger will be evaluated through the implementation of the adaptive management program and subject to modification to ensure the pulse protection criteria achieve the intended purpose.

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	three tributaries (Cow, Cottonwood, and Battle creeks) or for an individual tributary. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	
78-36	Page 2-33 - The minimum bypass flow in the Sacramento River at RBPP is proposed to be 3,250 cfs. The draft REIR/SEIS states that when the Sacramento River flows exceed 3,250 cfs at RBPP that diversions would occur "until the full 2,100 cfs diversion could be achieved at flows of approximately 7,860 cfs." Diversion at this rate represents about 27% of Sacramento River flows. Further, Figure 2-26 shows that any, and all, flows above the minimum bypass flows (3,250 cfs) will be diverted until the diversion rate reaches 1,801 cfs at the Sacramento River flow of 5,050 cfs, which represents a diversion of approximately 36%. A full analysis should be provided of the potential impacts of diverting over a third of the flow of the Sacramento River, including an analysis for all months and water year types, as well as possible shorter term impacts on rearing and migration of salmon and other native fishes. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Figure 2-36 is an engineering representation of available diversion capacity and not a reflection of the amount of flow that may or will be diverted. In addition to the capacity of the pumping plant, rates of diversion are subject to regulatory restrictions, operations criteria, and irrigation demands. While Water Right Order 90-5 established a minimum bypass flow requirement of 3,250 cubic feet per second (cfs) at RBDD, there are many reasons higher flows may be protected from diversions to Sites Reservoir storage. As described in Chapter 2, Project Description and Alternatives, flows past Red Bluff may need to be higher than 3,250 cfs for pulse flow protection, flow requirements at Hamilton City and Wilkins Slough, operations of CVP pursuant to revised biological opinions on long-term operations, and Delta requirements. The Project, which will be a junior water-right holder, would operate in a manner that would not adversely affect the ability of others to meet applicable laws, regulations, biological opinions and incidental take permits, and court orders in place at the time that diversion occurs. Tables 11-6 and 11-7 in Chapter 11, Aquatic Biological Resources, show the modeled percent of Sacramento River flow diverted at the Red Bluff Pumping Plant (RBPP) and Hamilton City Pumping Plant (respectively) for all month-year type combinations. The largest increase in percent diversion compared to the NAA is 8% in January and February of Above Normal Water Years. The percent diversion at the RBPP is expected to be 7% in Dry Water Years and 4% in Wet Water Years. While larger percentages of flow diverted are shown for the Hamilton City Pumping Plant (e.g., >20%)

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		in May, June, and July of most water-year types, these diversions are associated with GCID's existing diversions and not diversions to Sites Reservoir. Please see Chapter 5, Surface Water Resources, Section 5.4.1.1, Summary of General Changes in Hydrology, for discussion of simulated flows and diversions from the Sacramento River by month. The effects of these diversions to Sites Reservoir storage are evaluated throughout the RDEIR/SDEIS. Effects on aquatic biological resources are evaluated in Chapter 11. Evaluations related to rearing and migration of salmon and other native species are provided throughout Chapter 11 and its appendices. Please see Chapter 11, Section 11.4, Impact Analysis and Mitigation Measures, for evaluations related to rearing and migration of salmon and other native species. The most pertinent sections in Chapter 11 are the following subsections under the section Far-Field Effects: Flow-Related Physical Habitat Conditions, Floodplain Inundation and Access, and Migration Flow Survival. The evaluations in these sections encompass all months and locations for which a species and life stage may be present. Also, potential effects under all water year types are considered. Changes that occur over time-steps shorter than monthly intervals were generally not evaluated because, in most cases, effects of such short-term effects were expected to be adequately captured in the monthly time-step results. The models for most evaluations are based on CALSIM II outputs, which have a monthly time-step. For evaluations in which shorter-term impacts were considered potentially important, including redd dewatering, juvenile stranding, and water temperature, daily time-step modeling was used.
78-37	Page 2-33 - The proposed minimum bypass flow in the Sacramento River at Hamilton City Pumping Station is 4,000 cfs. The draft REIR/SEIS states that	Figure 2-37 is an engineering representation of available diversion capacity and not a reflection of the amount of flow that may or will be

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	when the Sacramento River flows exceed 4,000 cfs at Hamilton City Pumping Station that diversions would occur "until the full 1,800 cfs diversion could be achieved at flows of about 5,800 cfs." The diversion at this rate represents about 31% of Sacramento River flows. Further, Figure 2-27 shows that any, and all, flows higher than the minimum bypass flows (4,000 cfs) will be diverted until the diversion rate reaches 1,800 cfs. An analysis of the impact of these high rates of diversion compared to the Sacramento River flow at Hamilton City Pumping Station has not been provided in the draft REIR/SEIS. Table 11-7 only provides the percentages of diversion at Hamilton City Pumping Station up to 24% or 25%. (June of Wet years, May and June of Below Normal, Dry, and Critical years). This issue needs further clarification. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	diverted. In addition to the capacity of the pumping plant, rates of diversion are subject to regulatory restrictions, operations criteria, and irrigation demands. While a flow requirement of 4,000 cfs at Hamilton City Pumping Plant is associated with the proper function of GCID's gradient restoration facility, there are many reasons higher flows may be protected from diversions to Sites Reservoir storage. As described in Chapter 2, Project Description and Alternatives, flows past the Hamilton City Pumping Plant may need to be higher than 4,000 cfs for pulse flow protection, flow requirements at Hamilton City and Wilkins Slough, operations of CVP pursuant to revised biological opinions on long-term operations, and Delta requirements. The Project, which will be a junior water-right holder, would operate in a manner that would not adversely affect the ability of others to meet applicable laws, regulations, biological opinions and incidental take permits, and court orders in place at the time that diversion occurs. Tables 11-6 and 11-7 in Chapter 11, Aquatic Biological Resources, show the modeled percent of Sacramento River flow diverted at the RBPP and Hamilton City Pumping Plant (respectively) for all month-year type combinations. The largest increase in percent diversion compared to the NAA is 3% in January and February of most water years. While larger percentages of flow diverted are shown for the Hamilton City Pumping Plant (e.g., >20%) in May, June, and July of most water-year types, these diversions are associated with GCID's existing diversions and not diversions to Sites Reservoir. Please see Chapter 5, Surface Water Resources, Section 5.4.1.1, Summary of General Changes in Hydrology, for discussion of simulated flows and diversions from the Sacramento River by month. The effects of these diversions to Sites Reservoir storage are evaluated throughout the RDEIR/SDEIS. Effects on aquatic biological

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		resources are evaluated in Chapter 11, Aquatic Biological Resources. Evaluations related to rearing and migration of salmon and other native species are provided throughout Chapter 11 and its appendices. Please see Chapter 11, Section 11.4, Impact Analysis and Mitigation Measures, for evaluations related to rearing and migration of salmon and other native species. The most pertinent sections in Chapter 11 are the following subsections under the section Far-Field Effects: Flow-Related Physical Habitat Conditions, Floodplain Inundation and Access, and Migration Flow Survival. The evaluations in these sections encompass all months and locations for which a species and life stage may be present. Also, potential effects under all water year types are considered. Changes that occur over time-steps shorter than monthly intervals were generally not evaluated because, in most cases, effects of such short-term effects were expected to be adequately captured in the monthly time-step results. The models for most evaluations are based on CALSIM II outputs, which have a monthly time-step. For evaluations in which shorter-term impacts were considered potentially important, including redd dewatering, juvenile stranding, and water temperature, daily time-step modeling was used.
78-38	Page 2-33 - The Hamilton City Pump Station is located at an oxbow channel away from the mainstem Sacramento River, thus experiences different hydraulic conditions. Diversion criteria at Bay-Delta the Hamilton City Pump Station should take into account additional bypass flow needs for an oxbow channel needed to protect fish species. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	The impact analysis in Chapter 11, Aquatic Biological Resources, describes the physical conditions (i.e., the oxbow channel) with respect to the potential effects on entrainment or impingement. The diversion criteria take into account the physical conditions of the river and the operation of the diversion. As described in Chapter 2, Project Description and Alternatives, Section 2.5.1.1, Sacramento River Diversion and Conveyance to Regulating Reservoirs, the fish screens at both facilities meet National Marine Fisheries Service and California Department of Fish and Wildlife criteria. These criteria include sweeping velocity, among other criteria. The Hamilton City intake was

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		subject to study and redesign as part of an earlier Fish Screen Improvement Project, part of which was construction of a rock training wall to enhance sweeping velocity past the screen (Vogel 2008:1). Chapter 11, Impact Fish-2 contains detailed discussions related to the oxbow in question. Subsequent fish impact discussions reference this discussion as part of the analyses and conclusions.
78-39	Page 2-33 - The operational criteria should identify ramping rates for diversions appropriate to protect native fish species that may be residing near or migrating past diversion facilities. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	The Authority will develop a ramping schedule in consultation with agencies during the Endangered Species Act process.
78-40	Page 2-36 - The environmental document states that the critical months for cold water pool management are August through September. Cold water pool protection is important year-round and most important from April through November to protect winter-run, springrun, and fall-run Chinook salmon. High releases throughout this period reduce cold water supplies available later in the year. Cold water is needed throughout this period until ambient temperatures cool in the fall. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	The text in Chapter 2, Project Description and Alternatives, identifies this time (August and September) as "critical." Chapter 2 also describes the importance of the late summer and fall (i.e., August through November). The impact analysis in Chapter 11, Aquatic Biological Resources, covers the entire year and evaluates temperature over all months of presence of each life stage of each fish species, including those required for cold-water pool management. More specifically, Impact FISH-2 includes a discussion on cold-water pool management.
78-41	Page 2-36 - The Project is proposing the use of “exchanges” of Sites water in-lieu of releases from Central Valley Project (CVP) and State Water Project (SWP) reservoirs. The draft REIR/SEIS is unclear as to how these “exchanges” are coordinated between the proposed project and the CVP and SWP operators, and it does not specify how water being “exchanged” will be adequately tracked to ensure that these “exchanges” are reported adequately under a valid basis of right. Additional information should be added to better describe the “exchanges” that would occur with entities	Please see Master Response 2, Alternatives Description and Baseline, regarding coordination with CVP and SWP, exchanges, and tracking water. As noted in Master Response 2, exchanges of water may occur with the Central Valley Project (CVP) and SWP reservoirs, including Shasta Lake and Lake Oroville. Exchanges would only be conducted when they would be neutral or net beneficial to CVP and SWP operations and not affect the ability of the CVP or SWP to meet

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	downstream from Sites Reservoir. Specifically, coordinated operations between the Proposed Project, CVP, and SWP should be identified in order to accurately simulate changes to river flows and water supplies throughout the watershed. [Commenting Water Board or Section within the State Water Board: Permitting and Section]	applicable laws, regulations, BiOps and ITPs, contracts, and court orders in place at the time.
78-42	Page 2-38 - The Authority has yet to complete the field studies to determine baseline conditions and other environmental parameters for Funks Creek and Stone Corral Creek. The Authority states that the field studies cannot be completed until land access is obtained. The information and analysis that would be collected as part of the field studies may be needed for analysis as part of the water right application process and may need to be completed prior to any final action of any water right application filed for the Project. [Commenting Water Board or Section within the State Water Board: Permitting and Section]	The State Water Board's comment with respect to analysis in support of an eventual water right application is noted.
78-43	Page 2-60 - Section 2.6.4.1 Water Operations: Although the draft REIR/SEIS states that Alternative 1 is the preferred alternative (page 2-5), the impact analysis in Chapter 11 Aquatic Resources presents two alternatives under Alternative 1 (1A and 1B). Alternative 1A includes no Reclamation investment and Alternative 1B includes up to 7% Reclamation investment, which equates to about 91,000 AF of storage dedicated to Reclamation in Sites Reservoir. The DEIR/DEIS should clarify which alternative is the "preferred alternative" as the modeled impacts under Alternatives 1A and 1B were different. Specifically, conditions for salmonid juvenile rearing and migration would increasingly worsen under alternatives with higher Reclamation participation, i.e., 0% (Alternative 1A), 7% (Alternative 1B), and 25% (Alternative 3).	Please see Master Response 2, Alternatives Description and Baseline, regarding the range of alternatives and the change in the preferred Project from Alternative 1 to Alternative 3. Please see Master Response 5, Aquatic Biological Resources, and Chapter 11, Aquatic Biological Resources, regarding modeling results with respect to the preferred alternative and Alternatives 1A and 1B. Also see Master Response 3, Hydrology and Hydrologic Modeling, which describes the modifications to modeling for Shasta Lake operations and resulting benefits to cold-water pool management, fall flow stability, and spring pulse flow actions that would occur under the Authority's and Reclamation's preferred alternative.

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	[Commenting Water Board or Section within the State Water Board: Bay-Delta]	
78-44	Page 4A-16 - The draft REIR/SEIS states, "The following three basin plans." Please correct three to two. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	The word three has been deleted in the text indicated.
78-45	Chapter 5: Surface Water Resources, Page 5-30 - Average estimated decreases to Sacramento River flows (11%, Table 5-16) in May of critically dry years and associated adverse impacts to fish survival and fish populations may not be sufficiently mitigated or offset by the minimal average estimated increases to Shasta Lake storage in May of critically dry years (2-4%, Table 5-11). Minimal storage increases in the month of May are not necessarily likely to provide temperature benefits in later, warmer, summer and fall months when temperature benefits are most needed, especially in critically dry conditions. The net effect of these changes may be a significant adverse effect to fish species present in the Sacramento River in spring of critically dry years. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Water temperature modeling for the Final EIR/EIS indicates that differences in mean water temperature between each alternative and the No Project Alternative during spring months (March through May) of Critically Dry Water Years would be no more than ±0.2°F at all locations in the Sacramento River between Keswick and Butte City. Please see Appendix 6C, River Temperature Modeling (HEC5Q and Reclamation Temperature Model), for revised model output tables for the Final EIR/EIS. Because the modeling has been refined for the Final EIR/EIS, the number provided in this response (no more than ±0.2°F) may be different from those in the RDEIR/SDEIS and in the comment, although they are consistent with the Final EIR/EIS. The conclusions did not change as a result of the new modeling.
78-46	Chapter 5: Surface Water Resources, Page 5-33 - Reductions in flow due to Proposed Project operations and diversions on the Sacramento River during the October – June period in critically dry years for Alternatives 1 – 3, result in potentially significant adverse impacts to aquatic biological resources. Increased bypass flow requirements should be evaluated that would avoid reducing baseline flows and reduce potentially adverse impacts to fish species to less than significant.	Please see Master Response 5, Aquatic Biological Resources, for a discussion of flow-related impacts on juvenile migrating salmonids and associated mitigation measures. Please see Master Response 2, Alternatives Description and Baseline, which addresses the refinements made to Project operations, including changes to the Wilkins Slough criteria in the Final EIR/EIS that further restrict diversions.

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78-47	Chapter 5: Surface Water Resources, Pages 5-36 and 37 - The draft REIR/SEIS shows that changes to baseline flows as a result of water exchanges made possible by the Proposed Project may result in adverse impacts to fish species. For example, flow increases of 5 – 25 percent in fall months may dewater fallrun Chinook and steelhead redds when flows recede. Flow reductions in June and July of critically dry years (3 – 14 percent, Table 5-23) on the Feather River may adversely impact migrating spring-run Chinook salmon and green sturgeon. Similar flow changes on the American River due to Folsom Lake exchanges are estimated to occur with the same concerns for adverse impacts to salmon and steelhead. Operational criteria should be developed to avoid changes to baseline flows that may cause adverse impacts to fish species on the Feather and American Rivers. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Effects of flow changes on life history stages and habitats of fish are analyzed in Chapter 11, Aquatic Biological Resources, of the RDEIR/SDEIS, regardless of the source of the changes. This includes effects of flow increases and subsequent recessions on fall-run redds and the other cases cited. Effects of any changes in operations are presented in the Final EIR/EIS. For example, the results of analyses on redd dewatering, provided in Appendix 11N, Other Flow-Related Upstream Analyses, and Chapter 11 of the Final EIR/EIS, show no effect of the Project on redd dewatering in the Feather and American Rivers, except for occasional increases for spring-run in the Feather River and fall-run in the American River. Other effects are fully discussed in the cited documents. Note that Folsom Lake exchanges are no longer part of the Sites Project.
78-48	Chapter 5: Surface Water Resources, Page 5-49 - Hydrologic modeling results in the main body chapters and appendices should be presented using methods that demonstrate the full range of outcomes in modeling results. Hydrologic modeling results are currently summarized as averages by water year type and results are presented for wet years and critically dry years only. To capture the full range of potential impacts, modeling results should include the full range of outcomes and be presented without averaging and without the filter of water year type (which is a proportional sum of monthly unimpaired flow plus a proportion of last year's water year index volume). Narrative descriptions of outcomes should present median, maximum, minimum, 90th and 10th percent quartile outcomes. Presenting	The presentation of model results in Chapter 5, Surface Water Resources, Section 5.4, Hydrologic Modeling Results, is provided for the reader to understand basic hydrologic effects that may occur because of the Project. It is not meant to be a detailed evaluation of all changes, nor is it an impact assessment. Other more specific and detailed metrics are used in other resource chapters for impact assessment, and more detailed model results are presented in the model results appendices (e.g., Appendix 5B, Water Resources Modeling System). Exceedance plots are provided for each model output parameter. Additionally, in Appendix 5B5, Water Supply, model results are tabulated at 10% exceedance increments. Please refer to Master Response 3, Hydrology and Hydrologic Modeling,

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	results as averages by water year type narrows the range of results presented and can mask potential adverse effects of the proposed project. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	regarding more information on the use of CALSIM II results. Results are used and presented depending on the impact mechanism evaluated; therefore, masking potential adverse effects, as suggested by the commenter, would not occur.
78-49	Chapter 5: Surface Water Resources, Page 5-49 - Modeling data should be displayed with exceedance tables, exceedance charts, and box and whisker plots to show the full continuum of modeling results in an efficient format. Displaying modeling data using these methods efficiently discloses project impacts for all water years and does not obscure or skew potential impacts. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Regarding display of modeling data, please see response to comment 78-48. As noted in Master Response 3, Hydrology and Hydrologic Modeling, CALSIM II modeling results are presented in Appendix 5B1, Project Operations; Appendix 5B2, River Operations; Appendix 5B3, Delta Operations; Appendix 5B4, Regional Deliveries; and Appendix 5B5, Water Supply. Modeled results are presented with monthly tables, monthly pattern charts, and monthly exceedance charts. Monthly tables compare an alternative against the [No Project Alternative] (exceedance values, long-term average, and average by water year type). Monthly pattern charts (long-term average and average by water year type) present all alternatives. Monthly exceedance charts (all months) present all alternatives.
78-50	Chapter 5: Surface Water Resources, Page 5-49 - Chapter 5 should include an analysis of the impact of Proposed Project alternatives (including an alternative that sufficiently anticipates updates to flow-dependent water quality objectives in the Bay-Delta watershed) on the Sacramento River and Delta hydrograph. This analysis should include an evaluation of monthly changes in the volume of river flows for all project alternatives. Results should be compared to the no action alternative and to unimpaired flows to estimate the contribution of Proposed Project operations to changes in the hydrograph. Results should be presented to show the full range of simulated changes to monthly river flows with in the CalSim II spatial domain and for the 82-year simulation period. This hydrologic analysis should then be used to support the aquatic biology analyses in Chapter 11. Substantial modification to the unimpaired hydrograph is a primary driver	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding Water Quality Control Plan updates as they relate to the Project. Please also see Master Response 1 regarding information about the water rights application and water rights process. The water availability analysis included in the Authority's water rights application to the State Water Board includes a comparison of unimpaired flow at three points of interest and the aggregated face value of water rights in the Sacramento River watershed (Sites Project Authority 2022). Please also see response to comment 78-51 regarding content contained in Chapter 5, Surface Water Resources, including changes in hydrology.

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	of reductions of native fish populations that should be evaluated in the environmental document from a project specific and cumulative perspective. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	The unimpaired hydrograph is not the current existing conditions and does represent future reasonably foreseeable conditions under the No Project Alternative. The hydrograph as it exists today (baseline conditions) and over the 82-year CALSIM II simulation period includes existing water rights and contracts. Potential Project impacts are measured against the conditions present in the No Project Alternative to analyze the impacts of the Project. Chapter 11, Aquatic Biological Resources, and particularly Appendix 11A, Aquatic Species Life Histories, identifies a number of stressors that have contributed to the reductions in native fish populations, including habitat modification and streamflow modification. This information is used to describe the context of the No Project Alternative. Please see Master Response 9, Alternatives Development, regarding the Bay-Delta Plan (State Water Resources Control Board 2006, 2018), updates, and Master Response 2, Alternatives Description and Baseline, regarding baseline conditions and the hydrologic modeling assumptions. Please also see Chapter 31, Cumulative Impacts, regarding requirements and methods.
78-51	Chapter 5: Surface Water Resources, Page 5-49 - Chapter 5 should include impact categories for changes to monthly reservoir storage for Sites and non-Sites storage partners, changes to Delta exports, and changes to interior flows (Old and Middle River reverse flow patterns) associated with Proposed Project alternatives. The additional storage and water exchange flexibility provided by Proposed Project alternatives may have impacts on storage volumes in storage partner and non-storage partner reservoirs that subsequently affect availability and quality of water releases and river flows for fish and wildlife management. Similarly, Delta export patterns and the duration, frequency, and magnitude of reverse interior Delta flows may change in response to increased storage and water exchange potential provided by the Proposed Project. Modifications to Delta exports and interior river flow patterns are surface water modifications important for	A change in hydrology is not by itself an impact but can affect the impact categories mentioned by the commentor (e.g., water supply, water quality, and fish). The effect of changes in hydrology on most of these impact categories is discussed in other chapters. Chapter 5, Surface Water Resources, summarizes changes in hydrology for use in other chapters and also evaluates potential water supply impacts on other (non-Sites) water users under Impact HYDRO-1. Other potential impacts associated with changes in storage, stream flow, and Delta flows are evaluated in other chapters. These include:

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	estimating impacts associated with Proposed Project alternatives on fish and wildlife resources and on water quality for Delta water rights holders. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Effect of changes in reservoir storage, stream flow, and Delta flows on water quality described in Chapter 6, Surface Water Quality (Impacts WQ-1 [including initial filling] and WQ-2). Effect of changes in reservoir storage, stream flow, and Delta flows on wildlife in Chapter 10, Wildlife Resources (Impacts WILD-1, WILD-3, and WILD-4). Effect of changes in reservoir storage, stream flow, and Delta flows on aquatic resources described in Chapter 11, Aquatic Biological Resources (Impacts FISH-2 through FISH-19: Operations effects on winter-run Chinook salmon, spring-run Chinook salmon, fall-run/late fall-run Chinook salmon, Central Valley steelhead, green sturgeon, white sturgeon, delta smelt, longfin smelt, lampreys, native minnows, starry flounder and northern anchovy, striped bass, American shad, threadfin shad, black bass, California bay shrimp, reservoir fish species, and southern resident killer whale).
78-52	The environmental document should evaluate the potential hydrologic effects of the project that are not captured by monthly modeling evaluations, including sub-monthly effects and effects of real time operations that could occur under the proposed operating rules for the project. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Please see Master Response 3, Hydrology and Hydrologic Modeling, and response to comment 78-58 regarding use of monthly and sub-monthly modeling results. CALSIM modeling uses a monthly time step and provides comparative results among different hydrological scenarios. Other models are used to evaluate conditions on a sub-monthly time step. These include the water temperature models for the Sacramento River, American River, and Sites Reservoir; DSM2 simulations of Delta water quality; and USRDOM simulations of daily upper Sacramento River flows. While the modeling may not capture all real-time operational decisions (e.g., decisions to relax flow requirements during drought emergencies), it captures the major operational procedures and adherence to regulations, which allows a

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		comparative analysis of Project affects relative to the No Project Alternative for planning purposes.
78-53	The draft REIR/SEIS indicates that Funks Creek and Stone Corral Creek will be managed for flood purposes only and no water from any local drainages that will be inundated by Sites Reservoir will be collected in Sites Reservoir for diversion and use. The draft REIR/SEIS should include discussion as to how water entering Sites Reservoir from the local drainages will be monitored, recorded, and timely released through Sites Reservoir. [Commenting Water Board or Section within the State Water Board: Permitting and Section]	Gauging stream inputs would be potentially inaccurate as the watershed surrounding the reservoir is large, and there are many pathways where water flows into it that would not be gaugeable (e.g., seeps, overland flow, small seasonal washes). As described in Chapter 2, Project Description and Alternatives, flow would be timed and released into Stone Corral and Funks Creeks in coordination with field studies and the resource agencies.
78-54	Chapter 5, Page 5-27 - Additional hydrologic analyses may be required during the water right permitting process to inform and support the State Water Board's water availability findings. These additional analyses may ultimately lead to water availability findings and associated restrictions on the proposed diversions that differ from those presented in the draft REIR/SEIS. As such, staff recommends that the Authority consider including additional project alternatives and/or hydrologic analyses that contemplate greater restrictions on diversions to support fish and maintain water quality. [Commenting Water Board or Section within the State Water Board: Permitting and Section]	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding permitting timelines and processes related to water rights, including water availability analysis. Please also see the discussion of multiple operational scenarios or modifications to operational scenarios in Master Response 9, Alternatives Development, regarding inclusion of additional Project alternatives and/or hydrologic analyses that contemplate greater restrictions on diversions. As described in Chapter 2, Project Description and Alternatives; Appendix 2A, Alternatives Screening and Evaluation; and Appendix 2B, Additional Alternatives Screening and Evaluation, an extensive screening process conducted through multiple water resource planning efforts considered a wide variety of factors, including potentially significant environmental effects, to develop the alternatives evaluated in the RDEIR/SDEIS. The Authority and Reclamation evaluated Alternatives 1, 2, and 3 in the RDEIR/SDEIS because they were determined to be feasible, be reasonable, achieve the Project goals and objectives, and meet the purpose and need of the Project.

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78-55	Chapter 5, Page 5-49 - The table lists expected water use and water sources for construction activities. Surface water is listed as a source water for all three project components. However, the immediate section after the table states that "As identified in Chapter 8, there is sufficient groundwater supply to provide this water during the construction period without affected yield from other wells." The draft REIR/SEIS should be revised to clarify whether surface water will be used for construction purposes. If surface water will be used during construction activities, the draft REIR/SEIS should indicate under what valid basis of right the surface water will be used. Please note that any existing water right that may be selected to use for construction activities must be used in a manner that does not violate the terms and conditions of that basis of right. A water right permit, temporary permit, petition for change, or other applicable water right might need to be obtained if surface water needed for construction cannot be used under an existing valid basis of right. [Commenting Water Board or Section within the State Water Board: Permitting and Section]	In Chapter 5, Surface Water Resources, Table 5-33 summarizes the expected construction water use, which would be from both groundwater and surface water, and explains the sources of surface water and groundwater. The sentence quoted in the comment is intended to explain that there is sufficient groundwater supply to provide the groundwater portion of the construction water needs for the Project without affecting yield from other wells; this quoted text does not mean that all of the Project's construction water needs will be served by groundwater. Section 2.5.3.8, Construction Utilities, describes the use of water during construction, as does Appendix 2C, Construction Means, Methods, and Assumptions. As described in Chapter 2, Project Description and Alternatives, "This water would be obtained from three potential sources: existing surface water from the Storage Partners pursuant to existing water rights agreements and permitted uses; existing groundwater wells in the Sites Reservoir inundation area; and new groundwater wells in the Sites Reservoir inundation area."
78-56	Chapter 5 - A more detailed description of the proposed bypass flows is needed, including how these bypass flows affect diversions, which is not clear in the modeling. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	A detailed description of the proposed bypass flows and diversion criteria is provided in Chapter 2, Project Description and Alternatives, and Master Response 2, Alternatives Description and Baseline. Master Response 2 addresses refinements to Project operations, including diversion criteria for proposed bypass flows. These criteria and the modeled representation of them are further detailed in Appendix 5A1, Model Assumptions.
78-57	Ch 5 - A detailed discussion about the accounting of water diverted and released is needed. Ideally this accounting would be publicly available in real-time.	Diversions at Red Bluff and Hamilton City are already metered and reported. Metering of releases from Sites Reservoir is anticipated and would be reported.

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	[Commenting Water Board or Section within the State Water Board: Bay-Delta]	
78-58	Chapter 6 - The environmental document should include an analysis of potential sub-monthly water quality impacts, including temperature and other impacts that could have sub-monthly significant impacts. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	For some of the constituents evaluated (e.g., HABs, pesticides, and nutrients), the analysis is based on physical processes and measured concentrations. For these constituents, modeling is not necessary, nor would it be reliable or feasible, especially at a sub-monthly time step. For other constituents such as salinity and metals, CALSIM results are used as explained in Section 6.3, Methods of Analysis, of Chapter 6, Surface Water Quality. Two types of CALSIM results that inform the evaluation of impacts are evapoconcentration and dilution in the Sacramento River. The monthly CALSIM results are adequate for evaluating these phenomena because they are minimally affected by day-to-day fluctuations. Evapoconcentration occurs gradually over time, so a sub-monthly analysis is not warranted. Dilution in the Sacramento River, which is a function of Sites Reservoir release and Sacramento River flow, would also likely not vary much within a month. Sites Reservoir releases would not fluctuate greatly from day to day and, at the time when Sites Reservoir water would be discharged to the Sacramento River (generally May to November), flow in the river would no longer be influenced by storm events and would not be fluctuating greatly from day to day. The Chapter 6 temperature evaluation focuses on whether discharge from Sites Reservoir would cause an increase in receiving water temperature of more than 5°F. Fisheries resources are the primary designated beneficial use potentially affected by water temperature. As such, most of the potential effects associated with changes in water temperature are discussed in Chapter 11, Aquatic Biological Resources, which evaluates how changes in water temperature under each alternative could affect fish at a daily (Sacramento and American

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		Rivers) or monthly (Feather River) time step. Water temperature is also discussed in Chapter 15, Agriculture and Forestry Resources, as it relates to rice. The temperature blending tool (described in Chapter 6 and Appendix 6D, Sites Reservoir Discharge Temperature Modeling) was used to assess the effect of Sites Reservoir discharge on Sacramento River water temperature. This tool cannot simulate sub-monthly effects of Sites Reservoir discharge on receiving-water temperature. There would be limited day-to-day variation in the effect of the discharge on receiving-water temperature because reservoir release temperatures tend to be constant and because, as mentioned above, release flows and Sacramento River flows are not expected to vary greatly during the discharge period. Therefore, the temperature blending tool provides a reasonable representation of potential temperature effects associated with Sites Reservoir releases. Water temperature in the Sacramento and American Rivers was modeled on a sub-daily time step (see Appendix 6C, River Temperature Modeling Results). The fish assessment of water temperature effects presented in Chapter 11, Aquatic Biological Resources, utilized sub-monthly water temperature modeling results for special-status cold-water fish that use these rivers. In addition, the Chapter 11 fish assessment considers the difference between daily average and daily maximum temperatures. Methylmercury formation rates in reservoirs are uncertain due to the many factors that can affect the rate. For this reason, methylmercury in Sites Reservoir was not modeled and instead was estimated based on information from other reservoirs. Possible downstream effects of

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		these estimated concentrations were assessed qualitatively, with the exception of potential changes in concentrations of aqueous methylmercury that could contribute to fish tissue concentrations. As described in Chapter 6 and in Appendix 6F, Mercury and Methylmercury, the Central Valley Regional Water Quality Control Board Total Maximum Daily Load model was used to calculate expected tissue methylmercury concentrations in 350 millimeter (mm) largemouth bass based on estimated short- and long-term water column methylmercury concentrations from the Project alternatives in the Sacramento River at Freeport. Additional calculations were made, as a sensitivity analysis, to identify the concentrations of water column methylmercury that would need to be discharged from the Project to cause a given change in fish tissue concentrations. Calculations were based on the proportional flows from the Project in the Sacramento River at Freeport as determined by CALSIM II. Because bioaccumulation of methylmercury occurs over an extended period of time, assessment of sub-monthly changes in methylmercury would not be meaningful and would not provide additional relevant information. Please also see Master Response 3, Hydrology and Hydrologic Modeling, for a discussion of modeling time step and the use of CALSIM. In some cases, monthly results from CALSIM are the best available information for evaluation of some resources.
78-59	Chapter 6 - The draft REIR/SEIS states "The analysis in this chapter focuses on the Central Valley Basin Plan objective for waterbodies designated with the WARM or COLD beneficial use that at no time or place shall the temperature of intrastate waters be increased more than 5°F above natural receiving water temperature." In addition to this objective, the Basin Plan	A 5°F increase is not the sole basis for evaluating water temperature effects. Water temperature effects are primarily evaluated in Chapter 11, Aquatic Biological Resources. As described in Chapter 6, Surface Water Quality, Section 6.3, Methods of Analysis, fisheries resources are the primary designated beneficial use potentially affected by

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	also includes a narrative WQO, and provides as follows: "The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses." Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California including any revisions. There are also temperature objectives for the Delta in the State Water Board's 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature. Temperature changes due to controllable factors shall be limited for the water bodies specified as described in Table 3-7. To the extent of any conflict with the above, the more stringent objective applies. In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected." The 5 degree requirement is the maximum allowable change in temperature. Per the narrative WQO, no change in temperature can be made without first demonstrating to	water temperature. As such, most of the potential effects associated with changes in water temperature are discussed in Chapter 11, Aquatic Biological Resources. Chapter 11 and Appendix 11B, Upstream Fisheries Impact Assessment Quantitative Methods, describe the multiple methodologies and temperature indices used to assess temperature effects on fish species. Water temperature is also discussed in Chapter 15, Agriculture and Forestry Resources, related to rice. Please also see Master Response 5, Aquatic Biological Resources, regarding methodologies and use of modeled results related to temperature and fish.

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	the Regional Board that the alteration would not adversely affect beneficial uses. The analysis lacks any evaluation of potential impacts to beneficial uses, e.g., aquatic life, in terms of the WQO. The significance of a potential impact should be evaluated in terms of impacts to beneficial uses, not the 5 degree threshold. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	
78-60	Chapter 6 - The analysis evaluates temperature impacts to the Sacramento River from the discharge of water from Sites Reservoir; however, it appears that the analysis lacks an evaluation of temperature impacts in the Sacramento River that may be caused by the additional diversions from the river and coordinated operations with Shasta Reservoir. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Please see response to comment 78-59 regarding temperature. Sacramento River temperature effects on fisheries are evaluated in Chapter 11, Aquatic Biological Resources. Changes in temperature associated with changes in Sacramento River flow (including changes due to diversions and coordinated operations with Shasta Reservoir) were simulated with the HEC-5Q model. Changes in Sacramento River temperature are small (e.g., see Appendix 6C, River Temperature Modeling Results). Potential effects of changes in Sacramento River temperature are evaluated in Chapter 11 for multiple species of fish.
78-61	Chapter 6, page 6-29 - State Water Board staff note that the issuance of a Clean Water Act section 401 water quality certification could serve as Waste Discharge Requirements pursuant to the Porter-Cologne Water Quality Control Act (Water Code sections 13000 et seq.) as authorized by State Water Board Water Quality Order No. 2003-0017-DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges that have Received State Water Quality Certification. [Commenting Water Board or Section within the State Water Board: Water Quality & Public Trust section]	The comment notes that a water quality certification per the Clean Water Act Section 401 can also serve as a Waste Discharge Requirement per the Porter-Cologne Water Quality Control Act. The comment is noted. The Authority will obtain necessary Clean Water Act Section 401 and Waste Discharge Requirement permits for the Project as described in Chapter 6, Surface Water Quality, and Appendix 2D, Best Management Practices, Management Plans, and Technical Studies.
78-62	Chapter 6, page 6-31 - The environmental document states that while the Delta is impaired by elevated selenium, "selenium is not included in the	As described in Chapter 6, Surface Water Quality, the Project would not affect the selenium load from Stone Corral Creek and Funks

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	evaluation because the Project would not affect the major sources of Delta selenium: natural sources, San Joaquin River flow, and industries in the San Francisco Bay Area. Selenium concentrations in the Sacramento River are low, with most measurements below detection limits and measured values for total selenium all being less than 1 µg/L (WDL values for Sacramento River below Red Bluff, Sacramento River at Hamilton City, and Sacramento River above CBD measured from 2000 through 2020). Selenium concentrations in Stone Corral Creek are somewhat higher (average measured total selenium of 6.74 µg/L; Appendix 6E), but the Project would not affect the selenium load from Stone Corral Creek, and Stone Corral Creek is expected to contribute only a small percent of the water in Sites Reservoir." USEPA 2016 criterion for Se is 1.5 ug/L in lentic systems and 3.1 ug/L in lotic systems. Stone Corral Creek concentrations appear to be elevated. The document includes USEPA 2016 in the references but does not mention the criterion and does not include a Se cycling discussion in the text, which may be warranted considering the concentrations in the creek. Stone Corral Creek concentrations are 4 times the criterion for lentic systems. An evaluation of loading to the reservoir may be warranted, as continued loading may result in localized elevated bioaccumulation rates due to the change from a lotic system to a lentic environment. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Creek, and these creeks are expected to contribute only a small percent of the water in Sites Reservoir. The volume of inflow from Stone Corral Creek and Funks Creek is small, estimated to be a combined average of 14 thousand acre-feet per year (TAF/year). The USEPA selenium standards are included in Chapter 6, Table 6-9. These standards are for dissolved selenium concentrations, which are somewhat lower than the total concentrations, average of 6.15 micrograms per liter (µg/L) in Stone Corral Creek and average of 0.13 µg/L in the Sacramento River below Red Bluff (Appendix 6E, Water Quality Data). Selenium contributions from the creeks to Sites Reservoir would be substantially diluted even when reservoir storage is low. For example, the average flow and dissolved selenium concentration expected from Funks Creek and Stone Corral Creek (14 TAF at 6.15 µg/L) could be mixed with Sites Reservoir with an assumed storage at operational dead pool (60 TAF) and selenium concentrations two times the concentration in the Sacramento River below Red Bluff (0.26 µg/L), which assumes some evapoconcentration and/or prior contributions from the creeks. The resulting concentration would be 1.37 µg/L [(6.15*14+0.26*60)/74], which is below the lentic criterion of 1.5 µg/L. In reality, if Sites Reservoir storage were at operational dead pool, it likely would mean hydrologic conditions were dry, and flows in Funks and Stone Corral Creeks would be less than average and thus not discharging selenium into the reservoir. Releases from Sites Reservoir would limit buildup of selenium concentrations in the reservoir, and the releases would represent lotic conditions, which would be subject to the higher USEPA criterion of

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		3.1 µg/L. In many instances, Sites Reservoir would cause selenium concentrations in the lower creeks (below Sites Reservoir) to convert from exceeding the lotic criterion to meeting it. In addition, as acknowledged in Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements, and Chapter 6, the operation of the reservoir will comply with applicable permit requirements issued by the State Water Board and other regulating agencies.
78-63	Chapter 6, page 6-31 - The environmental document states that "Contaminants associated with sediments were also dismissed from detailed evaluation. Contaminated sediments could move into Sites Reservoir as suspended sediments during high flows, but the main supplies of contaminated sediments and their potential effects would remain in the Sacramento River channel because the amount of sediment contained in the diversions to Sites Reservoir would be small compared to what is contained in the Sacramento River channel." Reservoirs can create conditions, e.g., anoxia and hypolimnetic enrichment, that convert insoluble oxidized precipitates into reduced soluble forms, and as a result these soluble chemicals can be released from the sediment. Contaminant levels that may not pose a threat in the riverine setting may react differently and cause toxicological impacts in the reservoir or in discharges from the reservoir. Such potential impacts from metals, phosphates, HS, and other contaminants that may be caused by the reservoir conditions require analyses. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	The purpose of the text cited by the comment was to make it clear that contaminants closely associated with sediment are not expected to be any more concentrated in Sites Reservoir than in the Sacramento River. Text in Chapter 6, Surface Water Quality, has been clarified in the Final EIR/EIS, and the text revisions do not result in a change in impact determination or conclusion. Please see Master Response 4, Water Quality, regarding anoxic conditions and use of the I/O tower to control releases of constituents.

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78-64	Chapter 6, page 6-31 - According to the draft REIR/SEIS, "Contaminants associated with sediments were also dismissed from detailed evaluation. Contaminated sediments could move into Sites Reservoir as suspended sediments during high flows, but the main supplies of contaminated sediments and their potential effects would remain in the Sacramento River channel because the amount of sediment contained in the diversions to Sites Reservoir would be small compared to what is contained in the Sacramento River channel." The draft REIR/SEIS should include a quantitative estimate of the amount of sediment contained in the diversions to the Terminal Regulating Reservoir, Funks Reservoir, and Sites Reservoir. Additionally, the draft REIR/SEIS should include a discussion regarding the need and frequency of dredging activities at the Terminal Regulating Reservoir, Funks Reservoir, and Sites Reservoir and the likelihood that the sediment would contain contaminants and the associated impacts related to dredging contaminated sediment. [Commenting Water Board or Section within the State Water Board: Water Quality and Public Trust section]	Please see response to comment 78-63 regarding contaminant adherence to sediment. A quantitative estimate of suspended sediment entrained at the Red Bluff and Hamilton City intakes under the Project is provided in Appendix 11F, Smelt Analysis, (Section 11F.3, Upstream Sediment Entrainment), and is also discussed in Chapter 7, Fluvial Geomorphology, and Chapter 11, Aquatic Biological Resources. Modeling results indicate that up to approximately 2.7% and 2.1% of suspended sediment would be entrained at the Red Bluff and Hamilton City intakes, respectively. Sediment removal is not likely to substantially affect water quality because no regular sediment removal under operating conditions would be required for Sites Reservoir, Funks Reservoir, TRR East, or TRR West due to large reservoir volumes and distance from Sacramento River intakes. GCID and Tehama-Colusa Canal Authority (TCCA) perform regular maintenance on their canals, which could include sediment removal. The Authority will coordinate with GCID and TCCA on canal operations, which would include agreements on canal use.
78-65	Chapter 6, pages 6-39, 6-54, 6-58 - The environmental document includes a qualitative assessment of the primary factors that could increase or decrease mercury and methylmercury concentrations at the four geographies that could be affected by Project. Aqueous methylmercury concentration is the single most important factor influencing fish tissue Hg concentrations. The predicted aqueous MeHg concentration in the reservoir is 22 to 33-fold (short-term) and 11-17-fold (long-term) higher than the proposed aqueous MeHg allocation (<0.009 ng/L) in the Statewide Reservoir Methylmercury TMDL (SWRCB 2017b, as referenced in the draft	The impact analysis for mercury/methylmercury in Chapter 6, Surface Water Quality, compares estimated total mercury concentrations in Sites Reservoir to the USEPA's CTR mercury criterion (50 nanograms/liter total recoverable mercury) and compares estimated methylmercury concentrations to the California sport fish objective (0.2 milligrams/kilogram [mg/kg] wet weight [ww] of fish tissue). The California sport fish objective is applicable to waterbodies outside of the Delta and Yolo Bypass. As discussed in Appendix 6F, Mercury and Methylmercury, the lowest applicable water column criterion for

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	REIS/SEIS). This suggests that Sites Reservoir will create conditions that result in elevated fish tissue mercury levels that will persist indefinitely. Reservoirs create new conditions that enhance the production of MeHg and bioaccumulation and biomagnification of Hg. The creation of the reservoir has a high risk of resulting in elevated fish Hg levels that pose a risk to human recreators and consumers of fish from the reservoir as well as wildlife that consume fish. The analysis lacks an evaluation of the significance of creating a waterbody with elevated fish tissue Hg concentrations. Instead the analysis compares inorganic Hg concentrations against the California Toxics Rule, which is inadequate for this kind of environmental assessment, as stated in the early sections of the chapter. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	mercury is the CTR mercury criterion, which was developed to protect humans from exposure to mercury in drinking water and in contaminated fish (Central Valley Regional Water Quality Control Board 2010:164). This criterion is intended for the protection of aquatic life. For potential Project-related changes in fish tissue mercury concentrations in the Delta and Yolo Bypass, the Central Valley Regional Water Quality Control Board methylmercury TMDL tissue concentration objective of 0.24 mg/kg, ww, for trophic level 4 fish (0.08 mg/kg, ww, for trophic level 3 fish) was used as a point of comparison. Potential effects of the Project on fish, wildlife, and humans related to exposure to methylmercury are discussed in Chapter 10, Wildlife Resources, Chapter 11, Aquatic Biological Resources, and Chapter 27, Public Health and Environmental Hazards. Chapter 11 discusses the effects on special-status fish species of the potential increase in mercury in the Delta due to Project operations. Text regarding the potential effects of methylmercury bioaccumulation in fish on bald eagle due to the Project was added to Chapter 10 of the Final EIR/EIS. The text addition does not change the impact determinations or conclusions in that chapter. A discussion of the potential for public health to be affected by methylmercury due to consumption of fish from Sites Reservoir and other assessed geographies within the study area is presented in Chapter 27.
78-66	Chapter 6, pages 6-39, 6-54, 6-58 - Elevated MeHg discharged to the Colusa Basin Drain (CBD), which already has one of the highest average concentrations of aqueous MeHg in the Central Valley (CVRWQCB 2010) will exacerbate bioaccumulation conditions in the canal. The fish Hg levels are near 0.2 ppm and increasing aqueous MeHg concentrations will likely increase their concentrations to levels that pose risk to consumers.	It is acknowledged in Chapter 6, Surface Water Quality, that releases from Sites Reservoir could result in increased methylmercury bioaccumulation in fish in Funks Creek and Stone Corral Creek, as well as the Colusa Basin Drain (CBD). The potential for an impact on public health due to consumption of fish in these waterbodies under the

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	The environmental document states, "Because Funks Creek, Stone Corral Creek, and the CBD do not support sport fish, it is unlikely that anglers would be fishing these waterbodies; accordingly, any potential exceedances of the sport fish objective at these locations would not be expected to affect the public." The CVRWQCB staff have observed many people fishing in CBD on many occasions. This statement should be revised accordingly. [Commenting Water Board or Section within the State Water Board: Water Quality and Public Trust section]	Project alternatives is discussed in Chapter 27, Public Health and Environmental Hazards. The text referenced in this comment has been revised in Chapters 6 and 27 of the Final EIR/EIS to indicate that, although sport fish may be found in Funks Creek and Stone Corral Creek, it is unlikely that anglers would be fishing these streams because they are small, intermittent streams and their stream banks are located primarily on private land. Text indicating that the CBD does not support fish and that it is unlikely that anglers would be fishing in the CBD has been deleted. These text revisions provide clarification to the original statement regarding the potential for fishing in these three locations and do not change conclusions or impact determinations regarding potential mercury water quality effects identified in the Chapter 6 or Chapter 27 analyses. The impact determination for mercury in Chapter 6 remains significant and unavoidable. As indicated in Chapter 27 for Impact HAZ-6, there would be a less-than-significant impact on public health due to study area fish consumption because the California Office of Environmental Health Hazards Assessment (OEHHA) methylmercury fish consumption advisories would continue to be implemented in the study area, and these advisories would serve to protect people against the overconsumption of fish with increased body burdens of mercury for those following these recommendations.
78-67	Chapter 6, page 6-50 - Please note that CVRWQCB Order R5-2016-0076-01 expires in January 2022, according to the following: https://www.waterboards.ca.gov/rwqcb5/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf. State Water Board staff recommend the final draft REIR/SEIS reference any update to the Order.	It is the Authority's understanding that Central Valley Regional Water Quality Control Board Order R5-2016-0076-01 (NPDES CAG995002) has been reissued as Order R5-2022-0006 (NPDES CAG995002). Accordingly, text has been revised in the Final EIR/EIS to reference the reissued order, which expires on March 31, 2027. This text revision

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	[Commenting Water Board or Section within the State Water Board: Water Quality and Public Trust section]	does not change conclusions or impact determinations identified in the analysis.
78-68	Chapter 6, Page 6-50 - Since Stone Corral Creek is listed on the Clean Water Act Section 303(d) list for dissolved oxygen, the construction, dewatering, and diversion activities will need to comply with Basin Plan objectives and the anticipated TMDL in development for dissolved oxygen. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Section 6.2, Environmental Setting, in Chapter 6, Surface Water Quality, acknowledges the 303(d) listing for DO in Stone Corral Creek. The Authority will comply with all regulatory requirements identified in applicable basin plan(s), TMDLs, and/or permits during construction and operation.
78-69	Chapter 6, pages 6-54, 6-88 - While the draft REIR/SEIS states studies of Funks and Stone Corral Creek have not yet been conducted, a general discussion should be included of how Funks and Stone Corral Creeks will be protected from any harmful algae blooms or low-quality water from the reservoir over the long-term operation of the reservoir. The draft REIR/SEIS appears to lack an evaluation that includes the complexities of cyanobacteria and may understate the true impacts of cyanobacteria or other harmful algal blooms (e.g., pelagic and benthic states, bioaccumulation of cyanotoxins by benthic invertebrates, sediment accumulation of cyanotoxins, multiple species, reservoir discharges of cyanobacteria and toxins, and impacts to recreational users and wildlife) in water years where the reservoir levels are primarily stagnant. The draft REIR/SEIS should be revised to include additional information and analysis to address these issues. [Commenting Water Board or Section within the State Water Board: Permitting]	The Authority and Reclamation acknowledge the complexities of the environmental fate of cyanotoxins and of cyanobacteria in general. Text highlighting some of these complexities has been added to Section 6.2.2.6, Harmful Algal Blooms, of Chapter 6, Surface Water Quality. The analysis in Chapter 6 acknowledges that cyanobacteria and cyanotoxins could be released from Sites Reservoir. The fact that recreational use of the reservoir could be affected seasonally and that visitors could be exposed to cyanotoxins while recreating in or near the water in the presence of HABs is discussed in Chapter 27, Public Health and Environmental Hazards. Further, text in Section 6.2, Environmental Setting, of Chapter 6 acknowledges that cyanotoxins can accumulate in food crops, fish, and shellfish. Additional text has been added to Section 6.2 to acknowledge that cyanotoxins, specifically microcystin, can adsorb to suspended and settled sediment and that zooplankton and zoobenthos have been shown to accumulate microcystins. Text revisions to Section 6.2 do not change the conclusion or impact determination identified in the analysis. As explained in Chapter 6, Impact WQ-2, potential impacts from HABs would not be significant. In addition, releases from Sites Reservoir to Funks Creek and Stone Corral Creek will be monitored as part of a

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		Stone Corral Creek and Funks Creek Aquatic Study Plan (Aquatic Study Plan) and adaptively managed as part of the RMP as described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, to ensure that impacts remain less than significant and that fish are maintained in good condition in compliance with California Fish and Game Code 5937. Besides standard water quality parameters, the Authority and Reclamation have added cyanobacteria and cyanotoxin monitoring to the stream bioassessment component of the Aquatic Study Plan. Please refer to Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower to control releases of water quality constituents.
78-70	Chapter 6, Page 6-56 - It is not clear that the proposed mitigation measures to address water quality impacts that rely on plans that have not yet been developed will be adequate to mitigate potential water quality impacts, including impacts associated with harmful algal blooms. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Please see Master Response 4, Water Quality, for more information regarding the water quality analysis contained in Chapter 6, Surface Water Quality. The mitigation measures described in Chapter 6 are adequate to reduce impacts and explain in Chapter 6 how the magnitude of the impacts would be reduced. Please refer to Master Response 4 for a discussion on the adequacy of the water quality mitigation measures identified in Chapter 6. With respect to HABs, the analysis in Chapter 6 explains why impacts from the Project are determined to be less than significant. A detailed monitoring and action plan is also included in Appendix 2D to further minimize impacts from HABs. With respect to methylmercury, the analysis in Chapter 6 explains why impacts from the Project are determined to be significant; it then explains the specific mitigation actions that will be taken, which are mostly derived from research sited by the State Water Board in the Draft Staff Report for Scientific Peer Review for the Amendment to the Water Quality Control Plan for

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		Inland Surface Waters, Enclosed Bays, and Estuaries of California, Mercury Reservoir Provisions — Mercury TMDL and Implementation Program for Reservoirs (State Water Resources Control Board 2017a). The analysis in Chapter 6 explains why the effectiveness of the mitigation is uncertain, such that the impact is significant and unavoidable. With respect to metals impacts, the analysis in Chapter 6 explains why the impacts from the Project are determined to be significant, and it further provides a defined set of mitigation options to meet a specified performance standard—namely, reducing constituent levels to meet water quality standards for the protection of aquatic life for metals for Stone Corral Creek, and prevention of net detrimental effects from metals and pesticides associated with moving CBD water through the Yolo Bypass (including a cessation of such flows if necessary)—to ensure that impacts are less than significant. The analysis and mitigation are adequate and comply with CEQA and NEPA requirements.
78-71	Chapter 6, Page 6-56 - Analysis should be included on impacts from algal blooms in general due to odor, aesthetic impairment, and recreational impacts at the project site, within the Sacramento River, and in the Delta, including an analysis of cumulative impacts. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Sites Reservoir would be a relatively large reservoir and it is unlikely that if HABs do occur in the reservoir that the blooms would occur throughout the entire reservoir. Accordingly, any perceived aesthetic impairment or perceptible odor related to blooms would depend on the spatial and temporal distribution of the viewer and HABs. It is likely that HABs could be avoided by the viewer(s) and/or recreators given the size of the reservoir and multiple opportunities for viewers/recreators in different locations around and on the reservoir. Chapter 27, Public Health and Environmental Hazards, describes the potential for recreational use of the reservoir to be affected seasonally and the potential for visitors to be exposed to cyanotoxins while recreating in or near the water in the presence of HABs. A cumulative

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		impact analysis for water quality (including HABs) is presented in Chapter 31, Cumulative Impacts. As discussed in Chapter 6, Surface Water Quality, any potential release of cyanobacteria/cyanotoxins from Sites Reservoir would be greatly diluted when eventually discharged into the Sacramento River. Accordingly, there would be no related aesthetic impairment or odor in the Sacramento River or in the Delta due cyanobacteria/cyanotoxins potentially contained in Sites Reservoir releases. Similarly, there would be no impact on recreation in the Sacramento River downstream of Sites Reservoir or in the Delta due cyanobacteria/cyanotoxins potentially contained in Sites Reservoir releases.
78-72	Chapter 6, page 6-60 - According to the draft REIR/SEIS, "Ongoing monitoring of aqueous and fish tissue methylmercury in Sites Reservoir will be implemented per permit conditions, to assess the effectiveness of fisheries management actions over the long term." The final REIR/SEIS should identify the specific permit(s) referenced. [Commenting Water Board or Section within the State Water Board: Water Quality and Public Trust section]	The text referenced by the commenter has been revised in Chapter 6, Surface Water Quality, of the Final EIR/EIS. Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, has been revised in the Final EIR/EIS to provide clarification that the ongoing monitoring of aqueous and fish tissue methylmercury in Sites Reservoir will be implemented per requirements or conditions in a water right order, Section 401 water quality certification, or other appropriate order issued by the State Water Board and/or Central Valley Regional Water Quality Control Board. Federal, state, and local permits, approvals, and consultation processes that are potentially applicable to the Project are discussed in Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements. Appendix 4A, Regulatory Requirements, describes the regulatory setting for water quality and other environmental resources.

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78-73	Chapter 6, Page 6-72 - The environmental document indicates that providing water to the Yolo Bypass is not expected to impact dissolved oxygen conditions. Additional analyses should be provided to support this conclusion, particularly given recent results from the North Delta Food Subsidy Study. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Chapter 6, Surface Water Quality, acknowledges that DO levels in the Yolo Bypass may be temporarily affected by habitat releases during the release period (Impact WQ-2) similar to what occurred during the 2018 and 2019 North Delta Flow Action (NDFA) (aka North Delta Food Subsidy) studies (Twardochleb et al. 2021; Davis et al. 2022). Additional clarifying text has been added to the analysis in Chapter 6 (Impact WQ-2) of the Final EIR/EIS related both to the NDFA studies and DO in the Yolo Bypass (including non-managed flow pulses). To a point, there is an apparent correlation between flow magnitude (up to approximately 300 cfs) through the Yolo Bypass and DO levels (as measured in the Yolo Bypass Toe Drain near Lisbon Weir), which is apparent in years when the NDFA studies have been implemented (e.g., 2018 and 2019) as well as during non-managed flow pulses (e.g., 2020). Figure 6-5a was added to the analysis illustrating this. In addition, Figure 6-5b was added to show that DO levels are somewhat reduced and do intermittently fall below the 5 milligrams per liter (mg/L) Delta DO water quality objective in both managed (e.g., 2018 and 2019) and non-managed flow pulse years (e.g., 2020 and 2021). If the observed temporary reduction in DO levels during the 2018 and 2019 NDFA studies is representative of what may occur as a result of Sites Reservoir water being released and pushing low-DO water from the CBD downstream, temporary reductions in DO levels would potentially occur but would not be substantially different than what occurs currently. The additional analysis included in Chapter 6 supports the conclusions previously described for DO in the RDEIR/SDEIS and does not change conclusions or impact determinations.
78-74	Chapter 6, page 6-88 - The environmental document should discuss the effects of the project on HABs in pelagic, benthic, and organic systems.	Please see response to comment 78-69 regarding HABs and text revisions to Section 6.2, Environmental Setting, in Chapter 6, Surface Water Quality. The commenter does not specifically identify what is

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	[Commenting Water Board or Section within the State Water Board: Bay-Delta]	meant by "organic systems." Section 6.2.2.6, Harmful Algal Blooms, in Chapter 6 notes the potential for bioaccumulation of cyanotoxins in certain food crops, as well as in fish and shellfish. Chapter 11, Aquatic Biological Resources (Contaminants subsection of Section 11.2.3, Delta and Suisun Bay/Marsh), generally describes the potential toxic effects of Microcystis aeruginosa on the environment, and Impact FISH-8 provides a discussion of potential Microcystis bloom effects on delta smelt as a result of implementing Alternative 1, 2, or 3.
78-75	Chapter 6, pages 6-81, 6-100 - The environmental document states that "Alternatives 1, 2, and 3 would increase the aqueous methylmercury concentration at Freeport during summer and fall months of Dry and Critically Dry Water Years. These increases would range from approximately 3% above existing conditions when Sites Reservoir releases are at the long-term expected methylmercury concentration of 0.1 ng/L, to 28% above existing conditions when releases are at the short-term reasonable worst-case methylmercury concentration of 0.3 ng/L. Fish tissue methylmercury concentrations would increase by at least 5% above existing conditions when the aqueous methylmercury concentration in Sites Reservoir releases is 0.1 ng/L (estimated long-term expected concentration), and up to 50% above existing conditions when Sites Reservoir releases have the short-term reasonable worst-case methylmercury concentration of 0.3 ng/L." This would conflict with the Delta MeHg TMDL and BPA. New projects should not result in an increase in aqueous MeHg concentrations or elevated fish Hg concentrations. Even the long-term MeHg concentration is 1.7 to 2.5-fold higher than the adopted aqueous MeHg goal in the TMDL and BPA. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	The primary purpose of CEQA is for lead agencies to identify and disclose potentially significant impacts on the physical environment and mitigate those identified impacts to the extent technically and socially feasible, such that decision makers understand the environmental impacts of their decisions. This is similarly the case for NEPA, although NEPA does not mandate mitigation. That the Project has the potential to exceed the Delta methylmercury TMDL is disclosed in the EIR/EIS. As acknowledged in the CEQA significance determination for mercury/methylmercury under Impact WQ-2 in Chapter 6, Surface Water Quality, Sites Reservoir releases may cause measurable long-term degradation of water quality downstream in the north Delta by causing increases in aqueous and fish tissue methylmercury concentrations in Dry and Critically Dry Water Years and causing exceedances of the methylmercury TMDL fish tissue objectives to occur more frequently and/or by greater magnitudes during these years and release period. The implementation of Mitigation Measure WQ-1.1 is expected to minimize or reduce bioaccumulation of methylmercury by requiring steps be taken to reduce, monitor, and manage mercury in the reservoir. Most of the actions identified under Mitigation Measure WQ-1.1 are recommended actions by the State Water Board and Regional Water Quality Control Boards for new reservoirs (State Water Resources

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		Control Board 2017a). However, the degree of effectiveness of any of the identified actions to reduce mercury methylation and bioaccumulation in Sites Reservoir specifically is not known at this time. Therefore, this impact would be significant and unavoidable. As discussed in Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, CEQA and NEPA lead agencies can approve a project even if significant and unavoidable impacts are identified.
78-76	Chapter 6, page 6-91 - The draft REIR/SEIS states, "There are several reasons why the effect of moving Sites Reservoir releases through the Yolo Bypass could have a limited effect on pesticides in the Delta. • The pesticide load from the CBD to the Delta would not change; only the discharge location would change. • Pesticides are already present in the Yolo Bypass and are already being discharged to the Cache Slough Complex." This greatly oversimplifies pesticide use and interactions. Pesticides are registered for specific uses, and pesticides are applied according to crop types and time of year. The environmental document lacks any analysis of the different types of pesticides used, concentrations of pesticides present in the Yolo Bypass, Cache Slough, or the Colusa Basin Drain, the interactions of currently observed pesticides in the Yolo Bypass and Cache Slough and the addition of CBD pesticides (e.g., additive or synergistic	The Project would not alter use of agricultural or urban pesticides and, therefore, would not be expected to change pesticide load in CBD or the Delta. Pesticide concentrations measured in CBD are presented in Appendix 6E, Water Quality Data, and a description of various pesticides used is contained in Section 6.2.2.8, Pesticides, of Chapter 6, Surface Water Quality, as well as Impact WQ-2. This comment explains some of the complexities of evaluating potential effects associated with rerouting CBD water through the Yolo Bypass. There is evidence that flow pulses through the Yolo Bypass could increase phytoplankton abundance downstream of the Yolo Bypass and food supply for fish in the North Delta, including delta smelt. This conclusion is based on evaluation of flow pulses that occurred through the Yolo Bypass during 2011 through 2019 as described in Chapter 6 and Chapter 11, Aquatic Biological Resources. The magnitude of effect has been variable and the methodology for maximizing primary production has not been determined. There is some concern that flow pulses could relocate contaminants and reduce the expected benefits of the pulses (e.g., Davis et al. 2022:2,3).

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	interactions). For example, the CBD will contain, at a minimum, pesticides associated with rice farming, whereas monitoring in the Cache Slough has observed high levels of pesticides associated with urban land uses from Ulatis Creek. The environmental document should address these issues. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Mitigation Measure WQ-2.2 would reduce or minimize effects associated with releasing water to the Yolo Bypass related to pesticides. Additive or synergistic effects are not well understood, and a description of the current state of knowledge regarding synergistic effects would not substantively affect the water quality evaluation presented in Chapter 6. Possible synergistic and additive effects of pesticides and other stressors (e.g., temperature) are difficult to quantify based solely on concentrations. There is much uncertainty around these topics. While it is expected that flow pulses through the Yolo Bypass provide a net benefit to fisheries, investigation to verify net benefit continues. The requirement for net benefit to fish described in Mitigation Measure WQ-2.2 would allow flow to be released to the Yolo Bypass even if pesticides increase temporarily at some locations provided that there is a net benefit. Assessment of net benefit would, by definition, need to consider synergistic effects of pesticides as described in Mitigation Measure WQ-2.2. Ultimately, net benefit might need to be determined with experiments, such as the enclosure experiments that were attempted with delta smelt during the 2019 flow pulse (Davis et al. 2022:264).
78-77	Chapter 6, page 6-92 - The environmental document states that "operation would not increase water temperature more than 5°F at discharge locations, in compliance with the Central Valley Basin Plan." This is not a correct metric for evaluating impacts to beneficial uses. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Please see response to comment 78-59 regarding water temperature and increases of water temperature more than 5°F.

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78-78	Chapter 6, page 6-92 - The environmental document states that "operation would not reduce drinking water quality downstream due to nutrients and organic carbon or cause low DO because nutrients and organic carbon in Sites Reservoir releases would be diluted and water Bay-Delta would be aerated upon release. Any increases in reservoir nutrient concentrations may benefit fish." An evaluation against drinking water standards does not address the environmental impacts of the discharge of biostimulatory constituents. The evaluation should include an evaluation of the cumulative impacts of the discharge of biostimulatory constituents and resulting changes in productivity downstream combined with the discharge of reservoir produced HABs and cyanotoxins. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	As noted in the Chapter 6, Surface Water Quality, Table 6-3, in addition to drinking water standards for nitrate, nitrite, and nitrate plus nitrite, the Central Valley Basin Plan contains a narrative objective for biostimulatory substances, which is applicable to nutrients. As discussed in the analysis in Impact WQ-1, short-term concentrations of nutrients in Sites Reservoir would be expected to be higher than in water diverted from Sacramento River. In the long term, although nutrient levels within the reservoir could be higher than in Sacramento River, as discussed under Impact WQ-2, Sites Reservoir releases would likely have minimal effects on or would reduce nutrient levels in the CBD and would be further diluted once discharged into the Sacramento River. Similarly, any cyanobacteria would also be diluted. In general, nutrient levels in the Delta are not limiting, as discussed in the Chapter 6, Section 6.2, Environmental Setting, and any contribution from Sites Reservoir would not be expected to be substantial enough to promote aquatic growths that cause nuisance or adversely affect beneficial uses. Similar to the North Delta Food Subsidy studies, the goal of flow releases from Sites Reservoir through the CBD to Yolo Bypass is biostimulatory in nature; that is, the purpose is to increase phytoplankton production to benefit north Delta fish species. If these releases are successful in achieving an increase in phytoplankton, it would most likely be due to moving CBD water, which is dominated by agricultural drain water, through Yolo Bypass. In addition, internal biological processes within Tule Canal and the Toe Drain may also release nutrients. Assuming that observed changes in phytoplankton biovolume during and after the habitat releases from Sites Reservoir are similar to those from the North Delta Food Subsidy studies, where there were generally lower median phytoplankton biovolumes in most years (2014–2019) at both upstream and downstream sites in

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		Yolo Bypass following the flow pulse (Davis et al. 2022:158), there would be no detrimental changes in productivity in Yolo Bypass and downstream. No pulse flow-induced HABs were noted during these studies. Chapter 31, Cumulative Impacts, presents the cumulative analysis for water quality, including for nutrients, cyanobacteria, and cyanotoxins. Additional text is included in Chapter 31 of the Final EIR/EIS to provide clarification regarding whether there would be an anticipated incremental contribution related to nutrients from the Project when added to the impacts from other past, present, and reasonably foreseeable future actions. This text revision does not change conclusions or impact determinations identified in the analysis.
78-79	Chapter 6, page 6-93 - The environmental document states that operation would not cause mercury concentrations to exceed the CTR criterion in Sites Reservoir. Sites Reservoir releases with estimated expected long-term aqueous methylmercury concentrations would be lower than that in the CBD under existing conditions and therefore would not be expected to increase bioaccumulation of methylmercury in CBD fish. Sites Reservoir releases could increase aqueous and fish tissue methylmercury concentrations in the CBD, particularly during Dry and Critically Dry water years at estimated long-term worst case methylmercury concentrations in releases. However, fish tissue methylmercury levels in the CBD would likely return to baseline levels within months following the May–November release period." The production of elevated fish Hg levels in the reservoir where human and wildlife fish consumers will be exposed to toxic levels would be a significant impact. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	It is acknowledged in the impact analysis in Chapter 6, Surface Water Quality, that in both the short term and long term, estimated Sites Reservoir fish tissue methylmercury concentrations may exceed the 0.2 milligram/kilogram, ww, California sport fish objective and that this is considered a significant and unavoidable impact. Implementation of Mitigation Measure WQ-1.1 is intended to minimize reservoir methylmercury production and bioaccumulation of methylmercury in reservoir fish. In addition, as described in Chapter 27, Public Health and Environmental Hazards, the OEHHA's methylmercury fish consumption advisories would continue to be implemented for the consumption of study area fish, which would serve to protect people against the overconsumption of fish with increased body burdens of mercury. Text regarding effects of methylmercury bioaccumulation in fish on bald eagle was added to Chapter 10, Wildlife Resources, of the Final EIR/EIS. This text addition does not change the impact determinations or conclusions in that chapter.

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78-80	Chapter 6, page 6-100 - The environmental document states that "Construction, operation, and maintenance of Alternative 1, 2, or 3 would increase overall beneficial use of water in the Sacramento River watershed. The Project would not conflict or obstruct a water quality control plan and this impact would be less than significant." This statement is overly broad. The project could have significant impacts on water quality constituents or beneficial uses, and it is not clear that the proposed mitigation measures will be adequate to address these impacts given their level of detail and feasibility questions. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	An exceedance of a water quality control plan (basin plan) water quality objective would not necessarily indicate a conflict with or obstruction of implementation of the applicable basin plans for the study area. The potential for the Project to exceed single-constituent water quality objectives, as well as beneficial uses, was considered in the impact analyses presented for Impacts WQ-1, WQ-2, and WQ-3 in Chapter 6, Surface Water Quality. As described in Chapter 6 for Impact WQ-5, water quality control plans include consideration of all beneficial uses (e.g., Central Valley Regional Water Quality Control Board 2019a:2-1, State Water Resources Control Board 2018:9). While consideration of single-constituent water quality objectives is part of the analysis, the approach related to the evaluation of Impact WQ-5 is broader, given the fact that exceedances of single water quality constituents do not necessarily suggest a conflict with or obstruction of implementation of a basin plan. If water quality effects were expected to be severe or if there were no increases in beneficial uses expected to result from the project, this impact would be considered significant. Impact WQ-5 considers the overarching goal of basin plans to maximize multiple beneficial uses of water, considering changes in all beneficial uses along with changes in water quality, not simply whether a single water quality constituent objective would be exceeded. Please refer to Master Response 4, Water Quality, for a discussion on the adequacy of the water quality mitigation measures identified in Chapter 6. Also refer to response to comment 78-17 regarding adaptive management of the RMP and the associated text addition to Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, of the Final EIR/EIS. This revision does not change conclusions or impact determinations identified in the analysis.

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78-81	Chapter 7, page 7-9 - The permits mentioned under BMP-14 will expire in January 2022. BMP-14 must require compliance with the existing permits and any amendments thereto. [Commenting Water Board or Section within the State Water Board: WQ & Public Trust section]	Chapter 7, Fluvial Geomorphology, and Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, have been modified to state that BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002 for Limited Threat Discharges to Surface Water) and State Water Resource Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the existing permits and any amendments thereto.), requires compliance with permits and any amendments thereto. The text modification does not result in a change or modification to the impact determinations or conclusions in Chapter 7.
78-82	Chapter 7, page 7-9 - BMP-12 should include the following information regarding the Construction General Permit: Water Quality Order No. 2009-0009-DWQ and NPDES No. CAS000002, as amended by Order No. 2010-0014-DWQ, Order No. 2012-0006-DWQ, and any amendments thereto. [Commenting Water Board or Section within the State Water Board: WQ & Public Trust section]	Text in Chapter 7, Fluvial Geomorphology, and Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, regarding BMP-12, Development and Implementation of Stormwater Pollution Prevention Plan(s) (SWPPP) and Obtainment of Coverage under Stormwater Construction General Permit (Stormwater and Non-stormwater) (Water Quality Order No. 2022-0057-DWQ/NPDES No. CAS000002 and any amendments thereto), has been updated to list the current Water Quality Order number updated by the State Water Board on September 8, 2022. WQO No. 2009-0009-DWQ was superseded by 2022-0057-DWQ. The text in Chapter 7 and Appendix 2D has been modified to refer to "any amendments thereto." The text modification does not result in a change or modification to the impact determinations or conclusions in Chapter 7.
78-83	Chapter 9: Page 9-8 - The extent of wetland and water quality and flow related impacts is not project-level. Accordingly, additional project level information will likely be needed for 401 Water Quality Certification	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of wetland and non-wetland waters survey data. Mitigation Measures VEG-3.2 and VEG-

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	purposes. The extent of wetland areas and waters on the Project site and subsequent estimates of project impacts may change, potentially significantly, once project-level information is developed. Section 9.3.1 states that the wetland resources in the study area are based on results of high-resolution aerial imagery and prior surveys of approximately 75% of the study area conducted between 1998 and 2003, which is approximately two decades ago. This section also states that the estimates of wetland and non-wetland waters are subject to revision based on pedestrian surveys once access has been granted to the study area and pending field verification by US Army Corps of Engineers, State Water Board, and CDFW. Tables 9-2a and 9-2b note that acreage of impacts to wetlands and waters are based on preliminary engineering designs instead of project-level information needed to support decision making under section 401 of the CWA, specifically relevant to meeting state approved water quality standards and future updates to water quality standards that are currently in process. A verified delineation and jurisdictional determination of state and federally regulated waters will be needed before the Clean Water Act Section 401 certification process can proceed. A scientifically defensible estimate of jurisdictional waters and assessment of conditions is needed to fully evaluate potential impacts of the project and potential opportunities to mitigate any unavoidable impacts. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	3.3 provide that an aquatic resources delineation would occur through the CWA Section 404 and 401 permitting processes, and final compensation acreages would be determined based on that delineation. The Authority has been consulting with the USACE, State Water Board, and Regional Water Quality Control Board on CWA permitting, including impacts on both wetlands and streams. The Authority has submitted a CWA Section 401 application to the State Water Board for processing. The Authority will continue to consult with these agencies to obtain CWA permits prior to construction.
78-84	Chapter 9, pages 9-19 through 9-21 Alternatives 1-3 are described as potentially eliminating more than 375 acres of wetland resources and more than 200 miles of stream resources. This would be a substantial impact and removal of resources that are important for natural communities and ecological functions. The CEQA determination is less than significant after mitigation, however mitigation is	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, regarding the adequacy and ratios of mitigation measures. Mitigation Measures VEG-3.2 and VEG-3.3 provide that the Authority will mitigate at a minimum 1:1 ratio for any activities that result in permanent impacts on wetlands and non-wetland waters to ensure no net loss of habitat functions and values. The minimum 1:1 ratio is

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	proposed as preservation and does not include replacement at a 1:1 ratio or higher of wetland and non-wetland resources through construction and/or restoration of wetland and non-wetland aquatic habitats. This does not appear to be consistent with the finding of "not significant after mitigation." [Commenting Water Board or Section within the State Water Board: Bay-Delta]	not final but will be determined during the permitting process. Further, Mitigation Measures VEG-3.2 and VEG-3.3 state that compensation will include creation or acquisition and protection of habitat through purchase of mitigation bank credits and will be in compliance with USACE mitigation guidelines.
78-85	Chapter 11: Aquatic Biological Resources Reductions in flows and survival of juvenile fish with a demonstrated flow survival relationship are likely to be negatively impacted by Proposed Project operations that reduce baseline flows. Anticipated negative impacts on native fish species that have documented positive flow: abundance relationships reinforce the previously stated need for a project alternative that concentrates diversions during high flow periods when there is excess flow in the system and avoids diversions during lower flow periods when those flows provide for protection of fish and wildlife. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	The Project concentrates diversions during high-flow periods. Diversions during low-flow periods are relatively rare. Please see Master Response 2, Alternatives Description and Baseline, which addresses the refinements made to Project operations, including changes to the Wilkins Slough bypass flow criteria in the Final EIR/EIS that further restrict diversions. The Wilkins Slough diversion bypass flow criteria have been refined in the Final EIR/EIS to a higher minimum flow standard of 10,700 cfs from October 1 to June 14 and are also part of the Project description (rather than a mitigation measure), as described in Master Response 2. Also see Master Response 5, Aquatic Biological Resources, for a discussion of flow-related impacts on juvenile migrating salmonids and associated mitigation measures.
78-86	Chapter 11, page 11-2 Lake Berryessa appears to be incorrectly labeled Stone Corral Creek in Figure 11-1. [Commenting Water Board or Section within the State Water Board: WQ & Public Trust section]	Figure 11-1 in Chapter 11, Aquatic Biological Resources, has been revised in the Final EIR/EIS per the comment.
78-87	Chapter 11, pages 11-104 and 11-140 The draft REIR/SEIS states that "At all locations, mean monthly water temperatures for all months in all water year types under Alternatives 1A and B were within 0.5 °F of the NAA water temperature modeling results for	The text has been revised for clarity in the Final EIR/EIS. The revisions do not result in a change to the impact conclusion or determination in the chapter.

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	Alternatives 2 and 3 were similar to those of Alternative 1 at all locations." This statement is unclear and should be modified. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	
78-88	Chapter 11, page 11-107 This paragraph addresses the Tiered water temperature management for winter-run Chinook salmon; however, it only provides results in Tier 1 and Tier 2 management years. Further analysis and results for Tier 3 and Tier 4 years would be needed for comparison. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	A revised analysis evaluating tiered water temperature management for winter-run Chinook salmon is included in Appendix 11D, Fisheries Water Temperature Assessment, and Chapter 11, Aquatic Biological Resources. The inclusion of this information in the appendix and chapter does not change impact determinations or conclusions.
78-89	Chapter 11, page 11-107 "Table 11D-19" in Chapter 11, page 107, should be changed to "11D-18." [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Chapter 11, page 11-107 "Table 11D-19" in Chapter 11, page 107, should be changed to "11D-18." [Commenting Water Board or Section within the State Water Board: Bay-Delta]
78-90	Chapter 11, page 11-111 The draft REIR/SEIS concludes that the project alternatives would have "no" adverse effect on the rearing habitat for winter-run fry in the Sacramento River (page 11-111, last paragraph), however, several month-water combinations would have considerable negative impacts according to the analyses. Table 11k-23 evaluating winter-run fry rearing WUA in the Sacramento River, Segment 6, identifies that rearing habitat will be mostly reduced under the project alternatives compared to NAA; the greatest reduction will occur in October, by 3.3% in AN, 2.6% in BN, and 4.8% in CD years under Alternative	Based on updated modeling results, Chapter 11, Aquatic Biological Resources, and Appendix 11K, Weighted Usable Area Analysis, of the Final EIR/EIS discuss findings of expected reductions to fry rearing habitat for winter-run Chinook salmon under Alternative 3 compared to the No Project Alternative (in Appendix 11K, see subsections titled Winter-run Chinook Salmon under Section 11K.3, Results). When considered in combination with results from all other analyses, this was, however, not found to amount to a significant impact for the species. Note that the impact determinations regarding the effects of Alternatives 1, 2, and 3 on winter-run Chinook salmon, as well as the

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	1A compared to NAA. In addition, many factors influence survival through the rearing life stages in addition to WUA. Factors such as temperature and the relationship between WUA and water temperature on the probability of survival should be discussed as part of supporting findings. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	other target species, do not rely on results from a single analysis, life-stage, location, water year type, or season but instead are based on evaluations of multiple important environmental factors and lines of evidence, including rearing and spawning habitat availability and water temperature, which is in line with the commenter's suggestion. This is further discussed in Master Response 5, Aquatic Biological Resources, under the topics of (1) uncertainty and (2) thresholds and criteria used in the analyses.
78-91	Chapter 11, page 11-112 These tables (11N-28, 29, 30) show potential for large-scale increases (over 30%) and decreases (over 55%) of juvenile salmonid stranding under different project alternatives compared to the NAA. The draft REIR/SEIS, however, does not address any potential mitigation measures for such changes in juvenile stranding. Instead, the draft REIR/SEIS concludes that the project alternatives would not be expected to affect winter-run juvenile stranding based on the varying levels of juvenile stranding stating "some large reductions and increases in juvenile stranding occur, but large reductions in juvenile stranding are more frequent than large increases." Mitigation for increases to juvenile stranding should be identified instead of relying on potential decreases at other times to offset increases in stranding and losses to juvenile survival. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	We believe that weighing increases and reductions in expected stranding of juvenile fish is legitimate and, in fact, recommended. It is unrealistic to expect no changes in conditions such as juvenile fish stranding from a large project such as Sites Reservoir, but if the changes result in more decreases than increases in potential stranding, it is reasonable to conclude that, at worst, there would be no overall increase in stranding. Please also note that juvenile stranding analyses are just one of several lines of evidence used in making impact determinations. Analyses of new Project operations using revised CALSIM II flow data for the Final EIR/EIS has yielded minor changes in the juvenile stranding results.
78-92	Chapter 11, pages 62 11-152; 11-185 Spring-run (Table 11K-18) and fall-run Chinook salmon (Table 11K-19) spawning habitat WUA downstream of the Thermalito Afterbay Outlet will be reduced under Alternatives 1A (6.8%), 1B (5.6%), and 2 (6.7%) in October of Below Normal water years. Despite these reductions of spawning habitat in the Feather River, the draft REIR/SEIS concludes the Alternatives would	The cited reductions in mean spawning WUA are the only >5% reductions and occur only in 1 month of one water year type. Based on expert opinion, such reductions are considered to have minor effects on the overall availability of spring-run and fall-run spawning habitat. Note also that, as discussed in Master Response 5, Aquatic Biological Resources, impact conclusions regarding effects of the

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	have "mostly minor effects." Further analyses of the impacts of the reduced spawning habitat and justification for the conclusion of "minor effects" should be provided. Given the status of these fish populations, a finding of "minor effects" does not appear to be supported by the estimated losses to spawning habitat that result from the proposed project. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Project on the populations of all fish species evaluated are arrived at by weighing effects of the alternatives on all important factors. Also see discussions in Master Response 5 on: (1) how the CEQA/NEPA baseline used for impacts assessments does not include consideration of the degraded status of the population, (2) uncertainty, and (3) thresholds and criteria used in the analyses.
78-93	Chapter11 page 11-166 In table 11-29, numbers presented for "All Fish Abundance Upstream of Red Bluff" and "All Fish Abundance Upstream of Hamilton City" are the same. Please clarify. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	In Chapter 11, Aquatic Biological Resources, of the Final EIR/EIS, Tables 11-32 and 11-38 have been revised per the comment. The revision does not change an impact determination or conclusion.
78-94	Chapter 11, page 11-174 The project would result in reduced spawning habitat WUA for fall-run, especially in river segments 4 and 6 in the Sacramento River under Alternatives 1A, 1B, and 3 (Tables 11K-8, 9, 10, and 11). The draft REIR/SEIS also concludes that "Alternatives 1, 2, and 3 would result in frequent minor reductions in spawning habitat WUA for fall-run, and occasional somewhat greater reductions, primarily for Alternative 3." The mitigation measure FISH-2.1 is designed to enhance migration survival of juvenile salmonids, and its impacts on spawning habitat WUA is uncertain. This should be clarified. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	The effects of Alternatives 1, 2, and 3 on fish populations were evaluated by qualitatively weighing all relevant analysis results, including results from different processes and results from different times and locations. For example, effects of Alternatives 1, 2, and 3 on spring-run Chinook salmon eggs and alevins were evaluated by considering results of analysis of spring-run spawning weighted usable area (WUA), redd dewatering, and water temperatures in up to three different locations on the Sacramento River downstream of Keswick Reservoir and during three primary spring-run spawning months and five different water year types. Thus, for fall-run Chinook salmon, juvenile rearing habitat WUA is typically higher under Alternatives 1, 2, and 3 than the No Project Alternative, especially for Alternative 3 (see Tables 11K-38, 11K-39, and 11K-40 in Appendix 11K, Weighted Usable Area Analysis). The improvement in rearing habitat WUA is expected to offset the reduction in spawning WUA.

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		Also see discussion in Master Response 5, Aquatic Biological Resources, on thresholds and criteria used in the analyses. The cessation of pulse protection after 7 days is based on the premise that most juvenile fish move in association with the rising limb of a hydrograph (e.g., see del Rosario et al. 2013 and Poytress et al. 2014). The measure is designed to let fish moving on the rising limb pass the diversion locations without exposure to diversions. Fish that move later during prolonged flow events would be protected by the state-of-the-art fish screens at the diversions. The pulse protection measures have been modified so that they are now based on a forecasted pulse from the National Oceanic and Atmospheric Administration's California Nevada River Forecast Center. Please see Master Response 2, Alternatives Description and Baseline, for a description of the refinements made to Project operations, including refinements to Bend Bridge Pulse flows. The Authority has identified the pulse protection measure as an element of its adaptive management plan and intends to work closely with the fishery agencies to investigate methods of improving the criteria to ensure the benefits of pulses are achieved without unnecessarily diminishing diversions.
78-95	Chapter 11, page 11-207 The following sentence is unclear and should be revised: "These results indicate that steelhead in the Feather River would be negligible." [Commenting Water Board or Section within the State Water Board: Bay-Delta]	The text has been revised for clarity in the Final EIR/EIS. The revisions do not result in a change to the impact conclusion or determination in the chapter.

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78-96	Chapter 11, page 11-258 An analysis of the impact of changes to Delta outflow on dispersal of larval Delta smelt should be included in the environmental document to improve understanding of the potential impacts of the Proposed Project on Delta smelt. Reduced outflow is expected to reduce the distribution of Delta smelt larvae downstream to areas of higher quality habitat for larval and post-larval Delta smelt. Results should be discussed by month and not averaged across season or multiple months. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to delta smelt and flow-related effects, including a discussion of spring outflow-related variables.
78-97	Chapter 11, page 11-260 For tables 11-58 and 11-59, the results of abundance of the Delta smelt copepod food source (Eurytemora affinis) should be presented on a monthly basis to avoid underestimating the potential effects of reduced food sources as a result of reduced Delta outflow. Delta smelt are food limited and large reductions within a month may have a more significant biological impact than would appear based on average reductions over several months. The draft REIR/SEIS averages the results over several months (March - May, Table 11-58; March - June Table 11-59) and concludes that changes are minimal. This summary approach to presenting the data and making conclusions may significantly underestimate impacts of changes to Delta outflow on food sources for Delta smelt. [Commenting Water Board or Section within the State Water Board: Bay-Delta]	Please see Master Response 5, Aquatic Biological Resources, for a discussion related to delta smelt and flow-related effects, including a discussion of Eurytemora affinis.
78-98	Chapter 17, page 17-12 The Federal Energy Regulatory Commission (FERC) exempts from licensing certain	The Authority and Reclamation appreciate the State Water Board's comment on the FERC regulatory and licensing process for hydropower facilities.

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	hydropower facilities located on non-federally owned conduits with installed capacities up to 40 megawatts. The applicant must file a Notice of Intent to Construct a Qualifying Conduit Hydropower Facility with FERC. It is unclear if FERC has approved an exemption for the proposed generation. [Commenting Water Board or Section within the State Water Board: WQ & Public Trust section]	Chapter 2, Project Description and Alternatives, Section 2.5.2.2, Energy Generation and Energy Use, of the Final EIR/EIS discusses the Authority's expectation that the proposed hydropower facilities would be exempt from the FERC hydropower licensing requirements. Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements, Table 4-1 has been supplemented to provide further background on FERC oversight and regulation of proposed hydropower facilities. The Authority is seeking an exemption from FERC regulation for the proposed hydropower facilities. According to the Code of Federal Regulations, Title 18, Chapter 1, Subchapter B, Part 4 Licenses, Permits, Exemptions, and Determinations of Project Costs, Section 4.30 (b)(26), FERC may issue a Qualifying Conduit Hydropower Facility Exemption for constructing a hydropower project on an existing conduit (e.g., an irrigation canal). Conduit exemptions are authorized by FERC for generating capacities of 40 megawatts or less. To qualify for the exemption, the conduit must have been constructed primarily for purposes other than electric power production. FERC issued preliminary determinations March 8, 2023, for the proposed Funks Energy Recovery Project and for the proposed Terminal Regulating Reservoir Energy Recovery Project, preliminarily determining that the proposed hydropower facilities are Qualifying Conduit Hydropower Facilities that are not required to be federally licensed or are exempt from licensing (Federal Energy Regulatory Commission 2023a, 2023b). FERC preliminarily determined that the proposed Funks Energy Recovery Project and proposed Terminal Regulating Reservoir Energy Recovery Project will not alter the

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		primary purpose of the conduit, which is for irrigation, municipal water supply, and other uses, and thereby meet the criteria established by the Federal Power Act for the Qualifying Conduit Hydropower Facility exemption.
78-99	Chapter 28 The basis of the analysis for Section 28.4 is the near-term average climate hydrology. The average change in 2035 is not sufficient to describe the range of conditions expected by the end of the century. Having at least a qualitative analysis of climate change impact on water supply, and other changes that might affect the Project through its useful life (or over the century) would be better suited for analyzing the long-term feasibility of the Project. The draft REIR/SEIS should evaluate what conditions could be expected by the end of the useful life of the Project. [Commenting Water Board or Section within the State Water Board: Permitting section]	Section 28.3, Methods of Analysis, provides a detailed explanation of the use of 2035 Central Tendency (CT) and why it was used in the evaluation. An additional analysis of climate change impacts in Water Storage Investment Program (WSIP) 2070 has been added to the Final EIR/EIS; modifications to Chapter 28, Climate Change, have been made where appropriate. These updates do not significantly change the climate change analysis. Section 28.5, Potential Project-Related Climate Change Effects, qualitatively describes climate change impacts on water supply, among other resource impacts, over the long term.
78-100	Chapter 28 page 28-8 The assessment of performance with extreme change should accompany analyses, such as a drier and extreme warming scenario, and a wetter with moderate warming scenario. Analyses in Chapter 28 are based on the average amount of change in 2035 (central tendency, CT). On page 28-4 the text indicates "While average precipitation may not change significantly, there will be a change in precipitation patterns and extremes." It seems that relying only on central tendency is not adequate for describing a full range of effects. [Commenting Water Board or Section within the State Water Board: Permitting section]	Please see response to comment 78-99 regarding the two modeling scenarios (2035 CT and WSIP 2070) in Chapter 28, Climate Change. An additional analysis of climate change impacts in WSIP 2070 has been added to the Final EIR/EIS. At near-term conditions (centered on year 2035), the range of possible future conditions is narrow relative to the range observed at 2070. The incorporation of WSIP 2070 conditions captures an extreme warmer and drier condition. The quoted text in Chapter 28, Climate Change, is describing the range of outcomes under a given climate condition. Under the 2035 CT scenario, drier years (Critically Dry Water Years) will get drier, and wetter years (Wet Water Years) will get wetter. Over the long-term average, there may not be a significant change in average precipitation. The analysis in Section 28.4, Surface Water Resources,

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		the Project, and Climate Change, includes results for Wet and Critically Dry Water Years to represent the full range of effects (wetter and drier years) in a hydrologic condition that would be observed under the modeled climate change. At this time, there are not any wetter and moderate warming CALSIM II scenarios centered on 2035 or the early twenty-first century. Wet and Critically Dry Water Year types are shown in Tables 28-11, 28-12, 28-13, and 28-14. Most tables in Chapter 28 present results for Critically Dry Water Years, with fewer variables for Wet Water Years.
78-101	Chapter 28, page 28-11 Analyses are for Critically Dry and Wet Water Years with average climate change (CT 2035). While Critically Dry and Wet are the bookends for water year types, the analysis under average change does not reflect the extremes and does not reflect "the full extent of future climate scenarios." The draft RDEIR/SEIS should address how the frequency of Critically Dry and Wet water year types change with extreme change and how different Critically Dry Water Year hydrology is under extreme change compared to CT 2035. [Commenting Water Board or Section within the State Water Board: Permitting section]	Please see response to comment 78-100 regarding climate change and the reporting of results during Wet and Critically Dry Water Years using the modeled scenarios of 2035 CT and WSIP 2070. The quantitative analysis does not incorporate an interannual analysis, as it intends to estimate the performance of the Project in extreme water year types (Wet and Critically Dry). Further descriptions on how climate change will affect frequency of drought and extreme precipitation patterns are included in Section 28.2.3, Climate Change Effects on California, and Section 28.2.4, Water Management and Climate.
78-102	Chapter 28, page 28-12 If the Sites Reservoir operations are most sensitive to Wet Water Year changes under climate change, the analysis should show the extent of impacts on relevant variables during Wet Water Years with extreme climate change, not just with average change.	Please see response to comment 78-100 regarding climate change and the reporting of results during Wet and Critically Dry Water Years using the modeled scenarios of 2035 CT and WSIP 2070.

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	[Commenting Water Board or Section within the State Water Board: Permitting section]	
78-103	Chapter 31, page 31-35 The cumulative analysis should include a CalSim study that evaluates possible updates to the Bay-Delta Water Quality Control Plan as identified in the 2018 Framework Document: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/sed/sac_delta_framework_070618%20.pdf. The update of the Bay-Delta Plan has the potential to affect bypass/diversion amounts, as well as storage in Shasta, which could also affect the ability to divert from the Sacramento River by the Sites Project. [Commenting Water Board or Section within the State Water Board: Bay Delta]	Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, on the relationship of the Project to other plans, programs, policies, and agencies, including potential updates to the Bay-Delta Plan (State Water Resources Control Board 2006, 2018). Please see Master Response 2, Alternatives Description and Baseline, for an explanation of why the updates to the Bay-Delta Plan are speculative and are not included in the baseline.
78-104	Appendix 2D, pages 2D-2 to 2D-30 For table 2D-1, State Water Board staff request the Sites Authority to consult with State Water Board - Water Quality Certification Program staff when developing best management practices (BMPs) or plans that address water quality. For example, the Spill Prevention and Hazardous Materials Management/Accidental Spill Prevention, Containment, and Countermeasure Plans should be developed in consultation with State Water Board staff prior to construction. Additionally, State Water Board staff request the Sites Authority to consult with State Water Board staff regarding BMP-6, BMP-7, BMP-8, BMP-9, BMP-10, BMP-13, BMP-30, and the Initial Sites Reservoir Fill Plan. [Commenting Water Board or Section within the State Water Board: WQ & Public Trust section]	The Authority will consult with the State Water Board for best management practices related to water quality that are within the purview of the authority of the State Water Board (e.g., 401 certification).

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78-105	Appendix 5A6, page 5A6-2 Appendix A6 states that the Reclamation Temperature Model was used to simulate temperatures on the Feather River and a reference to Appendix H of 2008 OCAP BA is provided. In Appendix H of the 2008 OCAP BA there is no mention of a temperature model for the Feather River. The model used to simulate temperatures on the Feather River should be correctly identified and documented. [Commenting Water Board or Section within the State Water Board: Bay Delta]	The reference in Appendix 5A6, Model Limitations and Improvements, has been updated in the Final EIR/EIS to Rowell (1990).
78-106	Appendix 6a, pages 6A-11 to 6A-14 For table 6A-4, the table should reference the most recent California Integrated Report (Clean Water Act Section 303(d) List and 305(b) Report). State Water Board staff anticipate the 2020-2022 California Integrated Report will be submitted to the USEPA in March 2022. Additional information can be found here: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022_integrated_report.html. [Commenting Water Board or Section within the State Water Board: WQ & Public Trust section]	At the time of public release of the RDEIR/SDEIS (November 2021) and when the information in Table 6A-4, then titled "Clean Water Action Section 303(d) Impaired Water Bodies in the Study Area" (Appendix 6A, Water Quality Constituents and Beneficial Uses) was compiled prior to November 2021, the 2014–2016 303(d) list was the most recent list approved by the State Water Board and USEPA. Since that time, the 2020–2022 Integrated Report for Clean Water Act 303(d) and 305(b) (Central Valley Regional Water Quality Control Board 2022) has been approved by both of these agencies (May 2022). Accordingly, the Table 6A-4 content has been updated and the title has been revised to "Impaired Water Bodies in the Study Area Included in the 2020–2022 California Integrated Report for Clean Water Act Sections 303(d) and 305(b)" in the Final EIR/EIS. In addition, applicable text in Chapter 6, Surface Water Quality, has been updated based on the 2020–2022 303(d) list. The updates to the 303(d) list for the geographies discussed in the impact analysis were relatively minor and include water temperature and DO for specific reaches of the Sacramento River. The updates to the most recently

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		approved list(s) do not change conclusions or impact determinations identified in the analysis.
78-107	Appendix 6F, page 6F-18 The environmental document states that "Since no reservoir exists under the No Project Alternative, these fluctuations cannot be compared to a baseline. However, comparison to other reservoirs indicates that expected fluctuations are greater than median fluctuations of other reservoirs in California, indicating that reservoir fluctuations will likely contribute to conditions favorable to mercury methylation." The baseline is no reservoir producing MeHg, so the analysis should encompass all of the new MeHg being produced by the new reservoir and subsequent exposure to fish, humans, and wildlife. [Commenting Water Board or Section within the State Water Board: Bay Delta]	CEQA requires that effects for a proposed project be analyzed relative to an environmental baseline that represents the physical environmental conditions that exist at the time the CEQA process began. The CEQA baseline for assessing significance of impacts of any proposed project is normally the environmental setting or existing conditions at the time a Notice of Preparation is issued (CEQA Guidelines, § 15125, subd. (a)). NEPA does not have a comparable baseline requirement, but, like CEQA, which requires analysis of the No Project Alternative, NEPA requires analysis of the No Action Alternative. The No Project Alternative under CEQA and the No Action Alternative under NEPA are used to compare conditions without the Project to conditions with the Project. In the EIR/EIS analysis, the CEQA No Project Alternative and NEPA No Action Alternative are the same. In the analysis in Chapter 6, Surface Water Quality, the No Project Alternative represents the continuation of the existing conditions in 2020 for the study area in general, including the proposed reservoir site specifically. Because no reservoir exists under the No Project Alternative, a comparison between existing water quality conditions at the proposed reservoir site and reservoir water quality conditions once Sites Reservoir is filled and operational cannot be made. Potential effects of the Project on fish, wildlife, and humans related to exposure to methylmercury are discussed in Chapter 10, Wildlife Resources, Chapter 11, Aquatic Biological Resources, and Chapter 27, Public Health and Environmental Hazards. Chapter 11 discusses the effects on special-status fish species of the potential increase in mercury in the Delta due to Project operations. Text regarding

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		potential effects of methylmercury bioaccumulation in fish on bald eagle due to the Project was added to Chapter 10 of the Final EIR/EIS. The text addition does not change the impact determinations or conclusions in that chapter. A discussion of the potential for public health to be affected by methylmercury due to consumption of fish from Sites Reservoir and other assessed geographies within the study area is presented in Chapter 27.
79-1	According to the SDEIS, the Sites Project Authority has modified their proposal to construct and operate a new off-stream surface storage reservoir ten miles west of Maxwell, California, and the Bureau of Reclamation continues to participate in the development of the project to consider the environmental impacts of coordinating the use of federal facilities that would be used to supply water to the reservoir. Reclamation is also examining the possibility of investing in Sites reservoir storage up to 25% to improve operational flexibility of the Central Valley Project (CVP). The EPA recognizes the need for improved water management in California and welcomes the opportunity to assist Reclamation in ensuring that federal decision making concerning new water storage facilities appropriately considers environmental impacts associated with siting, design, construction, and operation of such facilities.	The Authority and Reclamation appreciate the U.S. Environmental Protection Agency's (USEPA's) engagement on the Project. The Authority and Reclamation acknowledge the role and participation of the USEPA in preparation of this EIR/EIS.
79-2	The EPA has identified several topics or resource areas in the SDEIS that would benefit from additional information or analysis in the Final EIS, including project operations, scope of analysis, climate impacts and greenhouse gas emissions, impacts to streams and wetlands, sediment management, and surface water quality. We have enclosed detailed comments and recommendations on these and other resource topics, and we have included a brief summary below. Please note that because the SDEIS does not identify Reclamation's Preferred Alternative, our comments apply to all alternatives.	The Authority and Reclamation appreciate USEPA's engagement on the Project. Responses to specific comments are provided below.

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79-3	The EPA is concerned about the approach to project operations in the SDEIS, which have not yet been finalized but are critical to understanding the environmental impacts of Sites Reservoir. Operations are modeled using historical hydrology data that may not reflect current and future conditions, and diversion criteria are based on regulatory requirements that are currently being revised.	The RDEIR/SDEIS and Final EIR/EIS use existing conditions in 2020 to define the environmental baseline. This 2020 environmental baseline reflects a range of historical hydrologic conditions (e.g., watershed runoff); current physical conditions (e.g., dams); updated regulatory operating conditions of the CVP and the SWP; the water rights orders and decisions and water quality criteria from the State Water Resources Control Board (State Water Board); updated municipal, environmental, and agricultural water uses; updated land uses; and relevant updated laws, regulations, plans, and policies. Several adjustments were made in the CALSIM II modeling between the RDEIR/SDEIS and the Final EIR/EIS to update the modeling procedures and be representative of real-time operations. Please see Master Response 2, Alternatives Description and Baseline, and Master Response 3, Hydrology and Hydrologic Modeling, for information regarding the level of detail provided in the alternatives description and the modeled representation of the alternatives. Please also see Master Response 3 regarding the use of historical hydrologic data and the representation of existing regulatory requirements.
79-4	While important components of the originally proposed project have been altered, none of these project changes explain why the Trinity River and lower Klamath basin were excluded from the scope of analysis.	Please refer to Master Response 8, Trinity River, which explains why the Project would not affect the Trinity River system. The Project is not proposing to modify, remove, or add to any of these factors. Regardless of the Project, Reclamation would continue to operate the CVP Trinity River Division facilities consistent with all applicable statutory, legal, and contractual obligations. Because the Project is not proposing to modify, remove, or add to any of these factors, the Project would not affect or result in changes in the operation of the CVP Trinity River Division facilities including Clear Creek.
79-5	The SDEIS uses a 2035 scenario for analysis of potential climate impacts; however, the project would not begin operating until at least 2030, making the 2035 scenario unhelpful to the analysis for operations.	As described in Chapter 28, Climate Change, Section 28.3, Methods of Analysis, the 2035 hydrology is based on a future climate period of 2020 through 2049 (centered on 2035). In other words, it extends past

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		the year 2035. In Chapter 28 and Appendix 28A, Climate Change, of the Final EIR/EIS, a future climate centered on Water Storage Investment Program (WSIP) 2070 (2056–2085) is also included to present additional long-range changes to hydrology and the operations of the Project.
79-6	Sufficient information on wetlands and other aquatic resources to support permitting under Section 404 of the Clean Water Act is not included in the SDEIS.	Please see the response to comment 79-21, addressing actions that will occur during the CWA Section 404 and 401 permitting processes and the Authority's ongoing consultation efforts with USACE, State Water Board, and the Regional Water Quality Control Board.
79-7	Appropriate testing procedures and plans for sediment management and beneficial reuse have not been specified.	Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, provides a description of BMP-11, Management of Dredged Material, which identifies procedures for testing, containment, reuse, and disposal. Depending on the chemical composition of the sediment, beneficial use may be appropriate. Material not suitable for reuse will be disposed of at a permitted landfill site. Appendix 2D also provides a description of other measures to manage sediment: BMP-12: Development and Implementation of Stormwater Pollution Prevention Plan(s) (SWPPP) and Obtainment of Coverage under Stormwater Construction General Permit (Stormwater and Non-stormwater) (Water Quality Order No. 2022-0057-DWQ/NPDES No. CAS000002 and any amendments thereto). BMP-14: Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002 for Limited Threat Discharges to Surface Water) and State Water Resource Control Board

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		Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the existing permits and any amendments thereto.)
79-8	The EPA has concerns about the effects of Sites Reservoir on water quality. The SDEIS identifies substantial adverse effects that can be expected from mercury methylation in the proposed reservoir; the EPA is concerned that this impact could disproportionately affect tribal and subsistence fishing communities.	Chapter 27, Public Health and Environmental Hazards, assesses the potential impact on public health from mercury/methylmercury due to consumption of fish in the study area, which may be affected by increased bioaccumulation of methylmercury as a result of construction and operation of Sites Reservoir. While not currently specifically tailored to Tribal and subsistence fisherpersons, the California Office of Environmental Health Hazards Assessment (OEHHA) methylmercury fish consumption advisories would continue to be implemented in the study area, and these advisories would serve to protect people against the overconsumption of fish with increased body burdens of mercury for those following these recommendations. Text was added to the Final EIR/EIS, Chapter 27, in Section 27.2.3, Public Health Hazards Related to Methylmercury and HABs, that discusses beneficial uses of water in the state in the context of the California sportfish water quality objective and the Tribal Subsistence Fishing water quality objective. In addition, text was added to the same section adding further clarification on the OEHHA's fish consumption advisories. Text was also added to Chapter 27 for Impact HAZ-6 to add clarification that the OEHHA standards and fish consumption advisories would also serve to protect tribal and subsistence fisherpersons against the overconsumption of fish with increased body burdens of mercury. These text revisions do not change conclusions or impact determinations identified in the analysis.
79-9	The EPA has concerns about the effects of Site Reservoir on water quality. The SDEIS finds that evapoconcentration of aluminum, copper, and iron	Water quality and multiple water quality constituents are fully evaluated in Chapter 6, Surface Water Quality. As described in

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	would likely contribute to exceedance of water quality objectives to protect aquatic life.	Chapter 6 and Master Response 4, Water Quality, evapoconcentration is incorporated into the metals analysis contained in Chapter 6. Chapter 6 (Impact WQ-2) describes that evapoconcentration may occasionally result in exceedance of water quality objectives to protect aquatic life in Sites Reservoir. However, because no reservoir exists under the No Project Alternative, a comparison between the existing water quality conditions at the proposed Sites Reservoir site and reservoir water quality conditions once Sites Reservoir is filled and operational cannot be made at this time. However, as noted in Chapter 6, Surface Water Quality, mercury accumulated in the soil from atmospheric deposition is a source for total mercury in new reservoirs that is released into the water column after a reservoir is inundated, in addition to being a source for methylmercury generation. New reservoirs increase mercury methylation and bioaccumulation, and initial mercury and methylmercury concentrations after filling are expected to be higher than average concentrations in the long term. The magnitude and duration of mercury methylation after the initial filling of Sites Reservoir would partially depend on the amount of organic carbon in the underlying soils and how much organic material is inundated when the reservoir fills. CEQA requires that effects for a proposed project be analyzed relative to an environmental baseline that represents the physical environmental conditions that exist at the time the CEQA process began. The CEQA baseline for assessing significance of impacts of any proposed project is normally the environmental setting or existing conditions at the time a Notice of Preparation is issued (CEQA Guidelines, § 15125, subd. (a)). The No Project Alternative under CEQA is used to compare conditions without the Project to conditions with

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		the Project. NEPA has no baseline requirement, but it requires analysis of the No Action Alternative. "No action" represents a projection of current conditions and reasonably foreseeable actions to the most reasonable future responses or conditions that could occur during the life of the project without any action alternatives being implemented, including the continuation of preexisting and ongoing plans, programs, and operations. In the analysis in Chapter 6, the No Project Alternative represents the continuation of the existing conditions in 2020 for the study area in general, including the proposed reservoir site without Sites Reservoir. Please refer to Master Response 2, Alternatives Description and Baseline, regarding the CEQA and NEPA baseline used and the comparison of potential effects of the Project to that baseline. Downstream waterways already experience some exceedances of water quality objectives for aquatic life. Effects in downstream waterways would be diminished because reservoir release concentrations would decrease due to settling of metals, due to implementation of Mitigation Measure WQ-2.1, and due to dilution associated with the agricultural water supply management system and the Sacramento River. Please see Master Response 4 regarding downstream beneficial uses and Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, regarding the Stone Corral Creek and Funks Creek Aquatic Study Plan (Aquatic Study Plan), the Reservoir Management Plan (RMP), and adaptive management for Funks Creek and Stone Corral Creek.
79-10	The SDEIS acknowledges that conditions in the proposed reservoir would be conducive to the formation of harmful algal blooms, but the EPA has concerns that the analysis presented may mischaracterize the likelihood and severity of blooms.	The qualitative harmful algal blooms (HABs) analysis in Chapter 6, Surface Water Quality, relies on multiple environmental variables to characterize the likelihood of the formation of HABs in Sites Reservoir, including water temperature, reservoir drawdown, reduced storage

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		volume, and nutrient availability. The analysis does not attempt to characterize the severity (e.g., size, cyanobacterial biomass) of potential blooms because that would be too speculative given the multiple environmental variables affecting HABs. Additional text has been added to Section 6.2.2.6, Harmful Algal Blooms, in Chapter 6 to provide more information and/or clarification regarding planktonic vs. benthic HABs, temperature dependency of growth rate, and differences in light tolerance (and, thus, water column position) among cyanobacterial genera. The text revision does not change conclusions or impact determinations identified in the analysis.
79-11	The EPA believes that the proposed mitigation measures to manage these water quality concerns [effects of mercury methylation in the proposed reservoir; evapocentration of aluminum, copper and iron; effects of algal blooms] would not be effective and, in many cases, would conflict with each other.	Please refer to Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower to control releases of water quality constituents and the resolution of potential conflicts and regarding the adequacy of the water quality mitigation measures identified in Chapter 6, Surface Water Quality. Because presence of HABs/cyanotoxins would be the only reason for releasing water from deeper in the reservoir, potential conflicts with regard to I/O tower tier selection to avoid releasing multiple water quality constituents of concern would not occur unless HABs/cyanotoxins were present at the I/O tower. If HABs/cyanotoxins were present at the I/O tower at the same time relatively high metal concentrations (including methylmercury) or water too cold for agriculture was deep in the reservoir, then there might be no I/O tower tier available for discharging relatively high-quality water. However, as described in Master Response 4, this scenario would be rare and additional measures would protect against the consequences of such a scenario.
79-12	We [EPA] have concerns about the modeling approach and presentation of results assessing the effects of Sites Reservoir operations and CVP exchanges on temperature-dependent mortality of listed fish species, including Chinook salmon.	The Authority and Reclamation appreciate the USEPA's engagement on the Project.

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79-13	Operations Modeling and Diversion Criteria As noted in our [EPA] 2018 comment letter on the Draft EIS, important components of the Sites Project remain undefined pending outcomes of state funding processes, such as the California Proposition 1 Water Storage Investment Program, including a final Operations Plan. While the impacts of constructing the reservoir are significant, a thorough description of project operations is critical to guiding the environmental analysis presented in the SDEIS, as well as guiding other federal and state permit decisions.	The EIR/EIS includes information and data on the location, design, schedule, and operation for all Project components for each of the alternatives evaluated with sufficient detail to analyze the Project impacts and sufficient detail regarding the Project for decision makers to understand the alternatives being evaluated. Please see Master Response 2, Alternatives Description and Baseline, regarding the adequacy of the Project and alternatives description. Please see response to comment 79-3 regarding the environmental baseline and the adjustments made in the CALSIM II modeling between the RDEIR/SDEIS and the Final EIR/EIS. The Authority and Reclamation considered multiple operational scenarios over the course of Project development that were designed to meet the Project objectives, purpose, and need; enhance Project benefits; and reduce or avoid impacts. The features of alternatives, including Sites Reservoir capacity, conveyance systems, and operational scenarios, were conceptually developed and refined over time to maximize the achievement of the objectives. Please see Master Response 9, Alternatives Development, regarding operational criteria development, and Master Response 2, Alternatives Description and Baseline, regarding the preparation of the Reservoir Operations Plan.
79-14	The analysis presented in the SDEIS is based on modeled project operations generated by the California Department of Water Resources CalSim-II model, which is modified to include the proposed Sites Reservoir and conveyance facilities operating under specified diversion criteria (p. 2-31). The EPA is concerned that the modeling approach presented in the SDEIS does not represent the best available information on project operations. CalSim-II only evaluates historical hydrology through 2003 and does not include the more recent severe 2012-2016 drought. CalSim-II was replaced by CalSim 3.0 in 2017, which includes historical data through 2015, improved supply and demand estimation, finer spatial resolution, and a	Please see response to comment 79-3 regarding the environmental baseline and the adjustments made in the CALSIM II modeling between the RDEIR/SDEIS and the Final EIR/EIS. The operational criteria identified in Chapter 2, Project Description and Alternatives, have been refined since the RDEIR/SDEIS. Please see Master Response 2, Alternatives Description and Baseline, regarding refinements to Project operations, and Master Response 3, Hydrology and Hydrologic Modeling, and Chapter 3, Environmental Analysis, regarding the selection of CALSIM II, and modeling modifications and assumptions. When the Notice of Preparation was published for the

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	daily rainfall-runoff model. These factors suggest that CalSim 3.0 may be more a more appropriate operations model, and better suited to assessing potential effects of climate change on the proposed Sites Reservoir. Additionally, the EPA has concerns that the operating criteria identified on p. 2-31 used to model diversions to Sites are based on state and federal requirements that are currently being revisited.	RDEIR/SDEIS (2017) and, in 2020, when the modeling analysis was conducted for the RDEIR/SDEIS, CALSIM II was the only systems operation model that was jointly supported by California Department of Water Resources (DWR) and Reclamation. As such, at the time of analysis, CALSIM II was the best tool available to evaluate Sites operations in the CVP and SWP systems.
79-15	Recommendations: In the FEIS, fully describe the finalized operations of the proposed project and ensure that any operations not contemplated in the diversion criteria or CalSim-II results are reflected in the water supply, surface water quality, and aquatic biological resources chapters. Consider using CalSim 3.0 (or most current version) to evaluate whether modeled operations are affected by a longer temporal scope and other improvements over CalSim-II. Conduct a sensitivity analysis to evaluate the sensitivity of operations model results to reasonably foreseeable climate change impacts such as reduced and altered timing of runoff and increased crop and vegetation evapotranspiration.	Please see response to comment 79-14 regarding the use of CALSIM II and the refinements to operation criteria since the RDEIR/SDEIS. Please see Master Response 3, Hydrology and Hydrologic Modeling, which describes the modifications to modeling for the Final EIR/EIS, including baseline, Shasta Lake Operations, changes in diversion criteria, periods of releases, and other factors.
79-16	Consider modifying one alternative to include more stringent diversion criteria to meet Delta outflow objectives and protect Delta beneficial uses. In the 2018 Framework for the Sacramento/Delta Update to the Bay-Delta Plan [Footnote 1: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/sed/sac_delta_framework_070618%20.pdf], the State Water Resources Control Board states that existing requirements are insufficient to protect the Bay-Delta ecosystem and proposes new inflow-based Delta outflow objectives of 55% of unimpaired flow withing an adaptive range of 45-65%.	Please see Master Response 9, Alternatives Development, regarding the reasonable range of feasible alternatives. Many commenters suggested modifications to reservoir operations should be made regarding decreases in diversions, increases in bypass flows, or both compared to those evaluated in the RDEIR/SDEIS. The Authority and Reclamation worked with wildlife agencies to develop more restrictive criteria, the result of which has been analyzed in the Final EIR/EIS. Please see Master Response 3, Hydrology and Hydrologic Modeling, for a discussion of modifications to modeling based on changes to diversions and other operations.
79-17	Consider modifying the Bend Bridge Pulse Protection diversion criterion (p. 2-31) to initiate pulse protection proactively using leading indicators, such as river stage forecasts from the National Oceanic and Atmospheric	Please see Master Response 2, Alternatives Description and Baseline, regarding refinements to operations, including the Bend Bridge pulse protection diversion. Refinements have been made to the Bend

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	Administration's California-Nevada River Forecast Center, rather than lagging indicators such as visual observation of fish migration.	Bridge pulse protection criteria. They are no longer based on a 3-day trailing average of flows at Bend Bridge. Instead, they will be based on a predicted storm-related flow event from the National Oceanic and Atmospheric Administration's (NOAA) California Nevada River Forecast Center. The Authority will use all available information and data sources to inform operations.
79-18	Scope of Analysis While the 2017 DEIS/DEIR analyzed potential impacts of the project on the Trinity River and lower Klamath River, the SDEIS states on p. 2-30 that "the Project would not affect or result in changes in operation of the CVP, [or] Trinity River Division [sic] facilities (including Clear Creek)." It is unclear how this statement is supported. As noted above, diversions and releases from Sites Reservoir would be coordinated with CVP operations, which include the Trinity River Diversion. Proposed CVP exchanges with Lake Shasta would alter CVP operations, which in turn could affect operations of the Trinity River Diversion. Reclamation investment in the project, as high as 25% in Alternative 3, could result in significant amounts of new north-of-Delta CVP storage, utilization of which would likely result in impacts to north-of-Delta CVP operations.	Please refer to Master Response 8, Trinity River, regarding the ability to divert CVP water into Sites Reservoir, the protection of existing water rights, Reclamation's investment in the Project, and the scope of analysis with regard to the Trinity River system. Trinity River origin water is water appropriated under Reclamation's CVP water rights and would not be stored in Sites Reservoir under the Project. The Project does not propose and would not result in any statutory, legal, contractual, or operational changes in the Trinity River system or lower Klamath Basin.
79-19	Recommendations: In the FEIS, analyze and disclose how CVP exchanges could alter Trinity River Diversion operations, and how these changes may affect water supply, surface water quality, aquatic biological resources, and tribal trust resources in the Trinity River and lower Klamath basin.	Please refer to Master Response 8, Trinity River, regarding the ability to divert CVP water into Sites Reservoir, the protection of existing water rights, Reclamation's investment in the Project, and the scope of analysis with regard to the Trinity River system. Trinity River origin water is water appropriated under Reclamation's CVP water rights and would not be stored in Sites Reservoir under the Project. The Project does not propose and would not result in any statutory, legal, contractual, or operational changes in the Trinity River system or lower Klamath Basin.

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		The commenter does not specify what tribal trust resources it is referring to in the Trinity River and lower Klamath Basin. However, because the Project would have no impact on the Trinity River or lower Klamath Basin, the Project would have no impact on tribal trust resources associated with those systems. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, for a discussion of how Reclamation, as the federal lead agency, has trust responsibilities for natural resources associated with reservations (e.g., Winters doctrine) and former reservation lands and over Indian trust assets.
79-20	Provide an update on consultation between Reclamation and Klamath Basin tribal governments. Discuss issues that were raised, how those issues were addressed in relation to the proposed project, and how impacts to tribal or cultural resources would be avoided or mitigated, consistent with Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, Section 106 of the National Historic Preservation Act, and Executive Order 13007 Indian Sacred Sites.	Please see Master Response 8, Trinity River, regarding consideration of the Trinity River. Because the Project would not affect or result in changes in the operation of the CVP Trinity River Division facilities, activities between Reclamation and the Klamath Basin tribal governments are separate and apart from the Project. Reclamation would continue to operate the Trinity River Division consistent with all applicable statutory, legal, and contractual obligations. Section 106 of the National Historic Preservation Act is addressed in Chapter 22, Cultural Resources. Compliance with Section 106 of the National Historic Preservation Act is separate from the Authority's compliance with CEQA Assembly Bill 52 for tribal cultural resources. Please refer to Master Response 7, Tribal Coordination, Consultation, and Engagement, for the Authority's and Reclamation's tribal consultation obligations. Executive Order 13175 of November 6, 2000 (Consultation and Coordination With Indian Tribal Governments), charges all executive departments and agencies with engaging in regular, meaningful, and

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		robust consultation with tribal officials in the development of federal policies that have tribal implications. In addition to the scoping and public involvement requirements of CEQA and NEPA, the Authority and Reclamation have continued to meet with stakeholders, interested parties, tribes, and state and federal regulatory agencies. This includes consultation with federal agencies, state agencies, and tribes, as well as coordination with NEPA Cooperating Agencies and CEQA Responsible and Trustee Agencies. The Authority and Reclamation have also coordinated with Native American representatives, other government entities, NGOs, and landowners to keep them informed of Project progress and to solicit input on the Project. Similarly, Executive Order 13007 directs federal land-managing agencies to accommodate access to, and ceremonial use of, tribal sacred sites by tribal religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. No tribal sacred sites have been identified at Funks Reservoir or along the TC Canal, to date.
79-21	Wetlands and Clean Water Act Section 404 As noted in the EPA's 2018 letter on the Sites Reservoir DEIS, the proposed project would require a permit for the discharge of fill material into waters of the U.S. under Section 404 of the Clean Water Act. The information in Chapter 9 (Vegetation and Wetland Resources) and Appendix 9B (Vegetation and Wetland Methods and Information) of the SDEIS indicates that the estimates of direct (fill) and indirect (inundation) impacts to waters of the U.S. were assessed primarily using interpretation of aerial imagery, and that a protocol-level aquatic resource delineation has not been conducted in the proposed reservoir footprint in over 20 years. Based on	Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses the adequacy of wetlands survey data and the wetlands mitigation. To clarify the acreages in the comment, please see Table 9-2a in Chapter 9, Vegetation and Wetland Resources. This table shows that total permanent impacts on wetlands, including forested wetland, freshwater marsh, managed wetland, scrub-shrub wetland, and seasonal wetland, would be 386 acres; and total permanent impacts on streams, including canal, ditch, perennial stream, intermittent stream, and ephemeral stream, would be 238 acres. Permanent

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	the information presented, construction of the reservoir and appurtenant facilities under Alternatives 1 or 3 would result in permanent impacts to approximately 425 acres of wetlands and 234 acres of streams, with impacts under Alternative 2 slightly lower due to a smaller reservoir footprint (p. 9-19, 9-29). These impacts to waters of the United States are jurisdictional under Section 404 of the Clean Water Act and require analyses and findings, such as the determination of a least environmentally damaging practicable alternative (LEDPA), that cannot currently be supported without additional site-specific information which is not provided in Chapter 9. The EPA encourages concurrent analysis of alternatives under NEPA and CWA Section 404 to ensure that the LEDPA is included in NEPA alternatives and can be selected in the Record of Decision. Under the 2008 Mitigation Rule (40 CFR 230.91-98), avoidance, minimization, and compensation for impacts are required for compliance with Section 404 in that order, and compensatory mitigation should be sited properly using a watershed approach to ensure that impacts are appropriately offset. The extent of the impacts to aquatic resources from construction of Sites Reservoir would far exceed any other recent project in the Sacramento Valley; it may prove difficult to compensate for such impacts.	impacts on other non-wetland waters, including pond and reservoir would be 39 acres. The Authority has submitted a draft CWA Section 404 application to the USACE, including a 404(b)(1) analysis of Project alternatives and a preliminary determination of the LEDPA. The Authority will continue to consult with the USACE to obtain a verified delineation and Preliminary Jurisdictional Determination for the extent of aquatic resources and to subsequently confirm the LEDPA and develop the mitigation plan.
79-22	Chapter 9 does not present information on how project operations would affect wetlands along the Sacramento River downstream of water conveyance facilities and in the Sutter and Yolo bypasses other than to conclude that they would not be substantially affected. However, the bypass flow and weir spill analysis in Appendix 11M (Inundated Floodplain and Side-Channel Habitat Analysis, including Yolo and Sutter Bypasses) suggests that project operations would reduce the area of inundated areas in both bypasses and in Sacramento side channel habitat. These areas also include extensive areas of riparian and floodplain wetlands, including pending and approved mitigation banks providing CWA Section 404 mitigation credits.	Chapter 9, Vegetation and Wetland Resources, incorporates by reference analyses of Project operations and hydrology impacts contained in Chapter 5, Surface Water Resources; Chapter 7, Fluvial Geomorphology; and Chapter 11, Aquatic Biological Resources in concluding that areas downstream of the conveyance to Sacramento River would not be affected by operation of the Project. Yolo Bypass habitats include wetland, riparian, and non-wetland habitats. The riparian habitat is a fraction of the overall acreage in Yolo Bypass and is located primarily at the north end near Fremont Weir (Yolo Habitat Conservancy 2018; California Department of Fish

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		and Game 2008). Project operations effects on the Sacramento River, Sutter Bypass, and Yolo Bypass are described in Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis. The inundated floodplain and side-channel habitat analysis of Sutter Bypass and Yolo Bypass discussed in Chapter 11 and Appendix 11M likely overestimate the effect of diversion on wetland habitat (i.e., reduction in flow or inundation), because flooded habitat deeper than 1 meter is excluded as being unsuitable for juvenile salmonid rearing. Appendix 11M concludes that Project operations during the winter and spring months, when flooding is necessary to support floodplain wetlands, would cause no change in flow in Sutter Bypass and small reductions in Sacramento River side-channel habitat and flooded acreage in the Yolo Bypass in all types of water years, including Dry and Critically Dry Water Years. Using these side-channel effects as an indicator of water level changes along the main stem of the Sacramento River, there would also be small reductions in water levels in the river. Based on modeling results, the minor changes in winter and spring flooding would not substantially affect the associated floodplain wetlands or riparian habitat. Riparian ecosystems depend on groundwater, as well as the interaction between groundwater and streamflow, depending on the proximity of riparian species to a river or floodplain. The riparian tree and shrub species commonly found along the Sacramento River and in Yolo Bypass are phreatophytes, which have adapted to fluctuating water supplies by developing deep root systems to access groundwater. Many riparian tree and shrub species commonly found along the Sacramento River, including box elder, cottonwood, valley oak, willows, elderberry, and coyote brush, are phreatophytes, which have deep taproot systems to access the capillary fringe above

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		groundwater (California Department of Water Resources 2022; The Nature Conservancy 2018). Groundwater level decline can have negative effects on riparian vegetation. However, the small changes in the flow of a large perennial stream, such as the Sacramento River, would cause very minor, if any, decreases in the water table within the adjacent riparian habitat. As described in Chapter 5, flow in the Tule Canal and Toe Drain in the Yolo Bypass continues even when no water enters the bypass from the Sacramento River. As described in Chapter 8, Groundwater Resources, Impact GW-2, model-simulated Sacramento River groundwater elevations for Project operations were almost identical to the baseline conditions. Reductions due to Project operations, therefore, would not decrease groundwater to a level below that accessed by riparian tree and shrub root systems. With only minor changes to water levels in the Sacramento River and the Yolo Bypass, stress from lack of water on riparian vegetation would not be anticipated to occur. Based on the physical–biological interactions of riparian habitat with groundwater and streamflows and the current modeling results, described above, riparian habitat would not be adversely affected.
79-23	Recommendations: In the FEIS, disclose steps taken to achieve compliance with Section 404 of the Clean Water Act and implementing regulations (40 C.F.R. Part 230). - Using approved protocols, delineate all waters to be affected by the construction of Sites Reservoir and associated facilities, and work with the US Army Corps of Engineers and the EPA to obtain a formal jurisdictional determination.	Please see the responses to comment 79-21 addressing actions that will occur during the CWA Section 404 and 401 permitting processes and the Authority's ongoing consultation efforts with USACE, State Water Board, and the Regional Water Quality Control Board for a preliminary determination of LEDPA. Please refer to Master Response 6, Vegetation, Wetland, and Wildlife Resources, which addresses wetlands survey data and mitigation.

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	-To support a LEDPA determination, conduct a formal and reproducible assessment of the condition of aquatic resources in the reservoir footprint using an approved conditional assessment such as the California Rapid Assessment Method (CRAM).[Footnote 2: California Wetland Monitoring Workgroup (CWMW). 2019. Using the California Rapid Assessment Method (CRAM) for Project Assessment as an Element of Regulatory, Grant, and other Management Programs. Technical Bulletin – Version 2.0, 85 pp. https://www.cramwetlands.org/sites/default/files/2019CRAM_TechnicalBulletin.pdf] - Identify potential opportunities for compensatory mitigation in the Sacramento River watershed to support development of a Mitigation Plan (40 CFR 230.94©) following LEDPA determination.	
79-24	In the FEIS, update Chapter 9 to include a description of how changes in timing and reductions in bypass and side-channel inundation caused by project operations may affect wetland function outside of the construction footprint.	Please see response to comment 79-22 regarding bypass and side-channel inundation.
79-25	Sediment Management As discussed in Chapter 6 (Surface Water Quality), a large proportion of total concentrations of metals and pesticides in Sacramento River water under high discharge conditions are associated with sediments. Construction of the reservoir, access roads, and recreational facilities is also likely to result in erosion and mobilization of sediments in runoff. Sediments from the Sites watershed and Sacramento River would likely accumulate in Sites Reservoir and conveyance facilities, requiring active management and removal of sediment deposits. Conversely, waterbodies such as the Colusa	No regular sediment removal would be required for Sites Reservoir, Funks Reservoir, TRR East, or TRR West due to large reservoir volumes and distance from Sacramento River intakes. GCID and Tehama-Colusa Canal Authority (TCCA) perform regular maintenance on their canals, which could include sediment removal. The Authority will coordinate with GCID and TCCA on canal operations, which would include agreements on canal use. Discharges from Sites Reservoir are unlikely to affect quality of sediment in Colusa Basin Drain (CBD). As described in Chapter 6,

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	Basin Drain (CBD) used to convey Sites deliveries, would experience higher flows that may increase mobilization of contaminated sediments into sensitive waterbodies like the Yolo Bypass and lower Sacramento River. Movement and resuspension of contaminated sediments can result in longer term ecological impacts via several mechanisms: sediment bioaccumulation into the food web such as for methylmercury and some pesticides, and acute and chronic toxicity resulting from discrete flushes (e.g., fall flush of the CBD through the Yolo Bypass containing higher concentrations of heavy metals and pesticides would directly impact sensitive fish and other aquatic species). The SDEIS proposes best management practices in Appendix 2D (Best Management Practices, Management Plans, and Technical Studies) to ameliorate potential impacts from the project on water and sediment quality. Appendix 2D.3.3 (Metals) also discusses measurement of water quality metal concentrations; it does not specifically call for testing of metal concentrations in sediment or sediment elutriates. Appendix 2D.5 (Sediment Technical Studies Plan), discusses the sediment monitoring program but does not include background screening for potential contaminants of concern (PCOCs) and toxicity. The Delta Long Term Management Strategy [Footnote 3: Delta LTMS is an official Regional Dredging Team established to implement the National Dredging Policy: http://water.epa.gov/type/oceb/oceandumping/dredgedmaterial/aboutactionagenda.cfm] (LTMS) includes a goal of maximizing beneficial reuse of dredged material in the Delta. Appendix 2D includes dredged material testing and disposal commitments. BMP-11 (Management of Dredged Material) states "Prior to dredging, a chemical evaluation of Funks Reservoir water and sediment will be conducted to determine contaminant	Surface Water Quality, CBD already contains elevated concentrations of metals and pesticides, which are generally expected to be higher than concentrations released from Sites Reservoir. Furthermore, releases from Sites Reservoir are unlikely to contain substantial amounts of suspended sediment because releases would occur after sediment from the Sacramento River source water has had time to settle. Increases in CBD flow associated with Sites Reservoir releases are unlikely to cause substantial mobilization of CBD sediment. Sites Reservoir releases would occur only when flow in CBD is low, to accommodate additional water without flooding any fields. Chapter 5, Surface Water Resources, Section 5.4.2, CBD Hydraulic Modeling, describes that during August and September the CBD carries high flows resulting from rice field agricultural drainage and often does not have capacity to convey reservoir releases of 1,000 cubic feet per second (cfs), which indicates that the Sites Reservoir discharge would not cause flows to go above those that already occur during the irrigation runoff season. Furthermore, the CBD hydraulic modeling described in Chapter 5 indicates that, when Sites Reservoir water would be released, the Knights Landing Outfall Gate structure would cause a backwater with a flat water surface elevation up to CBD mile 25, which would tend to cause settling of suspended sediment. As described in Chapter 5, the highest CBD flows, which are the ones likely to move the most sediment, occur during winter runoff events, when no releases would be made from Sites Reservoir. During these high runoff events, CBD water is routed through the Knights Landing Ridge Cut and into the Yolo Bypass.

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	concentrations. This will help evaluate the suitability of dredged material for beneficial use and determine compliance with water quality standards."	Contaminants adhered to suspended sediment diverted from the Sacramento River for Sites Reservoir storage are not expected to differ greatly from contaminants adhered to sediment present in the Sacramento River. Contaminants in bed sediment can affect surface water quality, but often contaminants remain bound to sediment, and water adjacent to buried sediment has limited capacity to mix with surface water. The analysis in the EIR/EIS thus takes account of sediment in evaluating potential impacts from the Project, including impacts on water quality and biological resources. In addition, the Project includes various monitoring efforts as part of the RMP as set out in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, which will be conducted in consultation with regulatory agencies and other stakeholders. This includes monitoring upstream and downstream of Sites Reservoir. Also note that sediment excavated from Funks Reservoir as described in Chapter 2, Project Description and Alternatives, suitable for beneficial use would only be used for Project purposes and would not be used in the Delta.
79-26	Recommendation: In the FEIS, include additional design BMPs that hydrologically disconnect, on a permanent basis, the associated existing and proposed new roads from the immediate reservoir watershed to prevent sediment erosion runoff into the reservoir.	Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, includes BMP-15, Performance of Site-Specific Drainage Evaluations, Design, and Implementation, which provides numerous measures for control of erosion effects, including erosion effects related to roadways. In addition, implementation of the following BMPs would also reduce potential adverse effects on water quality resulting from erosion runoff into the reservoir: BMP-12, Development and Implementation of Stormwater Pollution Prevention Plan(s) (SWPPP) and Obtainment of Coverage under Stormwater Construction General Permit (Stormwater and Non-stormwater) (Water Quality Order No. 2022-0057-DWQ/NPDES No. CAS000002 and any amendments thereto)

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		BMP-14, Obtainment of Permit Coverage and Compliance with Requirements of Central Valley Regional Water Quality Control Board Order R5-2022-0006 (NPDES No. CAG995002 for Limited Threat Discharges to Surface Water) and State Water Resource Control Board Order 2003-0003-003-DWQ (Statewide General Waste Discharge Requirements For Discharges To Land With A Low Threat To Water Quality) (BMP-14 would require compliance with the existing permits and any amendments thereto.)
79-27	Recommendation: To inform the development of a sediment monitoring plan, include an initial screening of metal concentrations in sediments as part of the project's assessment of the presence and movement of metals. Sediment monitoring in the Sacramento River at the Red Bluff Pumping Plant and Hamilton City Pump Station intakes should include a minimum level of sediment quality characterization for conventional contaminants, known PCOCs (especially bioaccumulative compounds), and baseline suspended sediment and solid-phase bioassays. Consider additional sediment monitoring locations at critical waterbody junctions along the project route to establish background levels, such as where Stony Corral Creek outflows and at the furthest downstream point of the CBD before entering the Yolo Bypass.	Please see response to comment 79-25 regarding sediment management, sediment discharges from Sites Reservoir, sediment in CBD, focus on surface water quality monitoring, and the RMP.
79-28	Recommendation: In the FEIS, set specific dredged material beneficial reuse goals consistent with the LTMS, and commit to placing material in accessible sites to promote beneficial reuse of material. Commit to testing sediment quality according to standardized and acceptable protocols, i.e., the Inland Testing Manual,[Footnote 4: https://dots.el.erdc.dren.mil/guidance.html] and evaluated against relevant sediment criteria, such as those used by the SF Bay Dredged Material Management Office for upland beneficial reuse sites. Discuss how placement of dredged material on peat soils would affect	Please see response to comment 79-7 regarding BMP-11, Management of Dredged Material, and sediment testing and beneficial reuse. It is estimated that at least 80% of dredged material from Funks Reservoir would be suitable for reuse on the Project after dewatering. Beneficial uses of this material may include pipeline backfill, Zone 4 random fill (the stockpiles would be close to Golden Gate Dam), Sites Lodoga Road embankment fill, quarry restoration, or other general fill. There is no plan for use of dredged material on peat

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	subsidence and levee stability. Proactively identify potential sites for dredged material acceptance, including already established sites such as Antioch Dunes, Montezuma Wetland Restoration Project, Cullinan Ranch Restoration Project, and Sherman Island (owned by DWR).	soils, near levees, for levee construction, or at any location in the Delta.
79-29	Climate Change Climate change is already causing severe stresses on California's water supply infrastructure and ecosystems, with hydrologic extremes (both floods and droughts) expected to worsen as storms become more infrequent and intense, and a higher proportion of precipitation occurs as rainfall in important source water basins in the Sierra Nevada mountains. Climate Effects on Project Operations While the SDEIS acknowledges the constraints California is already experiencing due to climate change, the EPA is concerned that the analysis in Chapter 28 (Climate Change) does not fully assess the effects of future climate change or support many of its assertions that climate change is likely to result in minor changes in Sites Reservoir storage and operations. The analysis uses a model centered on 2035 for hydrology and sea level rise, which, while appropriate for assessing near-term climate effects for analysis of operations of existing water infrastructure, offers less relevant insights for a proposed reservoir which is not expected to begin operating until 2030.	Please see response to comment 79-5 regarding the inclusion of WSIP 2070 (2056–2085) conditions and modeling results in Chapter 28, Climate Change, and Appendix 28A, Climate Change, of the Final EIR/EIS.
79-30	Recommendation: In the FEIS, include an assessment of effects of climate change on project operations using a planning horizon that reflects the timeline of the project, such as the "midcentury" scenario (2045-2074, centered on 2060) analyzed by DWR's Bay-Delta Office for California's Fourth Climate Change Assessment.[Footnote 5: Wang, J., H. Yin, J. Anderson, E. Reyes, T. Smith, and F. Chung. 2018. Mean and Extreme Climate Change Impacts on the State Water Project. A report for California's Fourth Climate Change Assessment CCCA4-EXT-2018-004. Accessed 21	Chapter 28, Climate Change, and Appendix 28A, Climate Change, of the Final EIR/EIS include a future climate scenario centered on 2070, which covers the period from 2056–2085. Please see Master Response 3, Hydrology and Hydrologic Modeling, for more details regarding use of CALSIM II and why it was not feasible to use CALSIM 3 (including its midcentury scenario) for the EIR/EIS.

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	January 2021 from https://www.energy.ca.gov/sites/default/files/2019-12/Water_CCCA4-EXT-2018-004_ada.pdf] As noted above, CalSim 3.0 is likely better-suited to assess impacts of climate change on project operations than CalSim-II.	
79-31	Greenhouse Gases Man-made reservoirs are a globally important source of anthropogenic greenhouse gas emissions, particularly methane. Chapter 21 (Greenhouse Gases) of the SDEIS states that quantifying greenhouse gas (GHG) emissions generated from land use change to inundated areas requires site-specific assessments which are not available until the Sites Project Authority takes control of the lands. The EPA disagrees that insufficient information is available to estimate GHG emissions from land use change; these GHG emissions may be estimated in the absence of site-specific data, using default emission factors from the International Panel on Climate Change's Guidance for National Greenhouse Gas Inventories and other publicly available data. The 2019 Refinement to the IPCC Guidance for National Greenhouse Gas Inventories [Footnote 6: https://www.ipcc.ch/report/2019-refinement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories/] includes guidance on calculating carbon dioxide and methane emissions from land converted to flooded lands (Ch. 7.3.2, p.7.20), which can be compared to estimated emissions from land-cover types already known to exist in the reservoir footprint, including wetlands and grazing lands.	The commenter is correct that reservoirs are an important source of anthropogenic greenhouse gas (GHG) emissions. In Section 21.3.1.2, Land Use Change, of Chapter 21, Greenhouse Gas Emissions, the RDEIR/SDEIS acknowledges that reservoirs contribute to global GHG emissions. For a site-specific analysis, it remains accurate that a quantification of these emissions requires "a detailed accounting of local and site-specific variables." However, the commenter is correct that a more generalized analysis that does not rely on site-specific information can be conducted. The Authority and Reclamation have conducted such an analysis, and the results are included in Appendix 21A, Greenhouse Gas Support Appendix.
79-32	Recommendation: In the FEIS, include an estimate of greenhouse gas emissions generated as a result of inundating the lands in the reservoir footprint. If site access prevents collection of site-specific data to quantify net GHG emissions, estimate net emissions using default emissions factors and other available data.	The estimated potential emissions from land use conversion are included in Appendix 21A, Greenhouse Gas Support Appendix. It remains accurate that the Authority and Reclamation cannot conduct a site-specific analysis at this time, but a more generalized analysis can be conducted.

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		The estimation of these emissions in Appendix 21A does not affect the impact significance conclusions in Chapter 21, Greenhouse Gas Emissions, because the land use conversion emissions are included in the net-zero commitment for the Project. The Authority and Reclamation have committed to meeting net-zero emissions, so the addition of the emissions presented in Appendix 21A expands the magnitude of the commitment required to achieve net zero. As noted in the RDEIR/SDEIS, however, the actual emissions quantities to be reduced will be determined on an ongoing basis using more refined data and not based on the quantities in the RDEIR/SDEIS, or Appendix 21A. Thus, the Authority will reduce these emissions per Mitigation Measure GHG-1.1 through onsite measures, offsite measures or projects, and/or GHG or carbon credits. Because Mitigation Measure GHG-1.1 applies to the land use conversion emissions and all other Project emissions disclosed in Chapter 21, the Project would result in net-zero emissions, and GHG impacts would remain less than significant.
79-33	Surface Water Quality The water quality analysis presented in Chapter 6 indicates that once constructed, Sites would likely experience impaired water quality conditions with high levels of metals, as well as warm and still water conditions conducive to the formation of harmful algal blooms (HABs). Mercury and Other Metals Methylmercury production and bioaccumulation is likely in the reservoir, Funks Creek, and Stone Corral Creek; all three waterbodies are expected to exceed the California Office of Environmental Health Hazard Assessment's 0.2 mg/kg wet weight sport fish objective (p. 6-73, 6-74). Modeling results presented in Appendix 6E suggest that Sites Reservoir concentrations of aluminum, copper, and iron would routinely approach or exceed water	This comment provides a summary of information contained in Chapter 6, Surface Water Quality. The comment is noted.

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	quality objectives for aquatic life protection, limiting the ability of Sites to provide environmental flows and benefits to receiving waterbodies as proposed. Mitigation measure WQ-1.1 outlines the proposed management of impacts of methylmercury on Sites Reservoir and receiving waters and relies on recommendations from a draft staff report [Footnote 7: Draft Staff Report for Scientific Peer Review for the Amendment to the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California, Mercury Reservoir Provisions – Mercury TMDL and Implementation Program for Reservoirs (State Water Resources Control Board 2017b)] that has not yet been approved.	
79-34	Many of the proposed mitigation measures would conflict with other measures meant to adaptively manage HABs, such as adding nitrate to stimulate algal growth or releasing water from the epilimnion (upper reservoir).	As discussed in Chapter 6, Surface Water Quality, Sites Reservoir operation would result in reservoir drawdown, reduced storage volume, and higher water temperatures from late spring through fall, particularly in Dry and Critically Dry Water Years. This would create favorable conditions for the initiation of HABs in the reservoir. If cyanobacteria and cyanotoxins were present in reservoir releases, potential downstream effects on water quality would not be expected because concentrations of cyanobacteria and cyanotoxins would be greatly diluted when eventually discharged into the Sacramento River, and cyanotoxins would undergo biodegradation and, to some degree, photodegradation. Text in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, Section 2D.3.2, Methylmercury, of the Final EIR/EIS, has been revised to eliminate consideration of the addition of nitrate as a water chemistry management action. This text revision does not result in a change to an impact determination or conclusion.

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		Please refer to response to comment 79-11 and Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower to control releases of water quality constituents.
79-35	The SDEIS proposes to delay fish stocking to mitigate methylmercury bioaccumulation in reservoir fish; however, we note that delays of planned fish stocking will likely not reduce bioaccumulation unless other measures are taken to significantly inhibit methylmercury production. We further note that unauthorized fish stocking is common in United States and may not be easily preventable once recreational facilities become operational.	The Authority and Reclamation acknowledge that unauthorized fish stocking could occur, but Sites Reservoir is located relatively remotely, which likely would constitute a deterrent to this unauthorized practice. An additional action was added to Mitigation Measure WQ-1.1 as well as to the RMP in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, to minimize potential public exposure to methylmercury through consumption of Sites Reservoir fish prior to regulated stocking of the reservoir. A fish sampling program will be implemented upon completion of the initial filling of the reservoir. Initially, a sampling program will be implemented to determine whether game fish are present (either because of unauthorized stocking or fish entrainment at the Sacramento River diversions). If it has been determined that a population of game fish has established in the reservoir, annual monitoring of Sites Reservoir fish tissue methylmercury concentrations will commence. If the 0.2 milligram per kilogram (mg/kg) sport fish objective is exceeded, fish consumption warning signs will be posted. The addition of this action to the Final EIR/EIS does not change conclusions or impact determinations identified in the analysis in Chapter 6, Surface Water Quality. Further, as indicated in Mitigation Measure WQ-1.1 in Chapter 6 and in Appendix 2D, as part of the RMP, multiple measures will be implemented to reduce mercury methylation in Sites Reservoir and, thus, bioaccumulation of methylmercury in reservoir fish. Most of the measures identified under Mitigation Measure WQ-1.1 are recommended by the State Water Board and Regional Water Quality

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		Control Boards for new reservoirs (State Water Resources Control Board 2017a). However, the degree of effectiveness of any of the identified actions to reduce mercury methylation and bioaccumulation in Sites Reservoir specifically is not known at this time. Therefore, this impact on water quality would be significant and unavoidable.
79-36	Recommendation: In the FEIS, consider the effects of higher methylmercury concentrations in Sites Reservoir and receiving waters on tribal and subsistence fisherpersons who may not be protected by the 0.2 mg/kg wet weight sport fish objective.	The Tribal Subsistence Fishing water quality objective for methylmercury (0.04 mg/kg, wet weight [ww] of skinless fish fillet [State Water Resources Control Board 2017b]) is more stringent than the California sport fish water quality objective (0.2 mg/kg ww). The Subsistence Fishing water quality objective is, at present, a narrative objective and at such a time that a water quality control plan designates a water body or segment with the Subsistence Fishing (SUB) beneficial use, a region-wide or site-specific numeric fish tissue objective would be recommended; accordingly, this water quality objective is not readily comparable to either of the aforementioned numeric objectives. In the Central Valley, the Tribal Subsistence Fishing and Subsistence Fishing water quality objectives are applicable only to waters with the Tribal Subsistence Fishing (T-SUB) or SUB beneficial use designations, respectively, of which there are none in the study area (as defined in Chapter 6). Accordingly, the Tribal Subsistence Fishing and Subsistence Fishing water quality objectives were not considered in the analysis in Chapter 6, Surface Water Quality. Text was added to Chapter 6, Section 6.3.3, Thresholds of Significance, Table 6-10 indicating this. Further, the Central Valley Regional Water Quality Control Board would need to designate specific waterbodies (such as Sites Reservoir and receiving waters) with the T-SUB and/or SUB beneficial uses for those objectives to be applicable. Because the public health analysis

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		related to methylmercury and study area fish consumption (Chapter 27, Public Health and Environmental Hazards) was based on the water quality analysis in Chapter 6, by extension, the California sport fish water quality objective for methylmercury (i.e., 0.2 mg/kg ww) was used as the threshold for evaluating significance of Sites Reservoir operations effects on water quality and public health. As indicated in Chapter 27 for Impact HAZ-6, there would be a less-than-significant impact on public health due to study area fish consumption because the California OEHHA methylmercury fish consumption advisories would continue to be implemented in the study area, and these advisories would serve to protect people against the overconsumption of fish with increased body burdens of mercury for those following these recommendations. Text was added to Chapter 27, in Section 27.2.3, Public Health Hazards Related to Methylmercury and HABs, that discusses beneficial uses of water in the state in the context of the California sportfish water quality objective and the Tribal Subsistence Fishing water quality objective. In addition, text was added to the same section adding further clarification on the OEHHA's fish consumption advisories. Text was also added to Chapter 27 for Impact HAZ-6 to add clarification that the OEHHA standards and fish consumption advisories would also serve to protect tribal and subsistence fisherpersons against the overconsumption of fish with increased body burdens of mercury. The numeric sport fish objective for Tribal Subsistence Fishing has been added to Table 6-4 and a table footnote was added indicating that the objective was not applicable to the study area because there are currently no waters in the study area with the T-SUB beneficial use designation.

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		These text additions do not change conclusions or impact determinations identified in the analysis. Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, for additional discussion of tribal beneficial uses.
79-37	Recommendation: Consider actions under mitigation measure WQ-1.1 that would prevent or inhibit mercury methylation, such as minimizing the frequency of water surface fluctuations which are known to contribute to mercury methylation, or installation of oxygenation systems in the reservoir at construction to better enable hypolimnetic oxygenation. [Footnote 8: Statewide methylmercury control program for reservoirs factsheet. California Water Boards 2013. https://www.waterboards.ca.gov/water_issues/programs/mercury/reservoirs/docs/factsheet.pdf]	As described for Mitigation Measure WQ-1.1, multiple actions would be taken to reduce mercury methylation in Sites Reservoir. While it has been shown that water level fluctuations in reservoirs have been associated with increased methylmercury in fish, the State Water Board and the Regional Water Quality Control Boards (Water Boards) do not recommend "muting water level fluctuations as an implementation option for reducing reservoir fish methylmercury levels because most California reservoirs are designed to empty and re-fill annually" (State Water Resources Control Board 2017a). Instead of requiring changes in reservoir water level fluctuations as a means to reduce mercury methylation, the Water Boards recommend "respond[ing] to the effects of water level fluctuations." In addition, text has been added to Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, of the Final EIR/EIS to note that the RMP will continue to be revised throughout the operation of the reservoir. Revisions to the RMP will account for changes to operations, site-specific conditions, adaptive management actions and decisions, and future changes to regulations or methodologies for evaluating water quality constituents. Thus, additional actions to reduce methylmercury in the reservoir in the future may considered/implemented in consultation with regulatory agencies and other stakeholders. This text revision does not change conclusions or impact determinations identified in the analysis.

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79-38	Recommendation: Provide information regarding the likelihood that Sites Reservoir would not thermally stratify due to low storage in a given year, limiting the ability to mitigate releases of methylmercury and other metals under mitigations measures WQ-1.1 and WQ-2.1	Please see Master Response 4, Water Quality, which shows modeled reservoir temperature profiles under low storage conditions and describes how stratification relates to water quality. Stratification is expected for all but the coldest portions of the year. If stratification did not occur, the reservoir would be fully mixed and aerated, and metal/methylmercury concentrations would likely not be elevated at the bottom of the reservoir and, therefore, there would be no need to implement metal/methylmercury mitigation measures that depend on stratification. Master Response 4 also contains a discussion regarding the use of the I/O tower to control releases of water quality constituents.
79-39	Harmful Algal Blooms While the EPA concurs with Chapter 6's finding that construction and operation of Sites Reservoir is likely to create conditions conducive to the formation of HABs, the conclusion that there would be no adverse effect does not appear to be supported by the analysis of HAB risks. The SDEIS characterizes HABs as dependent on specific conditions (p. 6-24); we note that these conditions only represent the optimal conditions for planktonic HABs, which can occur outside of optimal conditions, in flowing waters, and can alter buoyancy to obtain nutrients from deep waters.[Footnote 9: Graham, J.L., Dubrovsky, N.M., and Eberts, S.M., 2017, Cyanobacterial harmful algal blooms and U.S. Geological Survey science capabilities (ver 1.1, December 2017): U.S. Geological Survey Open-File Report 2016–1174, 12 p., https://doi.org/10.3133/ofr20161174.] The SDEIS does not consider the potential for benthic HABs which could occur in a reservoir such as Sites.[Footnote 10: 10 FAQ on toxic algal mats. My Water Quality: California Harmful Algal Blooms Portal. https://mywaterquality.ca.gov/habs/resources/benthic_education.html] In addition to human health risks, HABs may contribute to degradation of ecosystem structure and function by causing anoxia, bioaccumulation of	The focus of the discussion of HABs in Chapter 6, Surface Water Quality, was on planktonic HABs because cyanobacteria that produce toxin concentrations of concern for human health are typically planktonic (Chorus and Welker 2021:226). Text has been added in Chapter 6, Section 6.2.2.6, Harmful Algal Blooms, of the Final EIR/EIS to note that there are species differences regarding tolerance of cooler water temperatures, lower light levels, and flow conditions. In addition, text was added to Section 6.2.2.6 to generally describe that cyanobacterial blooms may be planktonic or benthic and noted common genera of each bloom type. These text additions are in the environmental setting and provide clarification to information contained in the document regarding HABs. These text additions do not change conclusions or impact determinations identified in the analysis. In the analysis in Chapter 6, the No Project Alternative represents the continuation of the existing conditions for the study area, in general, including the proposed reservoir site specifically. Because no reservoir exists under the No Project Alternative, a comparison between water

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	cyanotoxins in organisms, or directly causing fish mortality. [Footnote 9: Graham, J.L., Dubrovsky, N.M., and Eberts, S.M., 2017, Cyanobacterial harmful algal blooms and U.S. Geological Survey science capabilities (ver 1.1, December 2017): U.S. Geological Survey Open-File Report 2016–1174, 12 p., https://doi.org/10.3133/ofr20161174.]	quality conditions at the proposed reservoir site without the Project and water quality conditions once Sites Reservoir is filled and operational cannot be made. Accordingly, no significance determination regarding HABs in Sites Reservoir was made. However, a discussion of the potential for public health to be affected by HABs at the reservoir is presented in Chapter 27, Public Health and Environmental Hazards. The analysis for HABs in Impact WQ-2 (Chapter 6) discusses three other geographies in addition to Sites Reservoir (i.e., (1) Shasta Lake, Lake Oroville, Folsom Lake, and San Luis Reservoir; (2) Stone Corral Creek and Funks Creek; and (3) Yolo Bypass and the Delta) and the potential for HABs to substantially degrade water quality adversely affect water quality in those surface waters relative to the No Project Alternative. Sites Reservoir operations are not expected to substantially degrade water quality in those surface waters and thus a less-than-significant impact determination was made. The RMP (see Appendix 2D, Best Management Practices, Management Plans, and Technical Studies) includes monitoring for benthic HABs and coordination with the State Water Board and the Central Valley Regional Water Quality Control Board for posting benthic HABs signage. As acknowledged in Chapter 6, the decomposition of HABs could potentially cause a temporary reduction in dissolved oxygen (DO) in the reservoir. Potential DO effects on water quality would be less than significant, as described under Impact WQ-2. Text in the environmental setting as well as in the analysis for Impact WQ-2 indicates that DO levels can be adversely affected by high biological oxygen demand (see Section 6.2.2.3, Nutrients, Organic Carbon, and

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		Dissolved Oxygen, in Chapter 6) and that there may be a temporary reduction in DO levels in Sites Reservoir with die-off of cyanobacteria and algae (Impact WQ-2). The magnitude of the reduction in the reservoir would depend on the magnitude of the die-off. Any temporary reduction in DO within the reservoir would be an effect on the Project itself, rather than an effect from the Project on the surrounding environment. Please refer to Master Response 2, Alternatives Description and Baseline, regarding the baseline used and the comparison of potential effects of the Project to that baseline (i.e., the No Project Alternative). Low DO concentrations in the hypolimnion in Sites Reservoir due to summer thermal stratification would not have any downstream effects on beneficial uses or water quality. Any releases made from this depth would be expected to become amply aerated once released and conveyed through Funks Reservoir and the TC Canal or through the TRR and the GCID and further downstream. Section 6.2.2.6, Harmful Algal Blooms, in Chapter 6 notes the potential for bioaccumulation of cyanotoxins in certain food crops, as well as in fish and shellfish. Chapter 11, Aquatic Biological Resources (Contaminants subsection Section 11.2.3, Delta and Suisun Bay/Marsh), generally describes the potential toxic effects of Microcystis aeruginosa on the environment, and Impact FISH-8 provides a discussion of potential Microcystis bloom effects on delta smelt as a result of implementing Alternatives 1, 2, or 3. The potential impacts of HABs on the Delta and effects on aquatic organisms are acknowledged and described in Chapter 11. As described in Chapter 11, there would be little difference in HABs potential between the No Project Alternative and Alternatives 1, 2,

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		and 3 in the Delta, and thus Delta fish species (Impacts FISH-8 and FISH-15) are unlikely to be affected. The same is expected for the Sacramento River downstream of Sites Reservoir where releases would be greatly diluted and cyanotoxins potentially originating from the reservoir would also be subject to biodegradation, and for the Colusa Basin Drain, which receives water from multiple sources downstream of the reservoir (including substantial agricultural flow returns) in addition to what is anticipated to be limited and intermittent flows from Sites Reservoir through Stone Corral Creek and Funks Creek. As explained in Chapter 6, Impact WQ-2, potential impacts from HABs are less than significant. Nevertheless, the Project will implement a comprehensive Aquatic Study Plan, and the RMP will include adaptive management of the reservoir releases (see Section 2D.4, Stone Corral Creek and Funks Creek Aquatic Study Plan and Adaptive Management, and Section 2D.3, Reservoir Management Plan, in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies) that, combined, will ensure fish are maintained in good condition in compliance with California Fish and Game Code 5937. Besides standard water quality parameters, the Authority and Reclamation have added cyanobacteria and cyanotoxins analyses to the Surface Water Ambient Monitoring Program component of the Aquatic Study Plan. Moreover, potential HAB-related impacts on Stone Corral Creek and Funks Creek would depend on the timing and volume of releases, which will be determined and adaptively managed based on results from the technical studies of the Aquatic Study Plan and performance standards developed in conjunction with the relevant agencies, including California Department of Fish and Wildlife (CDFW) and USFWS, to ensure HABs impacts remain less than

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		significant. In addition, the RMP HAB monitoring program and action plan will also contribute to inform management of releases from Sites Reservoir to Stone Corral Creek and Funks Creek. It is anticipated that the flows to these creeks will be managed to reflect the historical hydrograph and seasonal conditions as characterized by the aquatic studies. Sites Reservoir releases will thus likely occur in late fall, winter, and early spring at times when HABs are less likely to occur in the reservoir. Releases to the creeks could be curtailed if, relative to baseline conditions in the creeks, high concentrations of cyanobacteria or cyanotoxins were present in the reservoir release. As for potential HAB impacts on aquatic communities in the reservoir itself, please refer to the response to comment 79-42.
79-40	Table 6-20 presents unadjusted average monthly temperatures derived from CalSIM outputs to assess when warm reservoir temperature conditions would support HABs; we note that this data is inappropriately applied since stratification would support warmer surface temperatures from early summer well into the fall. The SDEIS also incorrectly asserts that microcystin and other cyanotoxins would undergo rapid photodegradation and would be unlikely to affect downstream waters (p. 6-92); cyanotoxins produced in reservoir HABs commonly persist for weeks or months, and cyanobacteria released into downstream waters can travel downstream to inoculate receiving waterbodies. [Footnote 11: Otten, T.G., Crosswell, J.R., Mackey, S. and Dreher, T.W., 2015. Application of molecular tools for microbial source tracking and public health risk assessment of a Microcystis bloom traversing 300 km of the Klamath River. Harmful Algae, 46, pp.71-81.]	The modeled water temperatures presented in Chapter 6, Surface Water Quality (Table 6-20 of the RDEIR/SDEIS as cited by the commenter), are monthly average near-surface temperatures; they are not the monthly average temperatures for the reservoir water column. The table title has been revised to add clarification. Text related to photodegradation was revised for clarity as it is generally biodegradation that can occur relatively rapidly once the biodegradation process has started and not photodegradation, which was already made clear in Section 6.2.2.6, Harmful Algal Blooms, of Chapter 6. These text revisions do not change conclusions or impact determinations identified in the analysis. It is acknowledged in the Chapter 6 impact analysis that cyanobacteria and cyanotoxins could potentially be released from the reservoir. Even given this potential, and the potential for cyanobacteria to be transported downstream, it would be speculative to indicate that these cells would result in substantial effects

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		downstream relative to the No Project Alternative (e.g., result in increases in HABs or affect drinking water quality) given the multiple environmental variables that are required to stimulate bloom formation and maintenance in surface waters. Cyanobacteria are essentially ubiquitous in freshwater and marine environments but do not always result in adverse environmental or public health effects simply due to their presence. In addition, please refer to Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower to control releases of water quality constituents.
79-41	No separate mitigation measures are proposed to manage HAB impacts, although the Reservoir Management Plan (p. 2D-30) describes a general HAB monitoring plan and actions to be taken to protect public health if trigger criteria are exceeded, including releasing water from deeper in the reservoir. Throughout the bloom season, monitoring for cyanobacteria species and cyanotoxins is critical to ensure appropriate protective measures are in place to address the cyanobacteria species and cyanotoxin concentrations present.	The commenter generally refers to the RMP (Appendix 2D, Best Management Practices, Management Plans, and Technical Studies) as it pertains to HABs in the RDEIR/SDEIS. Please note that, as indicated in the HABs Action Plan (Appendix 2D, Section 2D.3.1, Harmful Algal Blooms), if HABs become a consistent problem near the I/O tower, additional measures may be implemented to manage HABs and/or reduce the potential for release of high concentrations of cyanobacteria and cyanotoxins from Sites Reservoir. As described in Appendix 2D, Section 2D.3.1, of the Final EIR/EIS, monitoring for benthic and planktonic HABs will occur monthly, at a minimum, beginning April 1 and continue through November, if confirmed blooms are still present at the end of October. This time period is generally consistent with the "bloom season" for HABs in the Central Valley, which is late spring through early fall (Central Valley Regional Water Quality Control Board 2019b). Please note that text originally referring to an April 15 through October monitoring period in Appendix 2D has been revised accordingly. This revision does not change conclusions or impact determinations identified in the analysis.

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		Please refer to the response to comment 79-37 regarding adaptive management of the RMP and the associated text addition to Appendix 2D of the Final EIR/EIS noting this. This revision does not change conclusions or impact determinations identified in the analysis.
79-42	Recommendation: In Chapter 11 of the FEIS, update Impact FISH-18 to include an assessment of the effects of HABs and resulting anoxia on reservoir fish in Sites Reservoir.	There are currently no federal or state regulatory standards for cyanotoxins in recreational or drinking waters, and the voluntary guidance developed by state agencies and the USEPA is geared toward human exposure, not to the exposure of aquatic organisms (Chapter 6, Surface Water Quality, Section 6.2.2.6, Harmful Algal Blooms). Please refer to Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, for a description of the RMP, which includes a discussion of when, whether, and what species may be introduced to Sites Reservoir. There are several measures incorporated in the RMP to mitigate exposure to and accumulation of methylmercury in recreational fish. These measures will help mitigate the effect of HABs on stocked fish species. The appendix also includes a planned HABs monitoring and HABs action plans under the operation of the reservoir, which would be applicable to reservoir fish. Also, see the HAB discussion in Master Response 4 for a discussion of measures to reduce the formation of HABs and mitigate their effects.
79-43	Recommendation: Revise the Reservoir Management Plan to improve HAB monitoring. We recommend monitoring occur more frequently than monthly near the start of the bloom season to identify blooms, implement management measures as quickly as possible and extend monitoring until the bloom ends, usually occurring upon reservoir turnover in late fall/early winter (not October as speculated on p. 2D-31).	The following recommended revisions have been made in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, of the Final EIR/EIS: • Monitoring will begin 2 weeks earlier than identified in the RDEIR/SDEIS (i.e., monitoring will begin April 1 instead of April 15).

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	Base the assessment of the presence of cyanobacteria on: • cell density OR cyanotoxin concentrations as trigger levels (not "and" as is proposed). • both planktonic (water column) and benthic HABs; • other indicators of benthic HABs, beyond confirmation by microscopy, such as the observation of benthic HABs or detached mats, or the detection of cyanotoxins characteristic of benthic HABs (e.g., anatoxin-a). • California Cyanobacteria and Harmful Algal Bloom Network Trigger Levels,[Footnote 12: California Guidance for Cyanobacteria HABs in Recreational Inland Waters, https://mywaterquality.ca.gov/habs/resources/habs_response.html] as amended, or updated. The California Water Quality Monitoring Council periodically updates the guidelines and trigger levels to reflect evolving understanding of HABs.	• Monitoring will continue through November if confirmed blooms are still present at the end of October. This is 1 month longer than originally proposed in the RDEIR/SDEIS. • Clarification was added that with confirmation of the presence of toxic cyanobacteria in suspected blooms, visual and water quality monitoring will continue weekly until cell density and cyanotoxin concentrations at any monitored location reaches the "Caution" action trigger level. • Monitoring and water sampling frequency as part of the HABs Action Plan was increased from biweekly to two times per week, or as advised based on coordination with the State Water Board and/or Central Valley Regional Water Quality Control Board, when the "Caution" action trigger level is reached. • Cell density OR cyanotoxin concentrations as trigger levels (not "and" as is proposed). • Text referring to planktonic HABs posting guidance in Table 2D-2 has been revised to indicate that amendments or updates to those trigger levels would be used to determine if and when planktonic advisory signs at Sites Reservoir are necessary based on reservoir water quality. • Where benthic HABs are confirmed, composite samples, consisting of multiple portions of different algal mats, will be collected for toxin analysis. • The RMP includes monitoring for benthic HABs and coordination with the State Water Board and the Central Valley Regional Water Quality Control Board for posting benthic HABs signage. As noted in Appendix 2D of the Final EIR/EIS, the RMP is, and will continue to be, revised throughout the operation of the reservoir. Revisions to the RMP will account for changes to operations, site-

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		specific conditions, adaptive management actions and decisions, and future changes to regulations or methodologies for evaluating water quality constituents. Refinement of the RMP may occur during consultation with agencies.
79-44	Recommendation: In the FEIS, identify criteria to determine the appropriate depth to avoid HAB releases and describe how these multiple factors will be balanced and prioritized if no single depth interval meets release criteria for temperature, HABs, and metals. Describe how appropriate depth levels for water releases from the Sites I/O works will be determined in a way that allows for providing warm epilimnetic water for rice production while avoiding releasing cyanobacteria and cyanotoxins (likely to occur in the epilimnion during rice growing season) and avoiding releases of methylmercury and other metals (likely to occur in higher concentrations in the hypolimnion).	Please refer to Master Response 4, Water Quality, for a discussion regarding the use of the I/O tower to control releases of water quality constituents. Please see response to comment 79-41 regarding the RMP and HAB monitoring. In addition, as mentioned in response to comment 79-37, text has been added to the HABs Action Plan component of the RMP to include water sampling at multiple depths near the I/O tower if visual monitoring indicates that there is a bloom near the tower. These revisions to Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, do not change conclusions or impact determinations identified in the analysis.
79-45	Temperature Effects on Native Salmonids As noted in the EPA's 2018 letter on the Sites DEIS, operation of the proposed reservoir could affect temperature-dependent mortality of Endangered Species Act (ESA) listed fish species in the Sacramento River and its tributary streams, including Chinook salmon. Exchanges with Lake Shasta and Lake Oroville could help maintain the cold water pool needed to support salmonid spawning and rearing habitats, and a robust analysis of the project's potential effects on temperature-dependent mortality is critical for understanding potential benefits of improved temperature conditions for salmonids.	A robust analysis evaluating temperature-dependent mortality using several lines of evidence and multiple analytical tools is prepared for salmonids in Chapter 11, Aquatic Biological Resources, under Impacts FISH-2, FISH-3, FISH-4, and FISH-5. As described in Appendix 11B, Upstream Fisheries Impact Assessment Quantitative Methods, and summarized in Table 11B-1, the multiple lines of evidence used include physical model outputs characterization, water temperature index value/range analysis, Martin and Anderson egg mortality models, and the temperature-related portions of SALMOD outputs. This evidence is based upon peer-reviewed literature and tools, as described in the methodology sections of Appendix 11B, Upstream Fisheries Impact Assessment Quantitative Methods.
79-46	The EPA is concerned that the temperature analysis presented in Chapter 11 (Aquatic Biological Resources) and Appendix 11D (Fisheries Water Temperature Assessment) relies on models – Interactive Object-Oriented Simulation (IOS) and Oncorhynchus Bayesian Analysis (OBAN) – that are	The temperature analysis results do not conflict because the analysis is evaluating different aspects of exceedance above the index values. The frequency of exceedance measures the proportion of days or months (depending on modeling time step) that exceed the index

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	proprietary and not transparent and may not be as robust as other available models, such as NOAA's Winter Run Life Cycle Model (WRLCM). There also appear to be multiple instances where Appendix 11D gives apparently conflicting results with a higher number of days exceeding temperature thresholds yet lower or unchanged average temperatures, or vice versa (for example, see Tables 11D-3, 11D-80, 11D-86, 11D-164). As noted above, EPA also has concerns about the robustness and responsiveness of the CalSim-II operations modeling approach which underlies much of the analysis presented in the SDEIS. Understanding the effects of climate change on temperature-dependent mortality in ESA listed salmonids is critical to understanding the potential effects of the project, but CalSim-II modeling has a temporal scale ending in 2003, prior to the 2012-2016 drought and ongoing drought which have resulted in significant salmon mortality.	value for each model scenario and then computes the difference between model scenarios. The magnitude of exceedance calculates the mean magnitude of exceedance above the index value on days or months (depending on modeling time step) that exceed the index value and then computes the difference in mean exceedance between model scenarios (in degrees per day). Because all CALSIM-based analyses are meant to be relative, the differences in frequency and magnitude between scenarios are the focus of the analysis, not individual magnitudes and frequencies. It is possible that the frequency of exceedance in one model scenario is higher than in another scenario, and the mean magnitude of exceedance is lower. An example is a model scenario in which temperatures slightly exceed the index value in many years as compared to a scenario with a few years in which temperatures greatly exceed the index value. This is the reason that the analysis considers both the frequency and magnitude of exceedance. Please see Master Response 3, Hydrology and Hydrologic Modeling, regarding the use of CALSIM II and best available information. Please refer to Master Response 5, Aquatic Biological Resources, for a discussion about use of the best available tools, including OBAN and IOS, and why WRLCM was not used.
79-47	The SDEIS concludes that there would be no adverse effect on native salmonid species, which appears to be unsupported by the modeling results presented in Chapter 11 and Appendix 11D. The modeling results are presented as monthly averages, which may reduce the impact of high values and could suppress real temperature trends, in particular trends occurring across temperature transition months (e.g., April-May and October-November). We are also concerned that the modeling results are presented as single values without confidence intervals – all models have	Temperature modeling results in Appendix 6C, River Temperature Modeling, are presented in several ways: in tables showing values for probability of exceedance in 10% intervals by month, as well as means for each water year type by month; in figures as monthly means by month; and in exceedance plots by month. Due to model limitations and inherent uncertainty, the modelers recommend showing the results by month and not by day to avoid a sense of false precision in the results.

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	inherent uncertainty and knowing the range of plausible values is critical for risk evaluation and disclosure to the public and decision-makers.	Regarding the use of confidence intervals, the probability-of-exceedance statistics and exceedance plots allow the reader to view the variation within means. This is typically done by month and water year type, allowing the reader finer resolution than just providing a single mean value. The analysis of potential temperature effects on fish species relies on many more tools than monthly average temperatures when available. Analyses in the Sacramento and American Rivers were conducted at a daily time step, including the temperature index value analysis, IOS, OBAN, and the Anderson and Martin egg mortality models. Analyses for the Feather River were conducted at the monthly time step of the Reclamation Temperature Model. All analyses used a comparative approach by assessing effects of each alternative relative to the No Action Alternative to account for the uncertainty in the model outputs. Please see Master Response 5, Aquatic Biological Resources, for more information regarding the use of best available tools, monthly versus daily model outputs, mean values, and uncertainty.
79-48	Although the tables in Appendix 11D and the assessment in Chapter 11 consider the relative increase of thermal stress of the Alternatives, there does not appear to be a robust quantitative description of the level of thermal stress expected on salmon or the other fish species under the no action alternative. Such information provides critical context on the overall impact that would occur as a result of the alternatives. While it is useful to understand how project alternatives will affect temperature relative to the no-action alternative, understanding baseline and future temperature stress	The temperature index value analysis evaluates the No Action Alternative relative to existing index values that typically represent thresholds of mortality, optimal ranges, and other known biologically relevant temperature ranges compiled from the scientific literature. Please see the full description of the analysis in Appendix 11B, Upstream Fisheries Impact Assessment Quantitative Methods, Section 11B.1.2.2, Water Temperature Index Value Analysis. With the analysis of each alternative, these results are reported for each species and life

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	on native fish is crucial to contextualizing project impacts and evaluating potential tipping points.	stage evaluated in Appendix 11D, Fisheries Water Temperature Assessment. In addition, Appendix 11A, Aquatic Species Life Histories, reports baseline information for each fish species, including baseline thermal conditions. Please also refer to Master Response 5, Aquatic Biological Resources, for additional information about baseline and special-status species.
79-49	Recommendation: Clarify the apparently conflicting model results in Appendix 11D and consider analyzing temperature effects on fisheries using an alternative modeling approach, such as the WRLCM. The WRLCM's strengths include significant transparency (including documentation of stakeholder input on model development and applications), state of the art temperature dependent mortality modeling, highly detailed modeling of Yolo Bypass, and high frequency data of Delta tidal and export conditions in assessing passage and survival.	Please refer to Master Response 5, Aquatic Biological Resources, for a discussion about use of the best available tools, including OBAN and IOS. Master Response 5 includes a discussion about why WRLCM was not used. As mentioned in Master Response 5, the Authority and Reclamation will work with National Marine Fisheries Service (NMFS) to run WRLCM during the permitting process.
79-50	Recommendation: Conduct a temperature analysis over the period from 2003 to present, in addition to the period presented in Chapter 11 and Appendix 11D. This more recent hydrograph information is likely more representative of future conditions and could provide more accurate information on instream temperature and extent and frequency of temperature impacts. Additionally, given the greater resolution of a shorter period, analysis of 2003 to present would likely provide greater model response.	Please refer to Master Response 3, Hydrology and Hydrologic Modeling, for a discussion of the adequacy of the modeling period (spanning from Water Years 1921–2003) considered in the RDEIR/SDEIS. With respect to modeling recent years, CALSIM II is the best available tool for conducting an effects analysis for the Project (see Master Response 3 for more detail). As CALSIM II does not extend beyond 2003, there are not means for quantitatively analyzing reservoir operations in the Sacramento River watershed. Without reservoir operations data, Sacramento River flow and temperatures cannot be calculated.

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79-51	Recommendation: Present modeling results averaged over a shorter timeframe in the FEIS for April-May and October-November. Regardless of which biological models are used, include in the assessment results an analysis of uncertainty with confidence intervals or some other measure of the range of plausible output values.	The presentation of results of the temperature index analysis in Appendix 11D, Fisheries Water Temperature Assessment, spanned more than 300 tables and 635 pages. Adding additional results to this appendix would double those values. The analysis does split individual months into Water Year types, and the number of years within each Water Year type ranges from 11 to 26 years. Thus, some finer resolution, in addition to an average across the 82 years, is provided. Regarding providing a measure of variability within average values, all water temperature model outputs are presented in Appendix 6C, River Temperature Modeling. For each alternative and model output location, several probability-of-exceedance statistics are provided within each month, in addition to monthly means by Water Year type and for the full simulation period. Please refer to Master Response 5, Aquatic Biological Resources, for additional discussion regarding uncertainty.
79-52	Recommendation: Describe the level of thermal stress expected under the no-action alternative (NAA) as compared to known species life stage temperature thresholds used in the Appendix 11D. Such an analysis of existing thermal stress (i.e., comparison of the temperatures under the NAA to the temperature thresholds) should also be considered for the more recent period of 2003 to the present (see above comment).	Please see response to comment 79-48 for an explanation of where to find the description of thermal stress level expected under the No Action Alternative. Please see response to comment 79-50 regarding the suggestion to include 2003 to present in the modeling.
80-1	We are opposed to the project draft environmental document and cannot support your project.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
80-2	The Trinity River, its fisheries and habitats including cold water, need to be addressed. The Trinity River already loses too much natural flow to Whiskeytown, Keswick and beyond with no compensation to our county, fisheries or wildlife. In the past, during many long, dry years river flows have	Please see Master Response 8, Trinity River, regarding the Trinity River.

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	been inadequate for our coldwater fisheries and those downstream needs including up & downstream migration; even though flow regulators have attempted corrections to problems.	
80-3	We are concerned that the draft EIR-EIS language is not clear enough to address protection of our Trinity River. In addition, we do not believe any high water flows should be sent to the Sites Reservoir Project until our Trinity and Lewiston Lake levels are adequate for more viable recreation, lake and river fisheries and other wildlife uses, including downstream. The consequences of Trinity River water leaving the county during the "more recent" severe drought years are painfully obvious. We also believe that many local Trinity County residents are unaware of this project's probable impacts to the river as the postings were vague.	Please see Master Response 8, Trinity River, regarding the Trinity River. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
81-1	We [NOAA-NMFS] are writing in regards to the Sites Project Authority and U.S. Bureau of Reclamation Supplemental Draft Environmental Impact Statement/Revised Environmental Impact Report (SDEIS/REIR) for the proposed Sites Reservoir and associated facilities (Project). NOAA's National Marine Fisheries Service (NMFS) has reviewed the draft document and is providing technical assistance comments as they relate to anadromous fishes under our jurisdiction. As a Cooperating Agency under the National Environmental Policy Act (NEPA), we have agreed to work closely with you in evaluating key sections of the SDEIS/REIR and to provide feedback regarding its level of analysis. We also identify elements of the Project that will need further scrutiny during the development of a Biological Assessment and materials required for the initiation of consultation pursuant to section 7 of the Endangered Species Act (ESA). As such, we view the analyses presented in the SDEIS/REIR as foundational for any additional analyses necessary to support the ESA consultation for the proposed action. NMFS is submitting the attached comments regarding the Project Description, Environmental Analysis, Cumulative Effects, Surface Water Quality, Climate Change, Fluvial Geomorphology and Aquatic Biological	The Authority and Reclamation appreciate National Oceanic and Atmospheric Administration–National Marine Fisheries Service's (NMFS') engagement on the Project. The Authority and Reclamation acknowledge the various authorities of NMFS and have ongoing coordination with NMFS. The process for coordination under NEPA and the Endangered Species Act that the commenter notes is identified in Chapter 4, Regulatory and Environmental Compliance: Project Permits, Approvals, and Consultation Requirements.

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	Resources. We appreciate the opportunity to comment on this important document and for continued engagement. If you have any questions regarding our input, please contact me at_ cathy.marcinkevage@noaa.gov and (916) 930-5648 or Stephen Maurano of my staff at stephen.maurano@noaa.gov and (916) 930-3710.	
81-2	Page 2-23 Has the likelihood of development around the reservoir (either planned or potential) been analyzed to determine the impacts to reservoir operations and water quality? Planned and potential recreational developments around the reservoir are noted in the project description (e.g. Peninsula Hills, Stone Corral, and a potential additional Glenn County access point) but the RDEIR/SDEIS doesn't specify whether there are any plans for additional real estate development (concessions, lodging, etc) in the watershed, or conversely, easements that would prevent future development. The current land use designation (pages 14-3 to 14-6) include agricultural uses (livestock and ranching operations, dry land farming, intensive agricultural production and agricultural processing) in addition to automotive, hotel, restaurant and retail uses. These land uses can create substantial stormwater and wastewater loadings with elevated nutrients, metals, and other pollutants. How will land use be managed in the areas draining to Sites Reservoir to maintain water quality or the impacts mitigated to reduce the pollutant loadings?	Chapter 32, Other Required Analyses, describes the potential for growth to occur around the proposed reservoir: "Growth does not necessarily result from a single project or factor in a community. Local governments primarily manage growth within their jurisdictions; however, other variables also influence the location and timing of growth, such as the availability and cost of developable land; local, state, and national economic cycles; loan interest rates; housing availability; employment opportunities; education opportunities; availability of health care; and natural amenities... Privately owned parcels surround the reservoir in Glenn and Colusa Counties and are mainly designated as foothill agriculture with supporting zoning. The primary uses of these lands are grazing and agricultural. By virtue of this zoning and land use designations any future development would be highly restricted and would ultimately require zoning or land use designation changes reviewed and approved by local governments. Operation and maintenance of Alternative 1, 2, or 3 would not result in growth inducement." Chapter 6, Surface Water Quality, Impact WQ-6 Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff discusses water quality of stormwater under construction and operation of Alternative 1, 2, or 3, including construction and operation of the proposed recreation areas. Chapter

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		6 identifies that "Sediment and other pollutants in stormwater runoff would be reduced or avoided through implementation of BMP-12, Development and Implementation of Stormwater Pollution Prevention Plan(s) (SWPPP) and Obtainment of Coverage under Stormwater Construction General Permit (Stormwater and Non-stormwater) (Water Quality Order No. 2022-0057-DWQ/NPDES No. CAS000002 and any amendments thereto), as well as postconstruction erosion control measures. In addition, BMP-15, Performance of Site-Specific Drainage Evaluations, Design, and Implementation, will require site-specific drainage evaluations/studies that will consider design flows of existing facilities that would be crossed by Project features and develop strategies to ensure equivalent functioning of the existing drainage systems during construction and after construction." Chapter 6 also identifies that: "Runoff volume would be relatively small compared to receiving water volume given the potential size of impervious surfaces and the implementation of the SWPPPs and drainage evaluations. Polluted runoff potentially generated by new impervious surfaces would be reduced or avoided through implementation of site-specific SWPPPs and the development and implementation of drainage evaluations. Operation of Alternative 1, 2, or 3 would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff."
81-3	Page 2-30 The project description asserts that, "The Project would not affect or result in changes in the operation of the CVP, Trinity River Division facilities (including Clear Creek)." However, it also states that, "The proposed operation of the Project includes exchanges of water with the CVP and SWP." More specifically, in the description of surface water resources (page	Please refer to Master Response 8, Trinity River, regarding the ability to divert CVP water into Sites Reservoir, the protection of existing water rights, Reclamation's investment in the Project, and the scope of analysis with regard to the Trinity River system. Trinity River origin water is water appropriated under Reclamation's CVP water rights and would not be stored in Sites Reservoir under the Project. The Project

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	5-11) it specifies that, "Sites Reservoir would operate in conjunction with the operations of Shasta Lake, and flows in the Sacramento River downstream of Shasta Lake would be affected by Sites Reservoir diversions and releases." According to the US Bureau of Reclamation Great Basin Digital Library, "The Shasta and Trinity River Divisions catch the headwaters of the network of Central Valley Project waterways and channel the water southward. Both divisions are part of the Central Valley Project. They are close to each other, with the Shasta Division on the Sacramento River about 10 miles north of Redding and the Trinity River Division on the Trinity River about 25 miles northwest of Redding. Surplus water from the Trinity River Basin is stored, regulated, and diverted through a system of dams, reservoirs, tunnels, and powerplants into the Sacramento River for use in water-deficient areas of the Central Valley Basin. Water is used for irrigation, power generation, navigation flows, environmental and wildlife conservation, and municipal and industrial needs." In short, Trinity River and Clear Creek operations are closely tied to Shasta and other CVP operations. If, as stated, Sites Reservoir will affect Shasta operations, then it has the clear potential to also improve, or exacerbate, conditions on the Trinity River and Clear Creek. Given the assertion that Sites Reservoir "would not affect or result in changes in the operation" of the Trinity River Division, what assurances are there that interbasin transfers from the Trinity River will not be stored in Sites Reservoir, either directly or via exchanges?	does not propose and would not result in any statutory, legal, contractual, or operational changes in the Trinity River system. Master Response 3, Hydrology and Hydrologic Modeling, describes how Shasta Lake exchanges would occur in years when forecasted temperature-based mortality of early life stage winter-run Chinook salmon (Oncorhynchus tshawytscha) would be reduced by a Shasta Lake exchange. In the spring of Shasta Lake exchange years, Sites Reservoir would release water for CVP uses in lieu of Shasta Lake. As Sites Reservoir is releasing for CVP uses, Shasta Lake releases would be reduced, preserving Shasta Lake storage and its cold-water pool through the spring (April through June).
81-4	Page 2-30 What is the basis for the cessation of the Bend Bridge Pulse Protection after 7 days (followed by the requirement for 3-day trailing average of low flows)? If flows remain elevated (for example if there are consecutive or prolonged events that increase river flow, and/or if fish remain present in high numbers) Sites Reservoir withdrawals could lead to adverse fisheries impacts. There is also a problematic lag time in the proposal resulting from the choice to use a 3-day trailing average combined with the delay inherent	The cessation of pulse protection after 7 days is based on the premise that most juvenile fish move in association with the rising limb of a hydrograph (e.g., see del Rosario et al. 2013 and Poytress et al. 2014). The measure is designed to let fish moving on the rising limb pass the diversion locations without exposure to diversions. Fish that move later during prolonged flow events would be protected by the state-of-the-art fish screens at the diversions. The pulse protection measures have been modified so that they are now based on a

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	in monitoring (to detect fish or flow events) before initiating protection. NMFS suggests that methods be developed to implement a Bend Bridge Pulse Protection proactively, to protect fish presence and movement earlier, especially on the ascending limb of the hydrograph. For example, predictive models could use historic hydrology and fish presence data to determine what flows will likely mobilize fish. Hydrologic, meteorologic and operations tools (e.g. from the USBR Shasta & Trinity River Division and the California Nevada River Forecast Center) can be used to forecast operations, rainfall and flow at Bend Bridge. A proactive Bend Bridge Pulse Protection could be especially important for earlier migrants in the first pulse after a drier period, as well as for later migrants facing small windows of suitable outmigration conditions. More generally, protecting the life history diversity in outmigration timing is key to salmonid population viability.	forecasted pulse from the National Oceanic and Atmospheric Administration's California Nevada River Forecast Center. Please see Master Response 2, Alternatives Description and Baseline, for a description of the refinements made to Project operations, including refinements to Bend Bridge Pulse flows. The Authority has identified the pulse protection measure as an element of its adaptive management plan and intends to work closely with the fishery agencies to investigate methods of improving the criteria to ensure the benefits of pulses are achieved without unnecessarily diminishing diversions.
81-5	Page 2-31 The project description (page 2-31) estimates that Sites Reservoir annual diversions will range from 60-390 TAF attempting to fill a 1.3-1.5 MAF reservoir. The surface water resources analysis (page 5-29) reports that storage levels are expected to be greater than 1 MAF during wet conditions but could drop below 225 TAF during the fall of Critically Dry Water Years (Table 5-17). Will Sites be filled with other sources of water such as groundwater or other surface water rights not accounted for in the 60-390 TAF of diversions described above? Are the dead pool storage assumptions (120 TAF under the preferred alternative per page 5A1-27) already calculated into the 225 TAF referenced above? In summary, is it anticipated that Sites would be left with less than 105 TAF of accessible water during the Fall of Critically Dry Water Years?	Sites Reservoir would be mainly filled with diversions from the Sacramento River, as noted in Chapter 2, Project Description and Alternatives, in the subsection titled Diversion to Sites Reservoir under Section 2.5.2.1, Water Operations. The Project would only divert water as identified in the water right for the Project. The Project would not use groundwater. The dead pool storage assumptions are calculated into the Sites Reservoir storage results presented in the EIR/EIS. Sites Reservoir may be drawn down below the operational dead pool in drought situations. In fall of Critically Dry Water Years, it is expected that Sites Reservoir storage would be low. As described in Master Response 2, Alternatives Description and Baseline, dead pool storage is 60 thousand acre-feet (TAF) in the Final EIR/EIS. Sites Reservoir's main release years and season are Dry/Critically Dry Water Years and summer, respectively.
81-6	Page 2-31 The project diversion criteria sets bypass flows of 3,250 cfs at Red Bluff Pumping Plant and 4,000 cfs at Hamilton City Pump Station. NMFS would	The bypass flow criteria at Red Bluff Pumping Plant and Hamilton City Pump Station are only two of several criteria that must be achieved before Sites Reservoir may divert. The entire set of these criteria is

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	suggest developing criteria beyond these minimum static flows. Targets should better reflect the intra-annual and inter-annual variability of a natural hydrograph with criteria that vary by season and water year. The criteria should also take into consideration Reclamation's Fall Base flows (e.g. when Shasta Storage is ≤ 2.2 MAF, flow is 3,250 cfs; ≤ 2.8 MAF, flow is 4,000 cfs; ≤ 3.2 MAF, flow is 4,500 cfs; > 3.2 MAF, flow is 5,000 cfs).	provided in Chapter 2, Project Description and Alternatives, in the subsection titled Diversion to Sites Reservoir under Section 2.5.2.1, Water Operations, and also described in Master Response 2, Alternatives Description and Baseline.
81-7	Page 2-36 The project description states that in late summer and fall (i.e., August through November) Reclamation would release water from Shasta Lake and/or the CVP share of Sites Reservoir for Storage Partners. It should be noted, however, that releases in this time period can have adverse impacts on salmon spawning, rearing, redd dewatering, and stranding. In short, the exchanges for Cold Water Pool maintenance could exacerbate the challenge of stabilizing flows to prevent stranding and redd dewatering.	Potential effects of Alternatives 1, 2, and 3 on spawning and rearing habitat of all salmonid species in the Sacramento River downstream of Shasta Lake, including water temperature, spawning and rearing habitat availability, redd dewatering, and juvenile stranding, are analyzed and discussed in Chapter 11, Aquatic Biological Resources.
81-8	Pages 2-56, 60 The document states that, "Alternative 1 is the Authority's preferred alternative" but also that, "...two options have been identified under this alternative." Which sub-alternative ("1A" or "1B") is preferred? Additionally, the lack of clarity regarding CVP/SWP operation agreements with Sites Reservoir creates uncertainty in the modeling assumptions and the effects determinations. The preferred alternatives (including the specific sub-alternative) and the responsible federal agency for operations and ESA consultation should be identified as soon as possible.	Alternative 1 includes a range of potential investment by Reclamation. For the purposes of modeling, two options have been identified under this alternative. Alternative 1A includes no Reclamation investment and Alternative 1B includes up to 7% Reclamation investment, which equates to about 91,000 AF of storage allocation dedicated to Reclamation in Sites Reservoir. The modeling for no Reclamation investment (Alternative 1A) and up to 7% Reclamation investment (Alternative 1B) provides the range of potential impacts of Alternative 1. Alternative 3 has been identified as the Authority's preferred alternative in the Final EIR/EIS. Please see Master Response 2, Alternatives Description and Baseline, regarding the preferred alternative.
81-9	Page 31-40	Chapter 3, Environmental Analysis, describes the requirement and approach to defining the No Project Alternative for the EIR/EIS. The

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	NMFS recommends using a future scenario that includes reasonably foreseeable projects and climate conditions for 2030, which is the earliest that the Project will be operational. In addition, the cumulative impacts note that the Delta Conveyance Project is reasonably foreseeable (pg 31- 40), but it isn't explicitly included in the baseline (using the rationale that it would have to meet future regulatory requirements and the Sacramento River and Delta flows are already highly altered and regulated). The cumulative impacts analysis explains that, "Given the mixture of potential negative and positive effects from the actions of the past, present, and reasonably foreseeable projects, there is some uncertainty in how Alternative 1 or 3 would ultimately affect the cumulative condition" and concludes that, because effects on salmonids would be spatially and temporally limited or mitigated, they do not cause significant incremental impact when added to other reasonably foreseeable future actions. Because the Sites Reservoir and Delta Conveyance Projects are being simultaneously permitted, neither project is reciprocally analyzing the impact of the other. The proposed Delta Conveyance Project is likely to be a contemporaneous infrastructure project to the proposed Sites Reservoir with congruent potential effects on aquatic resources. Therefore the combined effects of both projects should be explicitly analyzed to understand the impact on aquatic resources.	Delta Conveyance Project was not included in the No Project Alternative because it is not approved or operational. In addition to the fact that the Delta Conveyance Project has not yet been approved for construction or operation, at the time of the preparation of the RDEIR/SDEIS, there were no publicly available operations criteria (modeled or not) for that project and therefore a quantitative analysis of the potential cumulative effects from that project could not be performed. Chapter 31, Cumulative Impacts, includes the Delta Conveyance Project as part of the list of cumulative projects evaluated qualitatively for the analysis of cumulative effects.
81-10	Page 32-17 In Table 32-8 the Water Quality and Fish Impacts (for Winter, Spring, and Fall Chinook Salmon and Steelhead) are determined under NEPA to have substantial adverse effects without mitigation. With mitigation, the water quality impacts are partially improved to an adverse effect determination, but the Fish Impacts are fully mitigated to no effect or no adverse effect determinations. The single mitigation measure proposed, FISH-2.1, is a useful operational criteria, but limited since it only maintains historic mean flow at Wilkins Slough for a quarter of the year for out migrating juvenile Chinook salmon. This limited measure is not significant enough to reduce	In the Final EIR/EIS, both the Wilkins Slough flow criteria and Bend Bridge pulse flow protection criteria have been revised to be more restrictive and reflect the most recent and best available science, as described in Master Response 2, Alternatives Description and Baseline. The analyses, results, and impact determinations as they pertain to aquatic biological resources have been updated accordingly in Chapter 11, Aquatic Biological Resources, of the Final EIR/EIS, further confirming the findings of no effect or no adverse effect (e.g., the updated winter-run spawning weighted usable area [WUA] analyses do not show significant reductions in spawning

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	the impacts of the project's increases in water withdrawals from the Sacramento River that result in a reduction in winter-run spawning area in Critically Dry Water Years, 8-10 days of increased water temperatures at Hamilton City above Salmon Juvenile Rearing and Emigration targets, and an over 100 acres estimated reduction in Mean Daily January through April Inundated Habitat (Acres <1 Meter Deep) for Juvenile Salmonids in the Yolo Bypass. Mitigation measures to address additional habitat, time periods, and life stages are needed.	areas). Please also refer to Master Response 5, Aquatic Biological Resources, for a discussion of the revised analysis in the Final EIR/EIS to include the full migration period of juvenile migrating salmonids. As mentioned in Master Response 5, the Wilkins Slough bypass flow criterion of 10,700 cubic feet per second (cfs) is now part of the Project operational criteria (instead of a mitigation measure) and covers the period from October 1 to June 14, which includes key salmonid outmigration periods during the Project's diversion season.
81-11	Page 6-102 NMFS suggests that stormwater mitigation measures include bioretention treatment that would help sequester microplastics like tire wear particles and other roadway/vehicular toxicants.	As identified in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, BMP-15, Performance of Site-Specific Drainage Evaluations, Design, and Implementation, includes strategies and practices to protect water quality and associated aquatic habitat from pollutants in stormwater runoff. These strategies and practices may include green infrastructure such as bioswales and infiltration basins to capture, filter, or reduce stormwater runoff. Green infrastructure can be effective at retaining microplastics. Gilbreath et al. (2019) observed that 90% of the concentration of anthropogenic microparticles, including microplastics, was retained by a bioretention rain garden.
81-12	Page 6-11 In Table 6-3, applicable regulatory water quality criteria/objectives should reference the EPA-recommended criteria for ammonia. Also, in addition to organic carbon, metrics related to eutrophication like chlorophyll-a and microcystins should be included in the table.	Chapter 6, Surface Water Quality, Table 6-3 (titled Nutrients, Organic Carbon and Dissolved Oxygen) as cited in the comment provides summary information for potential natural and anthropogenic sources of, and beneficial uses affected by, nutrients, organic carbon, and dissolved oxygen. Because the table cited in the comment is specific to potentially applicable regulatory water quality criteria/objectives for nutrients (specifically, phosphorus and nitrogen [nitrate, nitrite, and ammonia]), organic carbon, and dissolved oxygen, metrics related to eutrophication like chlorophyll-a and microcystins are not included. Chlorophyll-a can be used as a measure of phytoplankton biomass but there are no chlorophyll-a water quality standards and thus this

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		water quality constituent is not included with the applicable regulatory criteria/objectives in Table 6-3. Similarly, and as indicated in Chapter 6, there are currently no federal or state regulatory standards for cyanotoxins (including microcystin) in recreational waters or drinking water. Please refer to Appendix 4A, Regulatory Requirements, of the Final EIR/EIS for U.S. Environmental Protection Agency's (USEPA's) human health recommended recreational criteria and drinking water health advisories for microcystins and cylindrospermopsin, as well as the Office of Environmental Health Hazard Assessment's notification level recommendations for anatoxin-a, saxitoxins, microcystins, and cylindrospermopsin. In addition, participating state agencies have developed voluntary guidance for responding to harmful algal blooms (HABs) in recreational waters, and the Office of Environmental Health Hazard Assessment has developed notification level recommendations for four cyanotoxins in drinking water: anatoxin-a, saxitoxins, microcystins, and cylindrospermopsin, which are also identified in Appendix 4A. Table 6-3 in the Final EIR/EIS has been revised to include USEPA's aquatic life ambient water quality criteria for ammonia (acute and chronic). This revision does not change the conclusions or impact determinations identified in the analysis.
81-13	Page 6-23 Selenium values from Stone Corral Creek near Sites are greater than that allowable in the San Joaquin Basin, for example, and could be more concentrated in first flush storm events. Values from Sites should be mitigated to ensure that they do not produce significant pollutant loadings downstream.	As described in Chapter 6, Surface Water Quality, the Project would not affect the selenium load from Stone Corral Creek and Funks Creek, and these creeks are expected to contribute only a small percent of the water in Sites Reservoir (average of 14 TAF per year). In many instances, Sites Reservoir would cause selenium concentrations in the creeks downstream of the reservoir to be reduced, allowing the lotic (flowing water) criterion of 3.1 micrograms per liter (µg/L) (see

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		Table 6-9 in Chapter 6) to be met due to the dilution of the creek water with water from the Sacramento River present in Sites Reservoir.
81-14	Page 6-28 The use of CALSIM monthly data (e.g. for metals, pesticides, salinity, and HABs) lacks the temporal resolution to analyze acute water quality exceedances. Additionally, it's suggested that the CE-QUAL-W2 model being used for temperature analysis in Sites Reservoir be further developed to analyze the other potential water quality impacts in the reservoir: namely metals, including mercury, salinity, and especially eutrophication and HABs.	For some of the constituents evaluated (e.g., HABs, pesticides, and nutrients), the analysis is based on physical processes and concentrations under No Project Alternative conditions. For these constituents, modeling is not necessary, nor would it be reliable or feasible, especially at a sub-monthly time step. For other constituents such as salinity and metals, CALSIM results are used, as explained in Section 6.3, Methods of Analysis, of Chapter 6, Surface Water Quality. Two types of CALSIM results that inform the evaluation of impacts are evapoconcentration and dilution in the Sacramento River. The monthly CALSIM results are adequate for evaluating these phenomena because they are minimally affected by day-to-day fluctuations. Evapoconcentration occurs gradually over time, so a sub-monthly analysis is not warranted. Dilution in the Sacramento River, which is a function of Sites Reservoir release and Sacramento River flow, would also likely not vary much within a month. Sites Reservoir releases would not fluctuate greatly from day to day and, at the time when Sites Reservoir water would be discharged to the Sacramento River, flow in the river would no longer be influenced by storm events and would not be fluctuating greatly from day to day. The Chapter 6 temperature evaluation focuses on whether discharge from Sites Reservoir would cause an increase in receiving-water temperature of more than 5°F. Fisheries resources are the primary designated beneficial use potentially affected by water temperature. As such, most of the potential effects associated with changes in water temperature are discussed in Chapter 11, Aquatic Biological Resources, which evaluates how changes in water temperature under

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		each alternative could affect fish at a daily (Sacramento and American Rivers) or monthly (Feather River) time step. Water temperature is also discussed in Chapter 15, Agriculture and Forestry Resources, as it relates to rice. The temperature blending tool (described in Chapter 6 and Appendix 6D, Sites Reservoir Discharge Temperature Modeling) was used to assess the effect of Sites Reservoir discharge on Sacramento River water temperature. This tool cannot simulate sub-monthly effects of Sites Reservoir discharge on receiving-water temperature. There would be limited day-to-day variation in the effect of the discharge on receiving-water temperature because reservoir release temperatures tend to be constant and because, as mentioned above, release flows and Sacramento River flows are not expected to vary greatly during the discharge period. Therefore, the temperature blending tool provides a reasonable representation of potential temperature effects associated with Sites Reservoir releases. Water temperature in the Sacramento and American Rivers was modeled on a sub-daily time step (see Appendix 6C, River Temperature Modeling Results). The fish assessment of water temperature effects presented in Chapter 11 utilized sub-monthly water temperature modeling results for special-status cold-water fish that use these rivers. In addition, the Chapter 11 fish assessment considers the difference between daily average and daily maximum temperatures, including for the monthly temperatures simulated for the Feather River. Methylmercury formation rates in reservoirs are uncertain due to the many factors that can affect the rate. For this reason, methylmercury

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		in Sites Reservoir was not modeled and instead was estimated based on existing information for reservoirs. Possible downstream effects were assessed qualitatively, with the exception of potential changes in concentrations of aqueous methylmercury that could contribute to fish tissue concentrations. As described in Chapter 6 and in Appendix 6F, Mercury and Methylmercury, the Central Valley Regional Water Quality Control Board Total Maximum Daily Load model was used to calculate expected tissue methylmercury concentrations in 350 millimeter (mm) largemouth bass based on estimated short- and long-term water column methylmercury concentrations from the Project alternatives in the Sacramento River at Freeport. Additional calculations were made, as a sensitivity analysis, to identify the concentrations of water column methylmercury that would need to be discharged from the Project to cause a given change in fish tissue concentrations. Calculations were based on the proportional flows from the Project in the Sacramento River at Freeport as determined by CALSIM II. Because bioaccumulation of methylmercury occurs over an extended period of time, assessment of sub-monthly changes in methylmercury would not be meaningful. Please also see Master Response 3, Hydrology and Hydrologic Modeling, for a discussion of modeling time step and the use of CALSIM. In some cases, monthly results from CALSIM are the best available information for evaluation of some resources. Regarding use of CE QUAL W2: simulation of metals (including mercury), salinity, eutrophication, and HABs was not performed with the CE QUAL W2 model because these simulations would be unreliable; input parameters needed for such simulations have a much higher degree of uncertainty than those needed for water

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		temperature simulations. These constituents are best simulated in an existing reservoir that allows for measurements of input parameters and measurements of constituent values that can be used for model calibration. An expanded CE QUAL W2 model would require inputs for parameters such as sediment oxygen demand, nutrients, and sediment metal concentrations that may change relatively rapidly after filling of the reservoir. Furthermore, simulation of HABs is particularly difficult because it requires the model to be able to reliably distinguish between HABs and other types of algal growth.
81-15	Page 6-33 The Surface Water Quality Analysis notes that, "When Sites Reservoir would release water to the Sacramento River, it would constitute 6%–7% of the Sacramento River flow on average and 12%–13% when discharges are relatively high compared to river flow (i.e., 90th percentile values), depending on whether Alternative 1, 2, or 3 was implemented." Do these percentages reflect just Alternative 2 direct releases to the river, or loading indirectly (e.g. via CBD, KLRC, and/or Yolo Bypass)? Additionally, the use of the average receiving water volume to determine dilution calculations assumes instantaneous and complete mixing, but water quality impacts could exceed regulatory standards within the initial zone of dilution.	These percentages reflect the direct release of Sites Reservoir water to the Sacramento River for all the alternatives. Contaminant loads from Colusa Basin Drain (CBD), Knights Landing Ridge Cut, and Yolo Bypass to the Sacramento River and north Delta would be unmodified except in the case of Sites habitat flows for the Yolo Bypass (which would redirect CBD loads from the Sacramento River near Knights Landing to the Yolo Bypass as described under Impact WQ-2). Concentrations of CBD or Sites water in the mixing zone likely has/would have little effect on organisms due to less-than-lethal concentrations and the limited time organisms spend in the mixing zone. For Alternatives 1 and 3, combining Sites water with CBD water would reduce concern regarding mixing in the Sacramento River. Sites Reservoir releases would first mix with CBD water, reducing concentrations of many constituents in CBD water. As described in Chapter 6, Surface Water Quality, because concentrations of many constituents are elevated in the CBD, the mixing of CBD water with Sites water would generally improve water quality in the CBD. Furthermore, because the combined Sites and CBD flow would be greater than CBD flow alone, mixing in the Sacramento River should occur more quickly due to higher lateral velocities. There still would likely be a zone of unmixed water, but, for most constituents, concentrations are expected to be

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		lower than with the discharge of CBD water by itself. Methylmercury discharged from Sites Reservoir potentially could cause an increase in methylmercury concentration in CBD, but methylmercury effects are considered to be significant and unavoidable (Impacts WQ-1 and WQ-2).
81-16	Page 6-33 Please provide a copy of the spreadsheet blending model for monthly water temperatures in TC Canal and CBD described in Section 6.3.2.5.	The Authority and Reclamation coordinated with NMFS on the information request as part of ongoing coordination. As directed by NMFS, Reclamation provided information related to the Endangered Species Act consultation initiation package (i.e., the biological assessment). The Authority and Reclamation appreciate the coordination efforts from NMFS on the Project.
81-17	Page 6-34 The water temperature modeling, "was based on the CALSIM flows at Wilkins Slough for Alternatives 1, 2, and 3 and the temperatures were based on measured data that were the same for all alternatives. The use of a single set of temperatures for the Sacramento River allows an evaluation of the effects due to Sites Reservoir releases not confounded by changes in temperature due to changes in Shasta Lake operations. More details regarding the monthly blending model are provided in Appendix 6D, Sites Reservoir Discharge Temperature Modeling." However, this modeling assumption makes it difficult to see the net impact of Shasta Lake operations as well as the proposed Sites Reservoir operations.	Based on the model results, it is assumed that the Sacramento River at Wilkins Slough water temperature in all alternatives would tend to equilibrium temperature conditions. As observed in Appendix 6C, River Temperature Modeling Results, the greatest difference in temperature at Butte City is less than 1°F. After 50 river miles, the differences would diminish as the river tends to equilibrium conditions. Therefore, the change to Shasta Lake operations would not affect Sacramento River temperature conditions where Colusa Basin Drain discharges into the Sacramento River.
81-18	Page 6-39 Mercury impacts on aquatic life (in addition to human health and wildlife) should be further analyzed, especially for sturgeon. Mercury can affect the immune, respiratory and cardiovascular systems, reproductive organs, nervous systems, and digestive systems of fish. Mercury impacts on fish are discussed in the aquatic biological resources section (page 11-16), and an increase in mercury levels in the Delta is discussed, but dismissed for salmonids based on a short temporal overlap of the species with the	Potential mercury impacts on aquatic life are discussed in Chapters 6, Surface Water Quality, and 11, Aquatic Biological Resources. It is acknowledged that Sites Reservoir releases may cause measurable increases in fish tissue methylmercury concentrations in the Delta, particularly in Dry and Critically Dry Water Years. Mitigation Measure WQ-1.1, would be implemented to reduce the methylation of mercury in Sites Reservoir and thus reducing the magnitude of the water quality impact in the Delta. However, the degree of effectiveness of

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	contaminant and the historic data showing low tissue levels in salmon (page 11-121). However, this analysis is not discussed for sturgeon, which have been reported to have higher levels of mercury in tissues. Mercury was a cause of ESA listing for the Green Sturgeon sDPS in California's Central Valley and the impact of the Sites Reservoir increases in mercury loading should be analyzed for this species.	any of the identified actions to reduce mercury methylation and bioaccumulation in Sites Reservoir specifically is not known at this time. Therefore, this impact on water quality would be significant and unavoidable. Although an impact determination of significant and unavoidable was made for water quality impacts related to increases in methylmercury in the Delta, this does not necessarily translate into a significant impact on specific fish species or other aquatic resources given that there are a number of interacting ecotoxicological factors at play, including, for example, the following: life history/spatial and temporal overlap between the species and areas potentially affected by Sites Reservoir releases; species-specific physiological traits including detoxification mechanisms and tolerance to contaminants; and relative roles of dietary or direct contamination pathways. In addition, as explained in Master Response 5, Aquatic Biological Resources, the effects of the Project on fish and fish populations were evaluated by qualitatively and quantitatively weighing all relevant analysis results, including results from different processes (e.g., spawning habitat, entrainment, temperature effects, upstream passage) and for different times of year, locations, and life stages. Sturgeons are known to exhibit high mercury tissue concentrations as a result of both bioaccumulation (high longevity and large size species) and bioamplification within aquatic foodwebs. While green and white sturgeon life history is not fully understood, most adult sturgeons migrate to river reaches upstream of the areas of concern to spawn in winter and spring every 2 to 6 years and remain the rest of the time in downstream estuarine areas (white sturgeon) or coastal waters (green sturgeon) not affected by Sites Reservoir releases.

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		Dietary exposure in areas that may receive Sites Reservoir releases, including the Delta, would be most likely to affect juveniles. While lethal and sublethal effects of mercury dietary exposure have been experimentally documented in juvenile sturgeons (Lee et al. 2011), the lowest observed effect concentration in both white and green sturgeon was on a 50 milligrams methylmercury per kilogram diet—exceeding the average concentrations measured in the main sturgeon preys in the Delta by 3 to 4 orders of magnitude (see Central Valley Regional Water Quality Control Board 2010, Table C.4, for average mercury concentrations in Crangon shrimp, Asiatic clam and gobies). The potential increase in mercury/methylmercury in the Delta as a result of Sites Reservoir operations would be far from causing sturgeon preys to reach such elevated tissue methylmercury concentrations.
81-19	Pages 6-53, 59 How would the vegetation be removed prior to reservoir filling (e.g. manual removal, burning, pesticides)? Adverse effects to downstream water quality will depend on this answer.	As described in the Clearing, Grubbing, and Topsoil Preservation subsection of Chapter 2, Project Description and Alternatives, vegetation would be removed by clearing and grubbing.
81-20	Pages 6-55 to 56 The surface Water Quality Analysis notes that, "During initial filling of Sites Reservoir, nutrient (nitrogen and phosphorus) levels would be expected to be relatively high due to flooding of soils in the inundation footprint. This, along with warm water temperatures starting in late spring, could contribute to creating conditions conducive to promoting and maintaining HABs, and supporting the growth of nuisance algae and aquatic vegetation." However, it concludes that, "Downstream effects on water quality would not be expected if cyanobacteria and cyanotoxins were present in the releases because concentrations of cyanobacteria and cyanotoxins would be greatly diluted when eventually discharged into the Sacramento River. Furthermore, cyanotoxins undergo biodegradation and	Please see the Chapter 6, Surface Water Quality, Section 6.3.2.4, Dilution of Sites Discharges in the Sacramento River, for a discussion of the dilution effect of the Sacramento River on Sites Reservoir discharges in the Sacramento River. The full set of monthly CALSIM results for Sites Reservoir discharges to the Sacramento River via the Dunnigan Pipeline (Alternative 2) or via CBD (Alternatives 1 and 3) was compared to CALSIM results for flow in the Sacramento River at Wilkins Slough (upstream of the discharge locations). This comparison allows the evaluation of dilution of Sites Reservoir discharges in the Sacramento River. For Sites releases that are conveyed via the CBD, water in the CBD would also act to dilute cyanobacteria and cyanotoxins from Sites releases, if present. There are currently no

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	photodegradation." The assumptions behind this dilution should be fully explained. Specifically, will reservoir releases be limited during HAB events to prevent downstream release of cyanotoxins? Will any releases that could impact human health or aquatic life be timed such that the discharge can be adequately diluted?	plans to limit reservoir releases or alter the timing of releases during HAB events. The simple presence of cyanobacteria or cyanotoxins in water does not ensure that there would be adverse effects on human health or aquatic life. These toxins must be present at concentrations in air and/or water that are dangerous to people or aquatic life. Refer to Master Response 4, Water Quality, which explains how the I/O tower will be used to control releases of water quality constituents, including how deeper ports will be used for reservoir releases when HABs/cyanotoxins are present.
81-21	Pages 6-55, 58 The water quality analysis acknowledges short term exceedances of water column and fish tissue criteria for methylmercury. What best management practices will be implemented to control or prevent this? The SDEIS/REIR proposed to not stock fish for 10 years after initial filling, but striped bass larvae and other Centrarchids larvae may be entrained in the water withdrawal and establish in the reservoir. Have the measures proposed in methylmercury management/mitigation measures WQ-1.1 been proven to be effective in their purpose? On Pages 6-54 and 6-73, how were the "reasonable worst-case" Estimated Long-Term Average Concentrations of Total Mercury and Methylmercury in Sites Reservoir determined? The argument presented that Sites mercury loading isn't impactful because Yolo Bypass concentrations are higher (page 6-75), fails to account for mercury cycling where Hg could accumulate in Yolo Bypass sediments and fish tissues from Sites loadings, if the concentrations from Sites are lower. This mechanism is explicitly listed for metals other than mercury under Temporal Shift and Evapoconcentration (page 6-81).	Measures that would be implemented to reduce the methylation of mercury in Sites Reservoir and thus the bioaccumulation of mercury in fish are described in Mitigation Measure WQ-1.1. Most of these actions are recommended actions for new reservoirs as part of the Statewide Mercury Control Program for Reservoirs, as identified in the Draft Staff Report for Scientific Peer Review for the Amendment to the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California, Mercury Reservoir Provisions – Mercury TMDL and Implementation Program for Reservoirs (State Water Resources Control Board 2017a). The potential effectiveness of these recommended methylmercury reduction actions is supported by current research (State Water Resources Control Board 2017a) but may be site specific. Methylmercury reduction actions will be implemented in coordination with the State Water Board and Central Valley Regional Water Quality Control Board, as required. While largemouth bass and other centrarchids could be entrained at the Red Bluff and Hamilton City intakes, they are unlikely to survive the multiple pumping facilities between the diversions and Sites Reservoir. Therefore, the probability of entrained fish establishing a

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		population in Sites Reservoir is low. As noted for Impact FISH-13 in Chapter 11, Aquatic Biological Resources, striped bass spawning occurs in the Sacramento River downstream of these intakes, and thus entrainment of striped bass fish larvae would likely not occur. A discussion of potential entrainment of black bass (largemouth bass, smallmouth bass, and spotted bass) is discussed under Impact FISH-16 in Chapter 11. An additional action has been added to Mitigation Measure WQ-1.1 as well as to the Reservoir Management Plan in Appendix 2D to minimize potential public exposure to methylmercury through consumption of Sites Reservoir fish prior to regulated stocking of the reservoir. A fish sampling program will be implemented upon completion of the initial filling of the reservoir. Initially, a sampling program will be implemented to determine whether game fish are present (either because of unauthorized stocking or fish entrainment at the Sacramento River diversions). Once it has been determined that a population of game fish has established in the reservoir, annual monitoring of Sites Reservoir fish tissue methylmercury concentrations will commence. If the 0.2 milligram per kilogram (mg/kg) sport fish objective is exceeded, fish consumption warning signs will be posted. The addition of this action to the Final EIR/EIS does not change conclusions or impact determinations identified in the analysis in Chapter 6, Surface Water Quality. A detailed discussion of how the estimates for expected and reasonable worst-case short- and long-term total mercury and methylmercury concentrations in Sites Reservoir were made is provided in Appendix 6F, Mercury and Methylmercury.

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		Regarding the issue of potential mercury loading from Sites Reservoir to Yolo Bypass, while there is expected to be mercury and methylmercury in releases from Sites Reservoir, Yolo Bypass habitat flows would be confined to the Tule Canal, Toe Drain, and other channels and thus would result in minimal land inundation where mercury/methylmercury could be deposited. Thus, these flows would be expected to move through the bypass with minimal mercury deposition.
81-22	Page 6-9 The discharge of salinity and nutrients to the Sacramento River due to Sites Reservoir construction and operations (on account of increases agricultural use, routing of the water through the Colusa Basin Drain, and brine springs, seeps and salt ponds in the reservoir footprint) should be included, along with metal and pesticide effects, in Mitigation Measure WQ-2.2.	The Project is not expected to have a significant effect on salinity and nutrients in the Sacramento River as a result of construction and operations, as described in Chapter 6, Surface Water Quality (Impacts WQ-1 and WQ-2). As described in Chapter 32, Other Required Analyses, the Project would increase water supply reliability during Dry and Critically Dry Water Years. Increased reliability may allow agricultural users to make different decisions than they otherwise would (e.g., grow crops more consistently on the same agricultural acreage and reduce the need to fallow land in drought years, change the cropping pattern). Surface water deliveries from Sites Reservoir storage may also be used to avoid use of groundwater for irrigation. As shown in Table 32-2 in Chapter 32, the estimated percent increase in total agricultural deliveries would be small. The largest percent increase is 9% under Alternative 3 for the San Francisco Bay hydrologic region for Dry and Critically Dry Water Years. This percent increase is large compared to other regions because the total amount of agricultural land and associated agricultural water supply in this region is relatively small, so an increase of only 2 TAF in water supply (Table 32-1) is able to cause this increase.

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		The largest increases in deliveries would occur under dry conditions and could increase agricultural acreage under dry conditions somewhat but are not expected to cause much change in acreage under conditions of full water supply. Consequently, it is unlikely there would be a substantial increase in total agricultural acreage, and agricultural runoff is not expected to increase under Project conditions. Furthermore, agricultural runoff is currently regulated by the existing Irrigated Lands Regulatory Program, which protects water quality. Because the Project would not change the salt and nutrient load entering CBD from existing land use, the discharge of CBD loads to the Sacramento River would not increase as a result of the Project. The potential effects of the salt seeps that feed Salt Pond were evaluated in Chapter 6 for Impact WQ-2, and the effects were determined to be less than significant, due primarily to the relatively small volume of water emanating from the seeps.
81-23	Page 6-90 The statement "Releases from Sites Reservoir would generally have low to no concentration of pesticides and would therefore not degrade Sacramento River water quality" is not substantiated with monitoring or modeling data. The diversion of Sacramento River water through agricultural land use could cause an increase in pesticide and herbicide concentrations. For example, it's noted on page 6-91 that "There was some indication that the 2016 pulse of Sacramento River water reduced pesticide concentration at the upstream end of the Yolo Bypass, but it may have conveyed some pesticide downstream to the lower part of the bypass near	The statement that "Releases from Sites Reservoir would generally have low to no concentration of pesticides and would therefore not degrade Sacramento River water quality" is based on pesticide data. As described in Chapter 6, Surface Water Quality, measurements of pesticide concentrations available in the California Department of Pesticide Regulation's Surface Water Database (SURF) were considered in the analysis. The effect of the flow pulses on Yolo Bypass water quality is related more to water quality in CBD than water quality from Sites Reservoir.

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	Lisbon Weir." Unfortunately, the mitigation measure proposed won't reduce pesticide concentrations, but rather remove the environmental benefit of the flows entirely: depending on the state of the science and fish needs (including water quality impacts), flows would cease if there were no net benefit.	The evaluation of flow pulses through the Yolo Bypass relied on studies that evaluated movement of pesticide associated with North Delta Flow Action pulses through the Yolo Bypass. There is evidence that flow pulses through the Yolo Bypass could increase phytoplankton abundance downstream of the Yolo Bypass and food supply for fish in the North Delta, including delta smelt. This conclusion is based on evaluation of flow pulses that occurred through the Yolo Bypass during 2011 through 2019 as described in Chapters 6 and 11. The magnitude of effect has been variable and the methodology for maximizing primary production has not been determined. There is some concern that flow pulses could relocate contaminants and reduce the expected benefits of the pulses (e.g., Davis et al. 2022:2,3). Please see response to comment 81-22 regarding agricultural runoff and the lack of the ability of operation of the Project to affect existing agricultural runoff. The Project is not responsible for mitigating preexisting pesticide loads, and Mitigation Measure WQ-2.2 would minimize, avoid, or reduce the potential pesticide loads associated with operation of the Project.
81-24	Pages 13-5 & 21-6 The Minerals analysis (page 13-5) notes the existence of nearby capped natural gas wells (e.g. specifically underlying the northeastern portion of the inundation area). What's the likelihood of natural gas being emitted into the reservoir once it is full. Ultimately what is the likelihood of that gas being emitted to the atmosphere and contributing to greenhouse gas emissions? How would it be mitigated during construction or operations? What are the anticipated reservoir carbon emissions from all sources of construction and operations? The greenhouse gas emissions discussion fails to conduct an analysis of reservoir emissions only noting that, "Such a comparison	The commenter is correct that reservoirs can contribute to global GHG emissions. This fact is noted in Section 21.3.1.2, Land Use Change, in Chapter 21, Greenhouse Gas Emissions, of the RDEIR/SDEIS, which goes on to note that a quantification of these emissions requires "a detailed accounting of local and site-specific variables." For a site-specific analysis, it remains accurate that a quantification of these emissions requires "a detailed accounting of local and site-specific variables." The Authority and Reclamation have conducted a desktop analysis that does not rely on site-specific information, and

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	requires a detailed accounting of local and site-specific variables, including salinity, pH… type of grass, carbon content of soils, and other chemical and biological characteristics. Additionally, post-impoundment studies and sampling would be required. These types of sitespecific data are not available, and, as such, a quantified analysis of potential GHG emissions from conversion of existing cattle grazing land to a surface storage reservoir is not possible and would be speculative. When the Authority takes ownership of the land in the inundation area, it may be possible to quantify GHG emissions from land conversion… It is anticipated that, at that time, the necessary data and studies would be attainable." A firmer commitment to complete this analysis is needed before construction or other project activities preclude mitigation measures. Greenhouse gas emissions from other temperate reservoirs with generally shared characteristics as Sites should be reported and considered. The California Air Resources board Current California GHG Emission Inventory, or other similar datasets, should be queried for emissions data on inundated lands and reservoirs. Furthermore, desktop analysis, even with limited field data, should be pursued and methods should be explored such as those in the references below. Sites Reservoir is among the largest potential surface water storage projects to be constructed in California in decades, and an adequate analysis of greenhouse gas emissions for the life of the project will be important over the lifetime of the project. • Keller, P. S., Marcé, R., Obrador, B., & Koschorreck, M. (2021). Global carbon budget of reservoirs is overturned by the quantification of drawdown areas. Nature Geoscience, 1-7. • Scherer, L., & Pfister, S. (2016). Hydropower's biogenic carbon footprint. PloS one, 11(9), e0161947. • Deemer, B. R., Harrison, J. A., Li, S., Beaulieu, J. J., DelSontro, T., Barros, N., … & Vonk, J. A. (2016). Greenhouse gas emissions from reservoir water surfaces: a new global synthesis. BioScience, 66(11), 949-964.	the results are included in Appendix 21A, Greenhouse Gas Support Appendix. The disclosure of these emissions in Appendix 21A does not affect the impact significance conclusions in Chapter 21, because the land use conversion emissions are included in the net-zero commitment for the Project. The Authority and Reclamation have committed to meeting net-zero emissions, so the addition of the emissions presented in Appendix 21A expands the magnitude of the commitment required to achieve net-zero. As noted in the RDEIR/SDEIS, however, the actual emissions quantities to be reduced will be determined on an ongoing basis using more refined data and not based on the quantities in the RDEIR/SDEIS, or Appendix 21A. Thus, the Authority will reduce these emissions per Mitigation Measure GHG-1.1 through onsite measures, offsite measures or projects, and/or GHG or carbon credits. Because Mitigation Measure GHG-1.1 applies to the land use conversion emissions and all other Project emissions disclosed in Chapter 21, the Project would result in net-zero emissions, and GHG impacts would remain less than significant. It should also be noted that the GHG emissions presented in Appendix 21A do not account for activities that would potentially sequester carbon, such as activities associated with Project implementation, or implementation of Project mitigation measures. The emissions represent a conservative assessment of emissions because it does not currently account for potential carbon sequestration activities that would result from implementation of the Project, such as offsite Project activities and Project features, or mitigation measures identified for other resource areas that may affect land use changes. Readers should note these considerations when reviewing the appendix and the emissions values and be aware

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	• Soumis, N., Duchemin, É., Canuel, R., & Lucotte, M. (2004). Greenhouse gas emissions from reservoirs of the western United States. Global Biogeochemical Cycles, 18(3).	that it is not possible at this time to provide a comprehensive accounting of emissions sources and sinks affecting land use-related emissions. As such, the focus of Appendix 21A is on the net increase in emissions resulting from the change in land use in the inundation area, but there are other activities, features, and/or mitigation measures that may result in an emissions benefit but are not currently accounted for
81-25	Page 7-20 Alterations to the natural river hydrology and geomorphology can have adverse impacts on native aquatic biota. Specifically, the Fluvial Geomorphology Chapter notes that the preferred alternative may reduce Yolo Bypass inundation from January through June by approximately one day across most water year types and reduce in Delta outflow during the wetter months. NMFS is concerned with the impact of Sites Reservoir operations on the performance of the Big Notch project and would like to discuss in more detail the modeling and how operations will be coordinated in real time.	Analysis of the Yolo Bypass was included in Chapter 11 of the RDEIR/SDEIS, Aquatic Biological Resources, and the relative differences in Yolo Bypass inundation were provided showing the mean acreages of inundation in different months and water year types and the number of days and duration of inundation under the No Project Alternative and Alternatives 1, 2, and 3. As indicated in Chapter 11, minor reductions in the frequency of inundation events and acreage of suitable inundated habitat are possible under the Project compared to the No Project Alternative. Additional analysis of Project effects on juvenile Chinook salmon entry into the Yolo Bypass has been added to Chapter 11 of the Final EIR/EIS, which provides more detailed and race-specific results than those provided in the RDEIR/SDEIS but does not change conclusions regarding effects of the Project on the fish. The analyses are described in detail in Appendix 11M, Yolo and Sutter Bypass Flow and Weir Spill Analysis, and rely on daily Fremont Weir Spill computations from CALSIM II, which include operation of the Fremont Weir Notch (aka, the Big Notch Project) under the assumptions detailed in Appendix 5A7, Daily Pattern Development for the Estimation of Daily Flows and Weir Spills in CALSIM II. Additionally, the revised operational criteria in the Final EIR/EIS (see Master Response 2, Alternatives Description and Baseline), including pulse protection and Wilkins Slough bypass flows, provide protections

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		for the Fremont Weir Notch and limit the potential for negative effects on aquatic resources. As part of the Adaptive Management Plan, monitoring will be conducted, in cooperation with the regulatory agencies, to determine Project effects on aquatic biota and what the magnitude of that effect would be on entrainment of juvenile salmon into the Yolo Bypass. If there is an adverse effect, a science-based adaptive management approach will be employed to determine how to adjust diversions 158 river miles upstream of the Fremont Weir Notch to maintain its efficiency for aquatic biota as described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. The Authority and Reclamation have been in discussions with various regulating agencies, including NMFS, and will continue to work with regulating agencies through the permitting process and development of the Reservoir Operations Plan.
81-26	Page 11-111 Mean weighted usable area in winter-run spawning grounds from Keswick Dam to ACID dam is 5-6% less than the no action alternative in May of Critically Dry Water Years. The loss of early spawning habitat during critical years is especially detrimental since there is frequently a lack of cold water to support the survival of eggs spawned later (e.g. August, July, or even June).	The changes in winter-run spawning conditions in Segment 6 of Critically Dry Water Years are acknowledged in the RDEIR/SDEIS, Chapter 11, Aquatic Biological Resources, Section 11.4, Impact Analysis and Mitigation Measures, Impact FISH-2: "These results indicate that in May of Critically Dry Water Years, Alternatives 1, 2, and 3 would result in reductions of spawning habitat in Segment 6 and increases of spawning habitat in Segment 4. Note that spawning habitat conditions are much more important for winter-run in Segment 6 than in Segment 4." However, these reductions, which range between 5% and 6%. Depending on the alternative, and occur only in Critically Dry Water Years, are considered, based on expert opinion, not to have a substantial effect on the overall availability of winter-run spawning habitat. Also, as discussed in Master Response 5, Aquatic Biological Resources, impact conclusions regarding effects of Alternatives 1, 2, and 3 on the populations of all fish species evaluated

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		are arrived at by weighing effects of the alternatives on all important factors. Analysis of new Project operations associated with the Final EIR/EIS show no effect on winter-run spawning WUA in any of the river segments. Regarding the Project's potential impact on egg survival during June through August, the results of the Anderson and Martin egg mortality models from the revised modeling in the Final EIR/EIS indicate that egg mortality under each alternative is comparable to that of the No Action Alternative (NAA) (Appendix 11O, Anderson-Martin Models) and would not be deemed detrimental at any level. For the entire year, the Martin model predicts a change in winter-run egg mortality from 0.2% increase under Alternative 1A relative to the NAA (Table 11O-3c in Appendix 11O) to 0.5% reduction under Alternative 3 relative to the NAA (Table 11O-6c in Appendix 11O). The Anderson models predict a reduction in winter-run egg mortality of 0.2% under Alternatives 1A and 2 relative to the NAA (Tables 11O-3c and 11O-5c in Appendix 11O) to 0.4% under Alternative 3 relative to the NAA (Table 11O-6c in Appendix 11O). Please also refer to Master Response 5, Aquatic Biological Resources for discussions of: (1) uncertainty, and (2) thresholds and criteria used in the analyses.
81-27	Pages 11-126 to 11-127 The SDEIS/REIR analysis applies the IOS (Interactive Object-Oriented Simulation) and OBAN (Oncorhynchus Bayesian Analysis) winter-run Chinook salmon life cycle models. As was previously communicated to Reclamation in conversations from January through April of this year, and in	Please refer to Master Response 5, Aquatic Biological Resources, regarding application of IOS and OBAN. Master Response 5 also address the unavailability of NMFS resources, including WRLCM, at the time of document preparation. As mentioned in Master Response

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	our July comment letter, NMFS recommends the use of the Sacramento River Winter-run Chinook Salmon Life Cycle Model (WRLCM) for a project of this nature and magnitude to adequately integrate effects of the alternatives on the species. Use of the WRLCM is consistent with NEPA regulations that, "...agencies may make use of any reliable data sources, such as remotely gathered information or statistical models," (NEPA Implementing Regulations 40 CFR 1500–1508 § 1502.23) and the ESA consultation requirement that, "...each agency shall use the best scientific and commercial data available." (The Endangered Species Act § 7(a)(2) and 50 CFR 402.14(f)(8)). Application of the WRLCM to Sites Reservoir analysis contrasts with IOS and OBAN based on the following factors: Comparability - It is unclear in the SDEIS/REIR how IOS and OBAN will be synthesized into a single analysis or how they can be compared to related baseline or cumulative actions such as Central Valley Project Operations or the Delta Conveyance Project (both of which apply the WRLCM). • Level of Model Review - The WRLCM has extensive documentation and monthly stakeholder outreach meetings to discuss model developments and applications. NMFS is not aware of similar levels of documentation and outreach for OBAN and IOS. • Egg Incubation - Temperature dependent mortality modeling has evolved over the past five years. The WRLCM integrates the most recent peer-reviewed temperature dependent mortality relationships. • Yolo Bypass - The WRLCM models the Yolo Bypass floodplain explicitly where the entrance to the floodplain habitat is dependent upon overtopping of the Fremont Weir during the specific month of dispersal, or otherwise tidal fry move to the delta and bay habitats to rear in that month. • Delta Passage and Survival - WRLCM has monthly timesteps for Calsim hydrology and 15 minute steps for tidal fluctuations and exports as well	5, the Authority and Reclamation will work with NMFS to run the WRLCM during the permitting process.

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	as mechanistic components (enhanced particle tracking) which can perform better than statistical approaches at this model function. Although some inference is attempted in the SDEIS/REIR attempting to apply the WRLCM results for California WaterFix (to conclude that the Sites Reservoir alternatives would not substantially change delta rearing habitat for juvenile winter-run Chinook salmon), that modeling is dated and the project is not sufficiently similar to Sites Reservoir to conclude that the WRLCM results will be applicable here. In summary, the better compatibility, level of review, handling of egg incubation, representation of the Yolo Bypass, and resolution in the Delta are all relevant to the proposed Sites Reservoir and suggest the use of the more robust WRLCM. The built impacts and operations of the proposed project will continue indefinitely and therefore the best available scientific models should be applied to understand the effects on winter-run Chinook salmon populations. NMFS continues to emphasize the urgency to address concerns with the life cycle modeling framework for both the NEPA process and anticipated ESA consultation. NMFS is likely to require results from analyses that are provided by the WRLCM to adequately analyze effects for the jeopardy determination required in ESA consultation. To our knowledge, no other model provides the same suite of capabilities.	
81-28	Page 11-88 The hydrologic model results report diversions as a percentage of Sacramento River Flow, averaged by month and water year type, from CalSim Modeling. Results should reflect critical conditions (e.g. drought in summer) not just average conditions (which can be highly variable in California, even when stratified by water year). In particular, the average for Critically Dry Water Years presented in Table 5-11 doesn't represent potential critical conditions since it averages across what can be a wide range of storage conditions. While the conditions of a single year may be	Please refer to Master Response 5, Aquatic Biological Resources, for a discussion of the use of means in reporting modeling results. For purposes of NEPA and CEQA, the analyses of means efficiently illustrate the general effects of the Project under a range of flows or flow-related conditions and are in keeping with appropriate use of CALSIM-based modeling. Selecting an arbitrary sequence of Critically Dry Water Years for analysis would be speculative and inconsistent with the requirements of NEPA and CEQA.

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	important, prolonged dry periods (e.g. in back to back water years) in the Sacramento River can exhaust CVP/SWP surface storage capacity, leading to high river temperatures (e.g. 2014-15, 2020-21) and elevated extinction risk. NMFS suggests pursuing an analysis to understand the effects of the project on the Sacramento River during prolonged dry periods, like the severe droughts that have been experienced in recent years.	With respect to drought conditions, water year type calculations in CALSIM runs consider the hydrology from the previous water year. As such, a Critically Dry Water Year is likely to follow an already Dry or Critically Dry Water Year. Furthermore, lower storage conditions occur only under successive Dry Water Years, as identified by Critically Dry Water Years. Also worth noting is the location of the Project diversions at Red Bluff and the Hamilton City intake, below the critical temperature reaches for winter-run Chinook salmon. The Project would not affect runoff into Shasta Lake. It only provides a tool for Reclamation to use in its efforts to manage the cold-water pool in Shasta Lake through the use of exchanges that may affect rate of releases from Shasta Lake for purposes of temperature control and flow stability. The use of monthly means is a sufficient analysis to disclose the effect of the alternatives in that regard. Regarding river temperature conditions, please see Appendix 6C, River Temperature Modeling Results. Exceedance plots of temperature are provided for each month, which should help illustrate the changes to Sacramento River water temperature during the warmest summer months (i.e., drought conditions). Finally, Chapter 28, Climate Change, discusses the likely change in patterns of precipitation and storage in Shasta Lake and indicates an expected reduction in storage at Shasta Lake, which suggests temperature management will be a challenge in the future. The Project adds a tool Reclamation may use in the development of its annual temperature management strategies pursuant to Water Rights Order 90-5.
81-29	Page 11-88 Reduction in Spring pulse flows and Summer base flows on the Sacramento River can have negative repercussions on salmon life history. For example, Alt 1A increases diversions at Red Bluff substantially in March (increasing by	The values described by the commenter are correct in the RDEIR/SDEIS and were considered alongside results from multiple other analyses and lines of evidence to evaluate potential impacts from the Project on aquatic resources. The modeling has been

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	11% in Above Normal years and 12% in Below Normal years). Under the preferred alternative, Hamilton City will be withdrawing about 25% of the river flow in the late spring and through mid-summer (e.g. May-August) while Red Bluff is withdrawing more than 10%. The flow and temperature impacts can combine to have additional negative effects. For July of Above Normal Water Years at Hamilton City, there is anticipated to be an increase in temperatures for the juvenile rearing and migration life stages in which there were 11.6% more days than the no action alternative (NAA) exceeding the 64°F 7- day average daily maximum (7DADM) index value and the mean daily exceedance on those days was 0.7°F greater than the NAA.	updated for the Final EIR/EIS. The updated modeling does not change impact determinations or conclusions.
81-30	Page 11B-11 The Water Temperature Index Value Analysis obscures temperature impacts of the project. In particular, the biologically meaningful criteria (page 11B-8) is too narrow in its definition (requiring both 5% difference in days/month and 0.5 F increase) and the temperature targets in Table 11-B-2 (page 11B-11) need refinement (e.g. Winter-run Spawning, Incubation and Alevins should target 53.6°F (consistent with the Winter-Run Chinook Salmon Egg Mortality Analysis Based on Martin et al., 2017, and described on page 11O-1). Additionally the adult holding targets for Winter-Run may need to be more lower than those proposed in order to prevent disease and decreased gamete viability in holding adults, as described.	Regarding the index value analysis obscuring impacts of the Project, the analysis was originally designed (with substantial input from NMFS) to help elucidate, not obscure, impacts by looking at both the frequency and magnitude of exceedance above temperature index values gathered from the scientific literature. The magnitude aspect of the analysis provides further context of how temperatures exceed the index value. For example, there is a large biological difference between 5% of years exceeding an index value by an average of 0.001 degrees versus 5% of years exceeding an index value by an average of 10 degrees. The justifications for the biologically meaningful criteria are defined in Appendix 11B, Upstream Fisheries Impact Assessment Quantitative Methods, Section 11B.1.2.2, Water Temperature Index Value Analysis. In summary, the analysis allows for inherent model error, real-time management, and natural variation around thermal impacts. Further clarification was added to this section in the Final EIR/EIS. The clarifying text does not result in changes to impact determinations or conclusions. The analysis has been used in previous planning

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		documents, including the NMFS California WaterFix biological opinion (National Marine Fisheries Service 2018). An analysis using 53.5°F was added to the Final EIR/EIS. The results of the analysis do not result in changes to impact determinations or conclusions. Adult holding temperatures relied on existing USEPA guidance of 61°F 7-day average daily maximum.
81-31	Page 11D-1 Can the data in Appendix 11D (Fisheries Water Temperature Assessment) be provided in a spreadsheet format (e.g. .xls or .csv), since there are 634 pages of tables with no visualizations, making the results difficult to view and interpret.	This information request from the NMFS was fulfilled. The Authority and Reclamation coordinated with NMFS on the request. As directed by NMFS, Reclamation provided this information as it related to the Endangered Species Act consultation initiation package (i.e., the Biological Assessment).
81-32	Page 11D-81 Table 11D-32 indicated that in critical years there will be 8-10 days of increased water temperatures at Hamilton City above the 64°F 7DADM target for Spring-Run Chinook Salmon Juvenile Rearing and Emigration - but also reports a mean difference of 0 to 0.1°F. How can there be an increase in days above the indicator value, but no change, or a decrease, in mean temperature? This same dynamic is seen in numerous other tables, (e.g. Tables 11D-3, 10, 11, 17, 20, etc.)	The temperature analysis results do not conflict because the analysis is evaluating different aspects of exceedance above the index values. The frequency of exceedance measures the proportion of days or months (depending on modeling time step) that exceed the index value for each model scenario and then computes the difference between model scenarios. The magnitude of exceedance calculates the mean magnitude of exceedance above the index value on days or months (depending on modeling time step) that exceed the index value and then computes the difference in mean exceedance between model scenarios (in degrees per day). Because all CALSIM-based analyses are meant to be relative, the differences in frequency and magnitude between scenarios are the focus of the analysis, not individual magnitudes and frequencies. It is possible that the frequency of exceedance in one model scenario is higher than in another scenario, and the mean magnitude of exceedance is lower. An example is a model scenario in which temperatures slightly exceed the index value in many years as compared to a scenario with a few years in which temperatures greatly exceed the index value. This is the

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		reason that the analysis considers both the frequency and magnitude of exceedance.
81-33	Page 11O-6 The No Action Alternative reports annual temperature dependent mortality (TDM) of only 16.6% (10% exceedance probability) and 24.4% (the 15% of water years that were critical years). Yet, TDMs well above these were experienced in 2004, 2008, 2014, 2015 and 2021. This may indicate that the 82-year simulation period ending in 2003 fails to capture the current and future critical temperature conditions in the Sacramento River.	For information about the hydrology during the period of simulation, please refer to Master Response 3, Hydrology and Hydrologic Modeling. A 10% exceedance value of temperature-dependent mortality (TDM) indicates that the TDM exceeds that value during 10% of the years. As such, the NAA TDM exceeded 16.6% in about 8 years (roughly 10% of the planning simulation period) of the planning simulation period (water years 1922 through 2003). Therefore, the planning simulation period captures the range of TDM observed in the historical record.
81-34	Page 11P-1 Please provide a copy of the Sites Reservoir Daily Divertible & Storable Flow Tool (version 20210309 and latest version) Excel workbook.	Please see response to comment 81-31 regarding information requests.
81-35	Page 11P-8 NMFS suggests that Figures 11P-3 & 4 show results for Sites without MM FISH-2.1 so the impact of the mitigation measure can be demonstrated.	As described in Master Response 2, Alternatives Description and Baseline, the Wilkins Slough bypass flow criterion is now part of Project operations and has been expanded to cover the October 1 to June 14 period, so there is no longer relevance in showing the effects of Mitigation Measure FISH-2.1. Please also see Master Response 5, Aquatic Biological Resources, for a discussion of flow and mitigation measures.
82-1	East Bay Municipal Utility District (EBMUD) appreciates the opportunity to provide comments on the Sites Reservoir RDEIR/SDEIS. We recognize the singular challenge of developing a major water infrastructure project such as Sites Reservoir and provide these comments in the spirit of collaborative engagement and attention. Reviews were conducted through the lens of potential adverse impacts to Mokelumne River fisheries and wildlife, in addition to EBMUD operations in general. Particular attention was provided	The comment is noted. The Authority and Reclamation appreciate EBMUD's engagement on the Project.

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	to potential interactions between project operations and interior Delta flows and timing, which can influence migration pathway selection for returning Mokelumne origin Chinook salmon and steelhead trout.	
82-2	For a full assessment of impacts to Mokelumne River salmonid populations to be completed, a detailed description of Sites Reservoir operations (including withdrawals and releases) would be needed. Specific plans that would inform a thorough assessment of Sites Reservoir impacts include a Reservoir Operations Plan, Reservoir Management Plan including fisheries management and reservoir water quality, and Standard Operating Procedures. The Sites Project Authority is working with Reclamation and DWR to develop operating agreements that would describe the approach for coordinating operations with Sites and the CVP and SWP operations, respectively. These agreements, along with the plans mentioned above, would provide the information needed to better assess potential impacts to Mokelumne River salmonid populations.	The Project would be a junior water right holder, and, as such, use of its water right is dependent on all senior water rights being met. In addition, the Project must be implemented consistent with all existing water quality standards and regulatory requirements (i.e., state and federal Endangered Species Act requirements) without imposing any additional regulatory burden on a senior water right holder. Thus, the Project is not expected to affect salmon spawning or rearing activities or habitats that support them in the Mokelumne River. In addition, exports of water south of the Delta would be done within the existing transfer window described in the Reclamation Biological Assessment for the 2019 Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project (Bureau of Reclamation 2019b), as well as conditions imposed by Water Right Decision 1641 (State Water Resources Control Board 2000), including the closure of the Delta Cross Channel gates during release of the lower Mokelumne River fall attraction flow. Please see response to comment 82-4 for detailed analysis of effects in the Delta. In addition, please see Master Response 2, Alternatives Description and Baseline, regarding information about the Reservoir Operations Plan.
82-3	EBMUD would be interested in the flow schedules that would be incorporated into the Reservoir Operations Plan that identify the approach for releases, including release schedules and volumes, and interactions with DCC operations. Absent such plans, the RDEIR/SDEIS makes general statements such as "water would be held in storage in Sites Reservoir until requested for release by a Storage Partner. Water releases would generally be made from May to November but could occur at any time of the year,	Modeling results for releases, described in Chapter 5, Surface Water Resources, and Appendix 5B1, Project Operations, show that water may be released from Sites Reservoir for export through the Delta during the transfer window of July to November. The modeling included maximizing releases through the Delta during Below Normal, Dry, and Critically Dry Water Years. Please see Master Response 2,

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	depending on a Storage Partner's need and capacity to convey water to its intended point of delivery." (pg. 2-29) Additional detail is needed to assess the significance of Sites Reservoir operations on central Delta flows that can influence migration pathway selection for adult and juvenile anadromous fish.	Alternatives Description and Baseline, regarding the Reservoir Operations Plan, which will include flow schedules.
82-4	Notable exclusions from the RDEIR/SDEIS included impacts to straying rates of returning Mokelumne River spawners, Delta temperature assessments based on water temperature index values for fall-run Chinook salmon, interior Delta estimates of reach specific survival, and effects to predation rates based on changes to south Delta entrainment. Additions or improvements to the analysis could benefit from: • To assess through-Delta survival, the Delta STARS Model was used. STARS stands for Survival, Travel Time, and Routing Simulation and is based on Perry et al. 2018. From the STARS model website, it is important to note that the STARS model is based on a set of relationships fitted to hatchery-origin late-fall Chinook salmon that migrated through the Delta between late November and mid-March over a five-year period (2007 - 2011). Therefore, model output should be thought of as a "historical expectation." Limited information regarding model assumptions were provided in Appendix 11H and when model data and assumptions deviate from "historical expectation," such deviations should by presented and reviewed within the RDEIR/SDEIS. • For a thorough review of through-Delta survival, we need to see the full-range of model assumptions, route entrainment estimates, and estimates of survival for each of the eight unique migration reaches (in particular the Delta Cross Channel to Mokelumne River and Interior Delta reaches) through the Delta to assess impacts to Delta survival and Mokelumne origin salmon outmigrants. In addition, uncertainty interval values for the estimates of survival should be included for review.	With respect to the exclusions noted by the commenter: An analysis of straying rate of returning Mokelumne River spawners was added to Chapter 11, Aquatic Biological Resources, Impact FISH-4 of the Final EIR/EIS. This does not change the impact determination. Delta temperature assessments are not warranted because reservoir operations have little, if any, effect on Delta water temperatures (Wagner et al. 2011, as cited in Chapter 11 of the Final EIR/EIS), and the analyses of temperature effects showed limited effects from the Project alternatives even in upstream areas (see, for example, the analysis of temperature effects in the Chapter 11, Section 11.4, Impact Analysis and Mitigation Measures, Impact FISH-4, Sacramento River, Far-Field Effects, Temperature Effects subsection). Interior Delta estimates of reach-specific survival would not be affected by the Project alternatives (see further discussion below). Changes in predation rates associated with south Delta entrainment would be consistent with differences in south Delta exports—or example, limited differences during the main spring migration period of juvenile salmonids (see, for example, the discussion of South Delta Entrainment for Impact FISH-4 in Chapter 11).

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		With respect to the Survival, Travel Time, and Routing Simulation (STARS) model, details of model coefficients and other modeling characteristics are provided in the Perry et al. (2018) paper cited in the EIR/EIS. The spreadsheet implementation of the STARS model covers a broad range of Freeport flow conditions (5,000 to 80,000 cubic feet per second), which covers nearly the full range of modeled conditions except in a very small percentage of days over the 82-year time series. With respect to the items suggested by the commenter as being necessary for a thorough review of through-Delta survival with a focus on Delta Cross Channel to Mokelumne River and interior Delta reaches, as shown by Perry et al. (2018:Figures 4 and 8), there is strong evidence of little relationship between survival and discharge for the interior Delta reach. Therefore, there would be little effect in the interior Delta of the Project alternatives relative to the No Project Alternative. With respect to the Delta Cross Channel to Mokelumne River reach, this reach does have evidence for a strong flow-survival relationship (see Perry et al. 2018:Figures 4 and 6). However, the Delta Cross Channel is closed during the main spring period of concern for Mokelumne River salmon outmigrants; therefore, the Project alternatives would not affect flow and survival in these months. A summary of survival differences in June for the Delta Cross Channel reach (i.e., Delta Cross Channel to San Joaquin River via Mokelumne River) has been added to Chapter 11 in Impact FISH-4 and to Appendix 11J, Through-Delta Survival and Delta Rearing Habitat of Juvenile Chinook Salmon, in Section 11J.2, Through-Delta Survival of Juvenile Chinook Salmon, of the Final EIR/EIS. The spreadsheet implementation of the STARS model available for analysis did not include uncertainty interval values as suggested by the commenter,

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		although the breadth of these intervals can be ascertained from the original Perry et al. (2018) paper (see, for example, Figure 6).
82-5	The interior Delta provides multi benefit services to water supply, water quality, and ecosystems, among others. Many of these benefits are influenced by timing and duration of DCC operations. As a central Delta tributary, the Mokelumne River and its anadromous fish populations are heavily influenced by conditions within the interior Delta. The Lower Mokelumne River Partnership (EBMUD, CDFW, USFWS) has been actively engaged in identifying opportunities to reduce the impact on salmonid straying associated with DCC operations. EBMUD welcomes the opportunity to engage with the Sites Project Authority to further develop the analysis on operations and the influence on Mokelumne origin salmonids. Please direct any questions to I-Pei Hsiu (ipei.hsiu@ebmud.com) and she will forward to appropriate staff.	The Authority and Reclamation acknowledge the efforts of the Mokelumne River Partnership with respect to salmonid straying. As described in various locations in the RDEIR/SDEIS (e.g., Chapter 33, Consultation and Coordination and List of Preparers), the Authority and Reclamation are committed to working with and engaging stakeholders related to the operation of the Sites Reservoir.
83-1	I want to add my support to PCFFA's public comment regarding Sites Reservoir.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
83-2	In addition, Sacramento valley summer and early fall temperatures often exceed 100 degrees. Dumping Sites Reservoir superheated water into the Sacramento River during Sacramento Rall Run Chinook returns or Sacramento Winter Run Chinook out migration assures further restriction of fisheries, more legal expense for all parties, and potential federal interaction if Sacramento Fall and or Spring Run Chinook are listed as threaten or endangered. PCFFA has outlined appropriate mitigation preventing further destruction of a public trust resource.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives. The impact analysis in Chapter 11, Aquatic Biological Resources, includes actions to increase survival of anadromous fish populations. Additional discussion of the benefits to anadromous fish can be found in Master Response 5, Aquatic Biological Resources. The mitigation language proposed by the Pacific Coast Federation of Fishermen's Association/Institute for Fisheries Resources in their January 27, 2022, letter of supplemental comments on the RDEIR/SDEIS pertains to the Trinity River. Please see Master Response 8, Trinity River, for responses to comments and questions related to the Project's effects on the Trinity River and its resources. As described in Chapter 2, Project Description and Alternatives, the Project would not affect or result in changes in the operation of the CVP Trinity River Division

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		facilities (including Clear Creek). Reclamation would continue to operate the Trinity River Division consistent with all applicable statutory, legal, and contractual obligations.
84-1	I am very opposed to the disruption of the natural flow of water in the Delta area and the severe impact on the wildlife habitat by the construction of any dam, including the Sites Project, upstream. A driving force behind this proposed project is the short-sighted idea that our water in California can continue to be sucked out of the Delta and aquifers throughout the state and squandered on high water consumption crops, especially those that are to be marketed out of the country. As a life-long resident of Southern California, I am being asked to give up public water, and contribute to the extinction of my state's native plants and wildlife, to enable agriculturists' short-term planning that values profit over science and common sense. Climate change will inevitably cause reductions in our water supply.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
84-2	In San Diego, we are already sacrificing our avocados and other crops we would like to be able to produce, as we formerly did, both as home gardeners and commercial farmers. We are digging up our landscaping and replacing it with more drought tolerant planting (or letting our yards go to weeds and bare dirt). We are saving our rainwater in barrels, taking 1-minute showers and saving the warm-up water in buckets to flush the toilets. Meanwhile, "corporate agriculture" is unsustainably mono-cropping inappropriate almond orchards and demanding to maintain their hugely disproportionate share of our water. How many more dams and how much more habitat destruction will they be demanding before they recognize that the inevitable reality of climate change is that the depleted watersheds and aquifers and empty dams cannot sustain their profits?	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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	Building a dam is a short-term, stopgap “solution” that should not be allowed.	
85-1	I write to you today for the opportunity to oppose the new proposed 13,200 private reservoir in the lower Sacramento River/Upper Bay Delta near willows, CA. It would not be beneficial to our ecosystem. Reservoirs are harmful to our endangered salmon - we have not achieved our salmon recovery goals nor will we ever do if this reservoir is put into place.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
85-2	With this new proposal, it is a violation to the rights of Indigenous Peoples and a violation to the commitments made to Tribes by the federal and state government, including fishing rights and ceremonial and sacred sites protection.	Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding the Authority and Reclamation’s consultation and engagement with Tribes, as well as Reclamation’s fulfillment of federal trust obligations, and Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding Public Trust and California Reasonable Use Doctrines.
85-3	We don’t need more reservoirs that contribute to heat pollution and other sources of pollution that kill salmon and other species that benefit from salmon. We need real climate solutions that honor the lives of salmon and our entire ecosystems’ health and solutions that benefit the livelihoods of Indigenous People and CA residents. I oppose new reservoir projects on our rivers.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
87-1	I thought one of the basics was that there should not be "piece-mealing" under CEQA-- and act like merely local analysis on many issues is sufficient. The first paragraph under Cumulative Impacts says after mentioning that both CEQA and NEPA require assessment of cumulative impacts, "The State CEQA Guidelines go on to state that the types of projects that should be considered in a cumulative impact analysis are ‘closely related past, present, or reasonably foreseeable probably future projects’ (State CEQA Guidelines, Section 15355; see also Section 15130, subd. (b)(1)(A))." Yet, for instance, the document states clearly that ONLY THE SACRAMENTO VALLEY IS CONSIDERED IN THE CLIMATE CHANGE ANALYSIS.	The definition of "piecemealing" is "when an agency segments a project into small parts to avoid full disclosure of environmental effects" (Bass et al. 2012). The RDEIR/SDEIS analyzes the full and complete Sites Reservoir Project; there is no segmentation of the Project and, therefore, no piecemealing. Regarding climate change, Chapter 28, Climate Change, summarizes modeling results associated with climate change and climate change effects. The modeling results and the modeling used for analyzing climate change are provided in Appendix 28A, Climate Change, which includes the effects of climate change on future precipitation as

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	Not even the foothills, hills, and mtns surrounding the Sacramento Valley on three sides??? Timber management policies in the Sacramento River WATERSHED, as well as Klamath, Trinity, Eel, and other watersheds can impact not only regional but even global climate.	reflected in the revised 2035 Central Tendency (CT) results and the modeled Water Storage Investment Program (WSIP) 2070 results (provided as part of the Final EIR/EIS). Section 28.3, Methods of Analysis, in Chapter 28 describes the methods used to evaluate potential effects associated with climate change. The analysis is based on the Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, released by CEQ on August 5, 2016 (Council on Environmental Quality 2016). The 2016 guidance indicates that NEPA analyses should consider (1) the potential effect of the proposed action on climate change by assessing GHG emissions and (2) the effects of climate change on the proposed action and its environmental impacts. Additional information on how climate change was considered in the hydrologic modeling and hydrology analysis can be found in Master Response 3, Hydrology and Hydrologic Modeling. Please also refer to Section 31.3.16, Greenhouse Gas Emissions, in Chapter 31, Cumulative Impacts, which acknowledges that GHGs are global pollutants and climate change is a global issue.
87-2	Also, I am disappointed, and it is another great reason to stop the project, that it is admitted that construction will release more GHGs for 10 years, and then there will be GHG emissions especially in first ten years of operation.	Potential impacts related to greenhouse gas (GHG) emissions are analyzed in Chapter 21, Greenhouse Gas Emissions, which acknowledges that the Project would generate GHG emissions that may, either directly or indirectly, have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. However, mitigation is provided to ensure that Alternatives 1, 2, and 3 would not result in a significant GHG impact.
87-3	Also, seeing that water allotments far exceed reality, and you have optimistic forecasts, a	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives and the adequacy of the impact analysis.

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	new EI document must assess GHG emissions of a partially filled Sites dam which could impact the immediate area more -- but not some areas from which it wishes to steal water to privatize.	
87-4	I note that the bullet point on the top of page 31-2 says, "whether a project would result in impacts on the same environmental resources that would be affected by the implementation of Alternatives 1, 2, and 3 (collectively referred to as the Project); projects that would not affect the same resources were considered outside the scope of the cumulative impact analysis. For example, the Project would not change the environment within Solano County; therefore, this cumulative impact analysis did not consider changes that would occur under the Solano County Multi-Species Habitat Conservation Plan (HCP)." I disagree. Even if there is no direct infrastructure related to the Sites project within Solano County, there is so much water shuffling proposed (much of which does not seem destined to flow down the Sacramento River into Suisun Bay and to San Pablo & San Francisco Bays) that there indeed may be an impact on riparian area and other species due to lower flows of the Sacramento River due to increased water diversions despite general drought conditions. I am concerned that there was no serious analysis of the impact on Sites Dam on other water facilities in the general region (and their drainages). I believe that if those watersheds are not analyzed in this document, THEN THOSE WATER FACILITIES AND REGIONS MUST BE OFF-LIMITS FOR SITES RESERVOIR TO OBTAIN WATER FROM !	The entire Sacramento River watershed is represented in the hydrologic modeling used to analyze the impacts of the Project. Information about the hydrology and hydrologic modeling used in the EIR/EIS can be found in Master Response 3, Hydrology and Hydrologic Modeling. The analyses of effects on vegetation and wetland resources (Chapter 9), wildlife resources (Chapter 10), and aquatic biological resources (Chapter 11) take these modeling results into account and fully disclose potential impacts related to changes in flows.
87-5	It especially appalling that in the area with the highest concentration of indigenous people living on or near the land in California (in the lower Trinity River area) do not even get an	Please see Master Response 7, Tribal Coordination, Consultation, and Engagement, regarding Tribal coordination and Master Response 8, Trinity River, for responses to comments and questions related to the Project's effects on the Trinity River and its resources. Climate change

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	analysis of whether the various Records of Decisions will impact the species on which their culture, nutrition, forest, and spirituality is based. The Hupa, Karuk, and Yurok deserve better. The Trinity -- Klamath system salmon rely on cold (sometimes stored for awhile) Trinity water -- you should analyze impact on Yurok in lower Klamath -- as well of course of the Hupa, Karuk, and other indigenous peoples along the Trinity. This document gets a ZERO in terms of CLIMATE CHANGE and ENVIRONMENTAL JUSTICE analyses. Have some respect for the First peoples, please!	and environmental justice impacts are analyzed in Chapter 28, Climate Change, and Chapter 30, Environmental Justice and Socioeconomics, respectively.
87-6	The lower part of page 31-3 tells of the 82-year hydrologic model they somehow believe relates to the project. Yet, there were massive storms in 1862-1863, a massive drought in 2021 and atmospheric rivers in December 2021 which should be accounted for in such analyses. Thus the dates for analysis should be from 1860 through 2021 or 2022 -- while considering various scientists' conclusions over the past two or three years of the American West likely being 20 years into perhaps a general 1000-year drought.	Please see Master Response 3, Hydrology and Hydrologic Modeling, regarding hydrologic modeling and the modeling period selected for analysis.
87-7	Withdraw this document, and thoroughly analyze the whole plumbing system with new climate analyses.	The climate change analysis meets the requirements of CEQA and NEPA. Chapter 28, Climate Change, summarizes modeling results associated with climate change and climate change effects. The modeling results and the modeling used for analyzing climate change are provided in Appendix 28A, Climate Change, which include the effects of climate change on future precipitation as reflected in the revised 2035 CT results and the modeled Water Storage Investment Program (WSIP) 2070 results (provided as part of the Final EIR/EIS). Section 28.3, Methods of Analysis, in Chapter 28 describes the

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		methods used to evaluate potential effects associated with climate change. The analysis is based on the Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, released by CEQ on August 5, 2016 (Council on Environmental Quality 2016). The 2016 guidance indicates that NEPA analyses should identify climate change effects on a proposed action and the potential effects of the proposed action on climate change by assessing GHG emissions. Estimated GHG emissions for the Project are included in Chapter 21, Greenhouse Gas Emissions. Additional information on how climate change was considered in the hydrologic modeling and hydrology analysis can be found in Master Response 3, Hydrology and Hydrologic Modeling. Please also see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
89-1	I am Ronda Azevedo Lucas, an attorney recently retained by the Maxwell Unified School District ("MUSD") to represent them in the deliberations regarding the construction of Sites Reservoir Project ("Project"). On behalf of MUSD, I appreciate the opportunity to provide these comments on the Project's Revised Draft Environmental Impact Report/Supplemental Environmental Impact Statement, State Clearinghouse No. 2001112009 ("RDEIR/SDEIS") As you are well aware, MUSD has been very involved in this process, and has consistently stated its concern that the Project will result in significant environmental impacts to the community of Maxwell and its surrounding areas due to the Project's unanalyzed and therefore unmitigated impacts to traffic, school bus routes, safe passage issues, and potential emergency response needs, including fire, sheriff and first responder personnel for the MUSD schools staff, students and residents within the community of Maxwell as required under the California Environmental Quality Act ("CEQA"). (Cal. Pub. Res.	The Authority and Reclamation appreciate the Maxwell Unified School District's (MUSD's) engagement on the Project. Responses to individual comments are provided below. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS and responses to comments in support or opposition of the Project. Please see Master Response 2, Alternatives Description and Baseline, for information on use and incorporation of mitigation measures. Please also see Master Response 9, Alternatives Development, regarding the development of the reasonable range of feasible alternatives. Traffic impact analysis is discussed in Chapter 18, Navigation, Transportation, and Traffic; impacts pertaining to school bus routes are addressed in Impact TRA-5 and Impact TRA-4 discusses emergency access. In addition, Chapter 26, Public Services and Utilities, Impact UTIL-1 pertains to public services such as schools,

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	Code §§ 21000, et seq.; Cal. Code Regs., tit. 14, § 1520.) MUSD supports this Project provided the Project properly analyzes and mitigates its impacts on the community. However, the Project is unlike any entity that has ever come into the community, or arguably the entire county of Colusa, and presents some unique challenges MUSD has never before had to face. To be clear, MUSD is hoping to unequivocally support this Project but, at this date, cannot due to the lack of inadequate range of alternatives, proper analysis, and mitigation.	fire, and police, and Chapter 27, Public Health and Environmental Hazards, Impacts HAZ-4 and HAZ-5a, relate to adopted emergency response plans and emergency evacuation plans.
89-2	MUSD consists of three schools, Maxwell Elementary School, Maxwell Middle School and Maxwell Senior High School providing public education to children located throughout Maxwell and its surrounding communities including Sites, Lodoga, Leesville, Stonyford and other communities within the Project site. MUSD's total student population is approximately 340 students[Footnote 1: https://www.cde.ca.gov/sdprofile/details.aspx?cds=06616060000000. Accessed: January 28, 2022] and the vast majority are bused to MUSD schools on all of the roads that will be impacted by this Project, including but not limited to Oak Street, North Street, McDermott Road, Delevan Road, Maxwell-Sites Road and Sites-Lodoga Road. MUSD is nestled in the community of Maxwell, whose current population is stable at approximately 1,076 residents.[Footnote 2: https://www.worldpopulationreview.com/us-cities/maxwell-ca-population. Accessed: January 28, 2022] Within the entire community, the sole stoplight is a four-way stop that blinks red only in all directions, at the intersection of Oak Street and Old Highway 99. The main artery within Maxwell is Oak Street which begins at the Interstate 5 ("I-5") off-ramp and runs west through Maxwell all of the way to the Project site. Oak Street, as acknowledged in the RSEIR/SDEIS at 18-7, becomes Maxwell-Sites Road just west of Maxwell Senior High School and the community of Maxwell. Maxwell-Sites Road then turns into Sites Lodoga Road as you continue west through the Project Site. "Sites Lodoga Road is an east-west,	The commenter provided information regarding the schools and roadway system in the community of Maxwell. Chapter 26, Public Services and Utilities, Section 26.2.1.3, Schools, of the RDEIR/SDEIS describes existing conditions. It identifies that the MUSD consists of three schools serving approximately 327 students. This data was available from the MUSD website in a Local Control Accountability Plan and Annual Update for 2018–2019 (cited as Maxwell Unified School District 2019 in the RDEIR/SDEIS). The text of Section 26.2.1.3 has been modified in the Final EIR/EIS to reflect the newer information provided by MUSD. This edit does not change conclusions or impact determinations identified in the impact analysis or raise a significant environmental concern. The commenter also provides summary content of the local roadway systems; the comment is noted.

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	two-lane major collector road that extends through the community of Maxwell, which is adjacent to 1-5, and provides an important emergency and evacuation route in a limited roadway network to and from the rural communities of Lodoga and Stonyford." [Footnote 3: RDEIR/SDEIS at 2-59]	
89-3	Given the physical environmental setting and the fact that this Project anticipates more workers (1,650 during peak construction) than Maxwell's entire existing population and contemplates major changes to roadways that will directly impact "an important emergency and evacuation route in a limited roadway network" that runs right by Maxwell Senior High School, Maxwell Fire Department and through the heart of Maxwell, it is improper that the RDEIR/SDEIS failed to undertake a true traffic study and identify appropriate mitigation and failed to consider an adequate range of alternatives for impacts to MUSD, all public services and the entire community.	As stated in Chapter 2, Project Description and Alternatives, construction traffic would be routed around the community of Maxwell as part of the Project and per the traffic management plan (TMP). In Chapter 2, Figure 2-35 shows the locations of all construction access, including how the town of Maxwell would be avoided during construction. The impact of additional construction traffic on emergency and/or evacuation routes is discussed in Chapter 27, Public Health and Environmental Hazards. In Chapter 27, Impact HAZ-4 addresses the potential for the Project to interfere with an adopted emergency response plan or emergency evacuation plan. The traffic analysis in Chapter 18, Navigation, Transportation, and Traffic, appropriately analyzes potential impacts of construction traffic based on the alternatives description in Chapter 2, which identifies that construction traffic would not enter the community of Maxwell. Impact TRA-4 in Chapter 18 also addresses emergency access during construction. As described in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, BMP-16, Development and Implementation of a Construction Equipment, Truck, and Traffic Management Plan (TMP), will ensure emergency access on roadways during Project construction. The TMP will prohibit construction traffic in the community of Maxwell and require advance notice and coordination with police and

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		fire departments to further ensure emergency access. See Appendix 2D for the full text of BMP-16. See Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for a description of the adequacy of the RDEIR/SDEIS and why the impact analyses meet the requirements of CEQA and NEPA.
89-4	The RDEIR/SDEIS does not comply with the California Environmental Quality Act ("CEQA") and its implementing regulations (Pub. Res. Code §§ 21000, et seq.; Cal. Code Regs. tit. 14 §§ 15000, et seq., "CEQA Guidelines"). The RDEIR/SDEIS does not include sufficient information to evaluate potential environmental impacts both to schools and related to schools. Through this letter, MUSD wishes to emphasize this Project has the potential to have a profound negative effect on MUSD's staff, students, and their families and residents who reside in and near the Project site. Therefore, MUSD requests the Sites Project Authority and U.S. Bureau of Reclamation revise the RDEIR/SDEIS to address the serious deficiencies identified in this letter, undertake a proper traffic study and develop appropriate mitigation measures for impacts that are identified as significant, and present, consider and analyze a reasonable range of alternatives and then recirculate the RDEIR/SDEIS as required by CEQA. (CEQA Guidelines § 15088.5).	The RDEIR/SDEIS evaluated impacts on traffic and transportation during construction and operations in Chapter 18, Navigation, Transportation, and Traffic. The potential increase in traffic on Maxwell Colusa Road/Oak Street/Maxwell Sites Road as it relates to MUSD schools is not expected to result in a significant change in traffic congestion, pedestrian safety (particularly students walking or bicycling to or from MUSD schools), response times for emergency first responders to the school, bus travel times within Maxwell, or accidents on roadways surrounding the schools. Please see responses to comments 89-10 and 89-11 regarding safety and schools related to transportation and traffic (including busing routes) and the construction and operations traffic impact analysis conducted in Chapter 18. The RDEIR/SDEIS also evaluated impacts on adopted emergency and evacuation routes in Chapter 27, Public Health and Environmental Hazards, Impact HAZ-4; evaluated emergency access in Chapter 18, Impact TRA-4; and evaluated emergency response in Chapter 26, Public Services and Utilities, Impact UTIL-1.
89-5	A. The RDEIR/SDEIS does not meet its purpose as an informational document because it fails to provide an adequate description of the environmental setting related to schools. One of CEQA's basic purposes is to inform government decision-makers and the public about the potential significant environmental effects of proposed projects and to disclose to the public the reasons for approval of a project that may have significant	The existing setting for public services is described in Chapter 26, Public Services and Utilities, which identifies the local schools within the study area and the attendance. With the exception of the MUSD, none of the school districts in Glenn or Colusa Counties are in close proximity (5 miles) of any Project facilities or would use any of the roads affected by the Project as school bus routes. The existing

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	environmental effects. (CEQA Guidelines § 15002(a)(1) and (a)(4).) In line with this goal, the preparer of an EIR must make a genuine effort to obtain and disseminate information necessary to the understanding of impacts of project implementation. (See, CEQA Guidelines § 15151; Sierra Club v. State Board of Forestry (1994) 7 Cal.4th 1215, 1236). An EIR must describe the existing environmental conditions in the vicinity of the proposed project from both a local and regional perspective, which is referred to as the "environmental setting." (CEQA Guidelines § 15125.) This description of the environmental conditions serves as the "baseline" for measuring the qualitative and quantitative changes to the environment that will result from the project and for determining whether those environmental effects are significant. "In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect insignificant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects." (CEQA Guidelines § 15126.2(a), (italics added).)	setting for transportation and traffic is described in Chapter 18, Navigation, Transportation, and Traffic. The existing setting is described with sufficient detail to support an impact analysis. For example, Chapter 18 describes the roadway classifications and roadway capacities in the local study area, as well as different modes of transportation and the transit system. This information is used, in conjunction with the details of the Project description identified in Chapter 2, Project Description and Alternatives, to disclose impacts during construction and operations.
89-6	MUSD's schools and reliance on the "limited roadway network" that exists within and around Maxwell, including the high school's physical location at Oak Street are all a critical part of the Project's environment and should be considered throughout the RDEIR/SDEIS impact categories. Rather than clearly identifying the limited roadway network as it exists, the RDEIR/SDEIS improperly and summarily asserts construction traffic will be prohibited in the community of Maxwell due to the future development of a traffic management plan and the future improvements of existing roads improving them to a point they can handle "Project generated construction traffic" and allegedly bypass utilizing Oak Street. Based on this conclusory assertion	Please see response to comment 89-5 regarding the description of the existing roadways in Chapter 18, Navigation, Transportation, and Traffic. Please see responses to comments 89-10 and 89-11 regarding safety and schools as they relate to transportation and traffic (includes potential increase in traffic on Maxwell Colusa Road/Oak Street/Sites Maxwell Road as it pertains to MUSD schools) and the construction and operation traffic impact analysis conducted in Chapter 18.

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	relying upon a non-existent traffic management plan and planned future road improvements, the RDEIR/SDEIS avoids any meaningful traffic study and fails to examine "changes in the existing physical conditions in the affected areas as they exist at the time" as required by CEQA. The Supreme Court stated: "By comparing the proposed project to what could happen, rather than to what was actually happening, the District set the baseline not according to 'established levels of a particular use,' but by 'merely hypothetical conditions allowable' under the permits. (San Joaquin Raptor Rescue Center v. County of Merced (2007) 149 Cal.App.4th 645, 658.) The Supreme Court has further explained "[a]n approach using hypothetical allowable conditions as the baseline results in 'illusory' comparisons that 'can only mislead the public as to the reality of the impacts and subvert full consideration of the actual environmental impacts,' a result at direct odds with CEQA's intent. (Environmental Planning & Information Council v. County of El Dorado (1982) 183 Cal.App.3d 229, 358.) "A long line of Court of Appeal decisions holds, in similar terms, that the impacts of a proposed project are ordinarily to be comparted to the actual environmental conditions existing at the time of CEQA analysis, rather than to allowable conditions defined by a plan or regulatory framework. This line of authority includes cases where a plan or regulation allowed for greater development or more intense activity than had so far actually occurred, as well as cases where actual development or activity had, by the CEQA analysis was begun, already exceeded that allowed under the existing regulations. In each of these decisions, the appellate court concluded the baseline for CEQA analysis must be the 'existing physical conditions in the affected area', that is the 'real conditions on the ground.'" (Sunnyvale West Neighborhood Association v. City of Sunnyvale City Council (2010) 190 Cal.App.4th 1351, 1374 quoting Environmental Planning & Information Council v. County of El Dorado, supra, 131 Cal.App.3d at 354; Save our Peninsula Committee v. Monterey County Bd. of Supervisor (2001) 87 Cal.App.4th 99, 121.) The	

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	RDEIR/SDEIS as written violates CEQA and case law. The document needs to undertake a proper traffic analysis based on the existing conditions including existing roadways and traffic circulation patterns in order to ensure the RDEIR/SDEIS does not continue to "mislead the public as to the reality of the impacts and subvert full consideration of the actual environmental impacts on the actual environmental impacts" of the Project to MUSD, other emergency and first responder personnel, our students, staff and residents of Maxwell and its surrounding communities.	
89-7	B. The RDEIR/SDEIS does not meet its purposes as an information document because it fails to identify and analyze all impacts on school facilities under CEQA's threshold of significance for Public Services impacts. In order to support a determination that environmental impacts are insignificant and can therefore be scoped out of a RDEIR/SDEIS, the lead agency must include in either the Initial Study or the RDEIR/SDEIS the reasons the applicable environmental effects were determined to be insignificant. (Pub. Res. Code § 21100 (c); CEQA Guidelines § 15128.) An unsubstantiated conclusion than an impact is not significant without supporting information or explanatory analysis, is insufficient; the reasoning supporting the determination of insignificance must be disclosed. (See City of Maywood v. Los Angeles Unified Sch. Dist. (2012) 208 Cal.App.4th 362, 393; San Joaquin Raptor/Wildlife Rescue Ctr. v. County of Stanislaus (1994) 27 Cal.App.4th 713; (finding that project will not pose biological impacts to wetlands must be supported by facts and evidence showing the lead agency investigated the presence and extent of wetlands on the property, which analysis must be disclosed to the public).)	The RDEIR/SDEIS included evaluation of impacts on schools in Chapter 26, Public Services and Utilities. Section 26.2, Environmental Setting, includes a description of the schools in Colusa County, and the CEQA thresholds of significance for schools are identified. The RDEIR/SDEIS did not dismiss an evaluation of schools and includes evaluation of schools during both construction and operations phases under Impact UTIL-1. In addition, Chapter 18, Navigation, Transportation, and Traffic, evaluates school bus routes under Impact TRA-5 and evaluates construction and operations impacts on traffic levels in the local study area (Impact TRA-1). Please also see responses to comments 89-8, 89-10, and 89-11 regarding transportation, traffic, and schools.
89-8	The approach utilized in the RDEIR/SDEIS, as noted above, relied upon hypothetical future conditions that may or may not occur with respect to traffic and its associated impacts with conclusory statements that ignored and dismissed the Project's impacts to schools, particularly as it pertains to busing routes. The RDEIR/SDEIS fail to analyze all potential impacts to	Please see responses to comments 89-10 and 89-11 regarding safety and schools related to transportation and traffic (including busing routes) and the construction and operations traffic impact analysis conducted in RDEIR/SDEIS Chapter 18, Navigation, Transportation, and Traffic, specifically Impacts TRA-1 and TRA-5. As described in

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	MUSD's students and staff including (1) whether other impacts of the proposed Project, such as increased traffic, noise, or air pollutants surrounding MUSD facilities could impact the District's need for new or physically altered school facilities; (2) whether other impacts of the proposed Project could otherwise interfere with MUSD's ability to accomplish its own performance objectives; (3) whether the Project's impacts could interfere with emergency response including but not limited to fire, sheriff and/or first responder personnel to MUSD facilities or anywhere within the Fire District's service area to levels below accepted standards; (4) whether busing routes will required to be altered even under the alleged, to be create Traffic Management Plan as the roads identified, specifically, Delevan, McDermott, Maxwell Sites and Lodoga Sites Road are all utilized and integral to busing routes; and (5) whether safe passage exists to schools and to and from bus stops along the bussing routes; and (6) whether existing bus stops along bussing routes will be negatively impacted by the Project's increased traffic and congestion created within the community of Maxwell and surrounding areas. Moreover, while the RDEIR/SDEIS correctly states busing routes are set by MUSD's superintendent, it completely ignores the other legal mandates applicable to busing routes for, example, students who are foster children, homeless, disabled, or have an individual education program.[Footnote 4: Such considerations include but are not limited to the Department of Transportation's Safe Routes to School Programs and the California Department of Education Special Education Transportation Guidelines; Cal. Ed. Code § 41850(b); Id. At § 41851.2; Id. At § 56040; Id. At § 56195.8(b).] The RDEIR/SDEIS reliance only upon policy without considering underlying applicable law or conducting a proper traffic study, renders the RDEIR/SDEIS inadequate under CEQA as an information document.	response to comment 89-10, recreationist trip volumes during days when school is in session are minimal (approximately one vehicle every 2 minutes) and would not have a substantive effect on school operations and facilities. The impact analysis in Chapters 18 and 26, Public Services and Utilities, evaluated the alternatives as described in Chapter 2, Project Description and Alternatives. That chapter identifies predesignated construction route(s) as part of the alternatives, and the impact analysis analyzes construction traffic using these routes. Construction route(s) around the community of Maxwell were designated in the RDEIR/SDEIS because of concerns regarding construction truck trips through downtown Maxwell identified during public comments on the 2017 Draft EIR/EIS. Therefore, the Authority and Reclamation took into consideration previous stakeholder comments and adjusted the Project accordingly to reduce concerns regarding construction truck trips. Emergency access for emergency responders is analyzed under Impact TRA-4 in Chapter 18, and emergency response is discussed in Chapter 26, Impact UTIL-1. The Authority will work with emergency service providers, including first responders, during construction and operations, as explained in Chapter 18, Impacts TRA-1 and TRA-4; Chapter 26, Impact UTIL-1; and Appendix 2D, Best Management Practices, Management Plans, and Technical Studies. Appendix 2D describes the development and implementation of a construction equipment, truck, and traffic management plan (BMP-16, Development and Implementation of a Construction Equipment,

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		Truck, and Traffic Management Plan (TMP)) during construction. BMP-16 has been revised in the Final EIR/EIS to include a prohibition of construction traffic in the community of Maxwell. Likewise, Appendix 2D describes the development and implementation of the Recreation Management Plan prior to and during operations. One of the purposes of the Recreation Management Plan is to …describe the coordination with Glenn and Colusa Counties to support emergency services at the recreational facilities and will describe requirements for fire suppression in the recreation areas." The Authority will be responsible for maintaining fire-suppression equipment (e.g., fire extinguishers, fire blankets) at recreational facilities, as well as in the administrative buildings, and all Authority vehicles. In addition, Authority employees will be trained in fire-suppression techniques and use of all fire-suppression equipment at least once a year and in documenting the training. A discussion of the potential impacts on school bus routes is included in Chapter 18, Section 18.4, Impact Analysis and Mitigation Measures, Impact TRA-5. As described for Alternatives 1 and 3 under Impact TRA-4, a temporary shoofly would allow through access on the existing Sites Lodoga Road during construction, which would maintain emergency and school bus access.
89-9	Finally, the RDEIR/SDEIS fails to adequately analyze cumulative public services impacts on MUSD due to the sheer volume or road trips that will be created by an estimated work force that is larger than the actual population of Maxwell and is anticipated "[a]t the peak of construction, … current estimates are that 1,552 to 1,657 construction personnel would be working	Chapter 31, Cumulative Impacts, analyzes the Project's impact on navigation, transportation, and traffic, which describes the potential for the Project to cause an incremental impact that would be significant when added to the transportation and traffic impacts from other past, present, and reasonably foreseeable future actions.

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	on the Project … [and] would likely commute to construction sites."[Footnote 5: RDEIR/SDEIS at 18-20.] "At the peak of construction …, current estimates project between 701 and 978 daily haul trips for conveyance facilities and approximately 1,760 daily offsite haul trips for reservoir facilities." [Footnote 6: Id. At 18-20] RDEIR/SDEIS to be commuting to work due to the lack of available housing within Maxwell. Further "[i]t is estimated that approximately 187,000 recreational visitors per year would visit the Sites Reservoir and its recreation area for all or part of a day" with it "anticipated that 70% of recreational use would be during the primary recreation season (i.e. May 1 through September 20)." [Footnote 7: RDEIR/SDEIS at 18-21] The majority of these trips will arrive via 1-5, driving through Oak Street right past both the fire station and the high school on a two lane road that ultimately turns into Maxwell Sites Road just west of the high school.[Footnote 8: Id. At 18-22] None of this information was consider for its impacts on any public services, even though the primary recreation season occurs, in part, during the school year and is assumed to take thousands of individuals on a two-lane road past the high school. The traffic alone will reduce response times for all fire, sheriff, and first responder personnel. Moreover, it will increase potential demand for fire, sheriff and first responder calls to service this massive influx of people which may further diminish response times and availability to MUSD facilities and the citizens of Maxwell and its surrounding communities. The traffic will also increase risk to staff, students and their families as they arrive at MUSD schools, will increase travel times, and will increase busing times thereby increasing staff costs, wear and tear on busses, and most importantly impacting the students who are forced to spend even more time on buses in order to get to and from school. In addition, the lack of a traffic analysis has prevented any consideration of impacts to the safety of the existing bus stops, safe passage to and from bus stops and any needed changes to those bus stops. Failing to address any of these issues renders the current	For transportation and traffic, potential cumulative impacts are dependent on the phase of the projects (construction or operations phase), any overlap of the construction schedule with the Project, and the distance to the Project. For construction, only two projects were identified that could result in a cumulative impact: the Maxwell Intertie Project and the South Willows Residential Development Project. Both projects were assessed, and it was determined that they would not have cumulative impacts. For operations, although information on the number of trips associated with the other projects is not readily available, the number is expected to be low based on typical operations for these types of projects, especially on the local roads near Sites Reservoir. Other roads associated with Sites Reservoir will have a negligible increase in traffic associated with the other local projects. Impacts of construction on schools in the MUSD and the impacts of recreation traffic on schools and emergency services are analyzed in Chapter 18, Navigation, Transportation, and Traffic; Chapter 16, Recreation Resources; Chapter 26, Public Services and Utilities; and Chapter 27, Public Health and Environmental Hazards. Please see response to comment 89-10 regarding potential traffic impacts in the City of Maxwell and on MUSD schools and response to comment 89-11 regarding safety and schools related to transportation and traffic and the construction and operations traffic.

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	RDEIR/SDEIS insufficient. Conclusory comments in support of environmental conclusions are generally inappropriate. (People v. County of Kern (1974) 39 Cal. App.3d 830, 840-842. The RDEIR/SDEIS's statutory goal of public information regarding the proposed Project has not been met. The document provides no information to the public to enact it to understand, evaluate and respond to its bare assertions. (Laurel Heights Improv. Assoc. of San Francisco v. Regents of Univ. of Calif. (1988) 47 Cal.3d 376, 404.)	
89-10	C. The RDEIR/SDEIS analysis of traffic/transportation/circulation is inadequate, particularly as it relates to schools. The RDEIR/SDEIS is required to address potential effects related to traffic, including noise, air quality, and other issues affecting schools. (Pub. Resources Code §§ 21000, et seq.; Cal. Code Regs., tit. 14 §§ 15000, et seq.; Chawanakee Unified Sch. Dist. v. County of Madera (2011) 196 Cal.App.4th 1016.) The RDEIR/SDEIS treatment of traffic, particularly as it relates to MUSD schools is inadequate. As explained above, the RDEIR/SDEIS inappropriately relies upon a yet to be created traffic management plan and blanket assertion that Project traffic will not be allowed to travel through Maxwell. These assertions and conclusions are unsupported and, had a proper traffic study been completed as required by CEQA, the RDEIR/SDEIS would have analyzed safety issues related to traffic impacts such as reduced pedestrian safety, particularly as to students walking or bicycling to or from MUSD schools, potentially reduced response times for fire, sheriff and first responder personnel traveling to these schools; increased bussing times due to increased road usage; and increased potential for accidents due to the increased traffic.	Both operations and construction impacts related to traffic were evaluated in comprehensive traffic studies. For operations, the transportation analysis of the Project included in the RDEIR/SDEIS focuses on the peak recreational season, when the reservoir would get the heaviest use. As noted in Section 18.3, Methods of Analysis, of Chapter 18, Navigation, Transportation, and Traffic, the peak recreational season is expected to occur between May 1 and September 20, with most water-based recreation occurring on weekends and holidays. Based on the 2021- 2023 school calendars for the Maxwell Elementary/Middle School and Maxwell High School (Maxwell Unified School District 2020, 2021), the first day of school occurs in early August and the last day of school occurs in early June. While there is some overlap between the school year and the primary recreational season, most of the overlap occurs in the shoulders of the peak recreational season (e.g., May and September). In addition, even during the summer overlap period (i.e., August), peak recreational use would occur primarily on weekends and holidays when school is not in session. Section 18.3, Methods of Analysis , of Chapter 18 states that "It is estimated that approximately 187,000 recreational visitors per year would visit the Sites Reservoir and its recreation areas…[and] it is

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		anticipated that 70% of recreational use would be during the primary recreational season (i.e., May 1 through September 20), with approximately 98,000 total visitors on weekends and holidays during this period." Based on an average of 2.6 persons per vehicle, the analysis in the RDEIR/SDEIS assumed the worst case of 820 round trips per day (during weekends and holidays). Recreational trips will be lower during days when school is in session. The peak recreational season will have 70% of the 187,000 annual trips, and 98,000 will occur on weekends and holidays. Based on that calculation, only about 31,000 will occur on weekdays from May 1 through September 20. There are 101 weekdays during that period. Based on the occupancy of 2.6 persons per vehicle, there would be approximately 125 additional daily recreational trips on weekdays. Recreationists arriving at recreational sites in the Project area would be spread out over several hours. In other words, many of the vehicle trips would likely not occur during hours when students are arriving at or leaving school. As a conservative assumption, recreational trips arriving in the morning would be spread out over 4 hours (likely more spread out, and certainly more spread out in the afternoon). Therefore, there would only be, at most, approximately 30 vehicles per hour arriving in the broad Project area on school days during May and August. At these volumes (approximately one vehicle every 2 minutes), the change in trips under operating conditions would be minimal. The type of traffic/safety study requested by the commenter is not needed to conclude that the potential increase in traffic on Maxwell Colusa Road/Oak Street/Maxwell Sites Road as it relates to MUSD

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		schools is not expected to result in a significant change in traffic congestion, pedestrian safety (particularly students walking or bicycling to or from MUSD schools), response times for emergency first responders to the school, bus travel times within Maxwell, or accidents on roadways surrounding the schools. In addition, as discussed in Chapter 2, Project Description and Alternatives, the Authority will work with the County of Colusa to identify and implement improvements within Maxwell, such as lighted pedestrian crossings, stop signs, and other traffic calming features to ensure the Project-related trips would not have a substantial effect on the transportation system. Because the Project would result in a realignment of Sites Lodoga Road and construction of the bridge, a qualitative analysis was conducted to determine the impacts of changes to the existing school bus route between Lodoga and Maxwell along Sites Lodoga Road and Maxwell Sites Road. A discussion of the potential impacts on school bus routes is included in Section 18.4, Impact Analysis and Mitigation Measures, (Impact TRA-5) in Chapter 18. For construction, the transportation analysis of the Project included in the RDEIR/SDEIS assesses transportation effects during construction for two types of trips to and from the different areas within the Project site. Section 18.4, Impact Analysis and Mitigation Measures, of Chapter 18 provides information regarding Project impacts related to increased traffic on construction access roadways. Refer to Impact TRA-1 through Impact TRA-5 in Chapter 18 for the disclosure of transportation and traffic impacts related to construction.

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		A TMP is a typical approach to minimizing construction impacts related to traffic and transportation. Recommendations included in the TMP are based on an evaluation of the types of construction activities, potential roadway/lane closures, potential impacts on the traveling public, and potential concerns from key stakeholders. The purpose of the TMP is to provide recommendations on what strategies are needed to minimize impacts on the traveling public, with safety as the highest priority. Detailed construction plans are currently not available. An updated and more detailed TMP would be developed in the next stage of the Project when more detailed construction plans are available. Based on the current Project construction information provided in Chapter 2 and Appendix 2C, Construction Means, Methods, and Assumptions, lane closures on roadways providing service to MUSD schools are not expected during construction of the Project during school operating hours, including during the realignment of Sites Lodoga Road and construction of the bridge. A discussion of the potential impacts on the school bus route is found in Section 18.4, Impact Analysis and Mitigation Measures, (Impact TRA-5) of Chapter 18. BMP-16, Development and Implementation of a Construction Equipment, Truck, and Traffic Management Plan (TMP), in Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, will be revised to include a prohibition of construction traffic in the community of Maxwell. Construction traffic, including commuting construction workers and deliveries of materials and equipment, will be prohibited on Oak Street from Old Highway 99 to

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		Sutton Road. The Authority will work with the contractor(s) to develop a monitoring and reporting plan to ensure compliance with this measure.
89-11	The requirement to analyze student safety issues is rooted in both the California Constitution and CEQA. Article 1, section 28 (c) of the California Constitution states that all students and staff of primary, elementary, junior high and senior high schools have the inalienable right to attend campuses that are "safe, secure and peaceful." CEQA is rooted in the premise that "the maintenance of a quality environment for the people of this state now and in the future is a matter of statewide concern." (Pub. Res. Code § 21000(a).) Naturally, safety is crucial in the maintenance of a quality environment. "The capacity of the environment is limited, and it is the intent of the Legislature that the government of the state take immediate steps to identify any critical thresholds for health and safety of the people of the state and take all coordinated actions necessary to prevent such thresholds being reached." (Pub. Resources Code § 21000 (d).) The Legislature has made clear in declarations accompanying CEQA's enactment that public health and safety are of great importance in the statutory scheme. (Pub. Res. Code §§ 21000 (b), (c), (d), (g); 21001 (b), (d) (emphasizing the need to provide for the public's welfare, health, safety, enjoyment and living environment.) (California Building Industry Assn. v. Bay Area Air Quality Mgmt. Dist. (2015) 62 Cal.4th 369, 386). In order to fully understand these issues, MUSD requires the RDEIR/SDEIS to undertake a proper traffic study rather than rely on a hypothetical future condition of the existing environment. Further, alternatives must be presented that take into consideration and mitigate for the traffic impacts including but not limited to: 1) The existing and anticipated vehicular traffic and student pedestrian movement patterns to and from school sites, ad including consideration of bus routes. 2) The impact(s) on increased vehicular movement and volumes based on existing, actual conditions caused by the Project, including but not	Please see response to comment 89-10 regarding safety and schools related to transportation and traffic and the construction and operations traffic impact analysis conducted in Chapter 18, Navigation, Transportation, and Traffic. The impact analysis in Chapter 18 relies on existing data and reasonable assumptions predicated on facts regarding the local and regional transportation and traffic setting from various sources, including general plans and regional transportation plans (e.g., Table 18-6, Table 18-7, and Section 18.2.3, Modes of Transportation Other Than Private Vehicles, of Chapter 18) and coordination with Colusa County Public Works. As described in response to comment 89-10, based on recreational trip volumes (approximately one vehicle every 2 minutes), the change in trips under Project operating conditions would be minimal and would not have a considerable effect on cumulative conditions. Cumulative impacts associated with transportation and traffic are assessed in Chapter 31, Cumulative Impacts, Section 31.3.13, Navigation, Transportation, and Traffic. Emergency access for emergency responders is analyzed under Impact TRA-4 in Chapter 18, and emergency response is discussed in Chapter 26, Public Services and Utilities, Impact UTIL-1. Under Impact TRA-4, the analysis identifies that level of service would not be substantially reduced during Project construction or operations, and additional trips would not contribute to inadequate emergency access. Roadway improvements would occur as part of the Project, which would facilitate emergency access (e.g., the bridge under Alternative 1 or 3 and shoulder improvements). Infrastructure would

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	limited to potential conflicts with school pedestrian movement, school transportation, and busing activities to and from MUSD facilities; 3) The estimated travel demand and trip generation, trip distribution and trip assignment by including consideration of school sites, the limited, existing roadway network, and home-toschool travel; 4) The cumulative impacts on schools and the community in general resulting from increased vehicular movement and volumes expected upon Project completion; 5) The direct, indirect and cumulative impacts on circulation and traffic patterns in the community as a result of traffic generated by the transportation needs of students to and from the Project site and MUSD schools during the Project construction and build-out, 6) The impacts on routes and safety of students traveling to school by vehicle, bus, walking and bicycles; 7) The impacts on emergency responder response times to MUSD schools, including the increased risks posed by increased traffic within the entire community; 8) The impacts of the proposed utilization of Delevan, McDermott, Maxwell Sites, and Sites Lodoga Roads, particularly during harvest times and the peak recreational season on bussing routes, traffic patterns in the community, the transportation needs of students to and from MUSD schools, the increased response times of all emergency service providers and first responders and increased demand anticipated for emergency service providers and first responders.	be used to facilitate emergency access during construction (e.g., shoo-fly under Alternative 1 or 3). Appendix 2D, Best Management Practices, Management Plans, and Technical Studies, BMP-16, Development and Implementation of a Construction Equipment, Truck, and Traffic Management Plan (TMP), would support emergency access during construction. As discussed under Impact UTIL-1 in Chapter 26, in addition to the Project characteristics identified and analyzed in Chapter 18, construction of new or altered government facilities related to public services would not be required because facilities would be provided onsite during construction for construction worker health and safety. Furthermore, as described in Chapter 26, similar to construction-related conditions, under operating conditions "service providers currently coordinate to provide emergency response to the study area. The Colusa County Boating Safety Unit would be responsible for patrolling the reservoir. These emergency service providers currently have facilities located throughout the study area, including in Maxwell. As described in Chapter 2 and Appendix 2D, as part of the Recreation Management Plan, helipads would be placed near Golden Gate Dam or Sites Dam and the Peninsula Hills Recreation Area or the day-use boat ramp for emergency responder use during operation. Prefabricated structures for storing emergency equipment and materials would be placed within the footprint of the recreation areas for police and fire emergency response. These facilities would allow existing emergency service providers access to supplies and equipment to support the recreation areas." Given the analysis in Chapter 18 and Chapter 26 and the information contained within response to comment 89-10, emergency access and emergency response would not be substantially reduced, and impacts would remain less than significant as identified in the RDEIR/SDEIS.

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89-12	The RDEIR/SDEIS failed to analyze any of the above categories of information. There is, therefore, no way for the lead agencies or the public to assess whether the Project will pose a traffic impact related to MUSD's provision of public services or any other agency's provision of public services (i.e., Maxwell Fire Protection District and Colusa County Sherriff). Moreover, this failure to properly analyze the above categories of information resulted in an improperly narrow alternatives analysis and mitigation. As noted in Laurel Heights, "[t]he key issue is whether the selection and discussion of alternatives fosters informed decision making and informed public participation." (Laurel Heights Improv. Assoc. of San Francisco v. Regents of Univ. of Calif. (1988) 47 Cal.3d 376, 404, quoting CEQA Guidelines §15126 (d) (5).)	Please see responses to comments 89-2 through 89-11 regarding responses to categories of information identified by the commenter. Please also see Master Response 2, Alternatives Description and Baseline, regarding CEQA requirements for mitigation measures. Please see Master Response 9, Alternatives Development, regarding the requirements of establishing the reasonable range of feasible alternatives based on the objectives of a project.
89-13	To be clear, MUSD anticipates that the construction and operation of the proposed Project will have significant impacts on traffic, transportation, circulation and student safety that must be thoroughly analyzed and discussed in the RDEIR/SDEIS to ensure adequate mitigation is adopted. As previously stated, Maxwell is a very rural community with a limited roadway network, limited emergency services and a population less than the estimated workers required for the Project. This Project will double the population of Maxwell and turn it into a commuter work place. Obviously, there will be traffic impacts and these were not analyzed as required by CEQA. The traffic generated by the Project will severely exacerbate the existing inadequacies in Maxwell's roadways and increase risk to pedestrian and bicycle traffic and the safety issues posed thereby. These impacts will severely inhibit MUSD's ability to operate its educational programs and provide a safe, secure learning environment for its students and staff including safe passage to schools. However, none of these issues were properly analyzed in the RDEIR/SDEIS.	As identified in Table 18-6 in Chapter 18, Navigation, Transportation, and Traffic, the current level of service for the local study area is high (e.g., A or B), and therefore it is unclear as to what limitations in the roadway network the commenter is referring. Similarly, Impact TRA-1 identifies that estimated trips generated by construction or operations would not result in negative effects on the existing circulation system, including transit, roadway, bicycle, and pedestrian facilities. Please see responses to comments 89-2 through 89-11 for information regarding transportation and traffic and response to comment 89-12 regarding CEQA requirements regarding mitigation and alternatives.

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89-14	III. CONCLUSION Recirculation is required when the new information added to an EIR discloses: (1) a new substantial environmental impact resulting from the project or from a new mitigation measure proposed to be implemented; (2) a substantial increase in the severity of an environmental impact unless mitigation measures are adopted that reduce the impact to a level of insignificance; (3) a feasible project alternative or mitigation measure that clearly would lessen the environmental impacts of the project, but which the project's proponents decline to adopts; or (4) that the draft EIR was so fundamentally and basically inadequate and conclusory in nature that public comment on the draft was in effect meaningless. (CEQA Guidelines § § 15126, et seq.;Mountain Lion Coalition v. Fish & Game Comm. (1989) 214 Cal.App.3d 1043; Laurel Heights Improv. Assn. v. Regents of Univ. of Calif. (1988) 47 Cal.3d 376). In this case, the RDEIR/SDEIS is incomplete and does not adequately analyze the Project's potential impacts related to schools, alternatives that would address these impacts and mitigation measures that would lessen these impacts. The safety of our students, staff and entire community is paramount to MUSD, and our safety concerns are not adequately addressed in the RDEIR/SDEIS as currently constituted. Changes must be made to preserve the safety of these students, their families, our staff and the entire community of Maxwell and its surrounding areas and allow our students and staff to enjoy productive time at school. MUSD demands that the RDEIR/SDEIS be updated to include a proper traffic study, proper alternatives analysis with an adequate range of alternatives with respect to traffic impacts and legally sufficient mitigation measures for traffic impacts and impacts to public services including MUSD for the entire community.	Please see responses to comments 89-1 through 89-13 regarding detailed comments about schools and safety. Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding requirements for recirculation. Please see Master Response 2, Alternatives Description and Baseline, regarding use and incorporation of mitigation measures.
89-15	MUSD looks forward to this Project being developed provided the Project is appropriately mitigated, as required by CEQA. Failure to mitigate this project not only violates CEQA but also places an unfair burden on this very small, rural community. MUSD welcomes the Project but is not willing to	See responses to comments 89-2 through 89-14 regarding CEQA requirements for mitigation and emergency response and access.

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	diminish the level of services it currently provides to its students and staff, including the diminished emergency services that will result because of the Project's increased traffic and increase demand on these emergency services resulting in reduced response times or no response at all due to lack of personnel. MUSD cannot potentially jeopardize the lives of the District's constituents, the Project employees or the volunteer firefighters, Colusa County Sheriff personnel and/or any other first responder personnel.	
89-16	Moreover, the Project will flood, literally, eight houses that current provide assessments of more than $10,000 per house. This is a significant reduction in needed funding that must be mitigated. Additionally, the reduction in attendance, no matter how temporary, will likewise result in a reduction of funding that must be mitigated. To approve this Project without resolution of these issues will not only violate CEQA, it will compromise public health and safety within MUSD, diminish educational opportunities and potentially jeopardize lives.	Please see Master Response 2, Alternatives Description and Baseline, regarding the requirements to mitigate for physical environmental effects under CEQA. Please also see Chapter 30, Environmental Justice and Socioeconomics, Effect SOC-2 for effects associated with property taxes.
90-1	CCWD solely relies on the Delta to provide water diverted at its four intakes to approximately 550,000 people in Contra Costa County. Changes in water quality and water supply at CCWD intakes, even in the absence of violation of regulatory objectives, can impact CCWD's water supplies to its customers. CCWD would like to provide comments as follows regarding the evaluation of potential impacts to CCWD water supplies. As described in the RDEIR/SDEIS, the diversions for the Project would be diverted under the basis of a new water right that would be, by definition, junior to all existing water rights such as the Central Valley Project (CVP) and State Water Project (SWP) water rights, and CCWD's Los Vaqueros and Mallard Slough water rights. This new water right should include limitations that are at least as constraining as the constraints presented in the RDEIR/SDEIS, including, but not limited to, the Delta excess buffer (i.e., not	The State Water Board's consideration of the Project water right application is a discretionary action. The State Water Board may use content and information in the EIR to inform its decision regarding the water right application, but it will arrive at a separate and distinct decision from the decision of the Authority to approve the Project and certify the EIR. Please refer to Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding water rights. Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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	diverting the first 3,000 cfs beyond the required Delta outflow) and the diversion criteria listed in Chapter 2 of the RDEIR/SDEIS.	
90-2	The conveyance of water delivered from the Project through CCWD facilities is mentioned as a possibility in Chapter 2 of the RDEIR/SDEIS, but the potential associated impacts were not analyzed in the RDEIR/SDEIS. Since CCWD and the Project team have not discussed this possible operation in any detail to date, we recommend additional coordination with CCWD to determine if there are potential opportunities for coordinated operations in the future. If both parties decide to move forward with pursuing coordinated operations, more detailed impact analysis may need to be performed to fulfill the requirements of CEQA/NEPA and additional coordination with the CVP, SWP, and other key stakeholders would likely be beneficial.	Chapter 2, Project Description and Alternatives, describes that CCWD could receive water ("Once in the Delta, this water could be diverted at any of the South Delta pumping facilities (SWP's Banks Pumping Plant, Reclamation's Jones Pumping Plant, the North Bay Aqueduct, or Contra Costa Water District's pumping plants) and conveyed to the respective Storage Partner using existing conveyance facilities and mechanisms"). As a result of the Project, CCWD could receive Project water via Reclamation participation. Storage Partners identified in Table 5-10 in Chapter 5, Surface Water Resources, could receive water through the CCWD conveyance system as they are considering participation in the Los Vaqueros Reservoir Expansion Project. If a Storage Partner were to use CCWD facilities to receive its Sites water, it would be reasonable to assume that this use would be within the constraints of existing permits and compliance documents and therefore would result in no greater and no different effect than addressed in existing permits and approvals. However, if a Sites Storage Partner were to use CCWD facilities to receive its Sites water, the Authority would work with CCWD to determine if additional CEQA and/or NEPA analysis would be needed. As this future use is uncertain but is assumed to occur under existing permits and approvals, no additional or more detailed impact analysis would be necessary at this time. The Authority will continue to coordinate with the CVP, SWP, and other key stakeholders throughout the engineering and planning processes and as the Project transitions into operations.
90-3	In the RDEIR/SDEIS, conveyance of water supply to south-of-Delta Project partners is envisioned to be realized by increased exports at the Jones	The modeling for the EIR/EIS assumes the following for through-Delta conveyance: (1) south-of-Delta Project partners will receive their

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	Pumping Plant and/or the Banks Pumping Plant, which entails through-Delta conveyance operations and thus has the potential to impact CCWD. The RDEIR/SDEIS does not include specific criteria for Sites Reservoir release and through-Delta conveyance to the same level of detail as the diversion criteria described in Chapter 2. As a result, detailed information needed to assess the potential impacts to CCWD remains unavailable; such information includes but is not limited to details about carriage water assumptions, diversion priority at Jones and Banks Pumping Plants, and potential changes in the timing and frequency of controlling Delta regulations. CCWD looks forward to coordinating with you to ensure that potential impacts of Project operations are avoided or mitigated.	water solely from Banks Pumping Plant; (2) deliveries to Incremental Level 4 Refuges south-of-Delta may be facilitated through Banks and Jones Pumping Plants; (3) carriage water losses are assumed for all deliveries south-of-Delta; (4) conveyance of Sites water through the Delta occurs during the transfer window and utilizes excess conveyance capacity; and (5) as with No Project Alternative conditions, Delta regulations are met. Additional details regarding the modeling of Sites releases can be found in Appendix 5A, Surface Water Resources Modeling of Alternatives. Potential effects associated with these modeling assumptions are included in the impact analysis of the document.
90-4	The RDEIR/SDEIS does not fully account for the potential impacts on CCWD operations. CCWD's operations are driven by a number of factors including water quality. The DSM2 modeling results show occasions of increased salinity near CCWD's Intakes that coincide with CCWD's likely timing for use of the intakes, which has the potential to impact CCWD operations. However, in the CalSim modeling of CCWD operations the Delta salinity levels are the same for both the with and with Project scenarios, and thus does not capture CCWD's operational response to changes in Delta water quality caused by the Project. CCWD looks forward to discussing with you how to avoid or mitigate the potential Project impacts of increased salinity on CCWD.	Chapter 6, Surface Water Quality, describes the DSM2 results and relies on the results shown in Appendix 6B, Sacramento-San Joaquin Delta Modeling. Additional export loading metrics at Banks Pumping Plant and Jones Pumping Plant and CCWD exports will be provided in the Final EIR/EIS. The increases in salinity for CCWD are small and would occur when salinity is low. As noted above by the commenter in comment 90-1, Sites Reservoir would be operated within existing system constraints, subject to senior water rights holder requirements, and subject to the operation criteria described in Chapter 2, Project Description and Alternatives, of the Final EIR/EIS.
90-5	As a project proponent and participant in the California Water Commission's Water Storage Investment Program, CCWD supports the objectives of the Water Storage Investment Program and recognizes the statewide importance of water storage projects that provide significant public benefits. In the spirit of collaboration, CCWD looks forward to the review of the final EIR/EIS for the Project and coordinating with you to achieve our mutual goals.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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91-1	The Sites Project Authority has not established a public record in the RDEIR/SDESI and associated documents that supports the continuation of the proposed project.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the adequacy of public outreach, as well as the CEQA/NEPA process.
91-2	After years of pursuing the Sites Project, deadlines have not been met to secure funding for the project as proposed in November 2021. Timelines for WUN funding expired on December 16th 2021. Who will pay and who will benefit has not been documented.	Please see Chapter 1, Introduction, Section 1.2, Project Background, for a description of the key planning and funding efforts that form the foundation of the Project. Funding sources include the Water Quality, Supply, and Infrastructure Improvement Act of 2014 (Proposition 1) and the Water Infrastructure Improvements for the Nation (WIIN) Act. Construction under the WIIN Act includes geotechnical exploration, which has been ongoing since 2019.
91-3	The environmental impacts of additional diversions from the Sacramento River are not adequately described in the proposed project. Currently California is experiencing multi-year droughts that have decimated aquatic resources such as salmon. The main stem of the Sacramento River is currently devoid of the microfauna the support fish species including salmon as documented by University of California aquatic resource studies. The proposed project fails to document how additional diversions will effect this water quality problem.	The article cited by the commenter is not related to University of California aquatic resource studies that show that the mainstem of the Sacramento River is devoid of the microfauna-supporting fish species, including salmon. Rather, the cited article is a summary of studies done to assess the effects on juvenile salmon from rearing in flooded farm rice fields. The Project would not affect such practices. Potential effects of the Project on other flooded habitats such as the Yolo Bypass are analyzed in the EIR/EIS; see, for example, the Floodplain Inundation and Access section of Impact FISH-2 in Chapter 11, Aquatic Biological Resources, Section 11.4, Impact Analysis and Mitigation Measures.
91-4	The ongoing drought in California continues with less than 0.1 inches of rain in January 2022, a near record low. The proposal is mute on how additional diversions from the Sacramento River can be accommodate this "Global Warming" effect. Climatic change has overtaken the predictability of projected rainfall that will be necessary for the project to safely divert water without resource destruction.	See Master Response 3, Hydrology and Hydrologic Modeling, regarding the variability of hydrology over time and the multiple years represented in the hydrologic modeling. As described there and in Chapter 28, Climate Change, climate change in Northern California is expected to result in warmer temperatures, reduced snowpack, increased hydrologic variability, and increased and earlier runoff. These changes have already commenced in the 82-year CALSIM II hydrology, but the environmental baseline only reflects changes incurred during the simulation period. Details of potential effects of

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		climate change on future hydrologic conditions are reflected in the 2035 Central Tendency (CT) and Water Storage Investment Program (WSIP) 2070 results contained in Appendix 28A, Climate Change.
91-5	The idea that the Proposed Project will provide"... substantial benefit to the environment..", is not reasonable from the documents provided and has not been adequately qualified by demonstrating economic feasibility.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS and regarding the California Water Commission and its determination of feasibility. Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
91-6	The "Trump Era" Secretarial Feasibility Demonstration Letter uses a specious Biological Determination for a project that is significantly different from the much modified final Proposed Project. The validity of this document is currently in litigation and therefore it should not be deemed appropriate for justifying the Project as finally proposed.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the CEQA/NEPA process. Reclamation continues to develop the Project, and determination of feasibility of the Project is ongoing. Furthermore, the Authority and Reclamation have not approved an alternative for the Project. The biological determination for the Project has not been issued, and Reclamation is consulting with the U.S. Fish and Wildlife Service and National Marine Fisheries Service regarding the Project. The 2019 biological opinions on the long-term operation of the CVP/SWP, which are currently in reinitiated consultation and the subject of litigation, were included in the baseline, along with the ITP for the SWP, as described in Chapter 3, Environmental Analysis, and Master Response 2, Alternatives Description and Baseline. The Project is separate and apart from the biological opinion previously issued for the long-term operation of the CVP.
91-7	Moreover, the purpose of Public Notice is to enable public comments. The SPA is attempting to forward this much delayed and ill conceived project during the Covid crisis shutdown and over the traditional Holiday season-the last hours of the year 2021. Reasonable opportunities for Public Comment are being avoided.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review period and the Authority's and Reclamation's extension of the public review period.

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91-8	I believe this Proposed Project fails to meet the requirements for approval at many levels. Let California move on to reasonable projects that forward the best available water quality outcomes.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the CEQA/NEPA process. Please also see Master Response 2, Alternatives Description and Baseline, regarding the adequacy of the impact analysis in the RDEIR/SDEIS.
92-1	The climate and extinction crises are real, connected, and getting worse. The Sacramento River and Delta are already seriously stressed with many dependent species declining or listed under the federal and state endangered species laws. Diverting more water for off-stream storage is likely to add to these existing problems, plus this proposed reservoir would destroy thousands of acres of valuable farmland and wildlife habitat. It would make more sense to acquire some farmland along the Sacramento River, reduce the levees, and let the river expand during flood flows, as it previously did, to restore critical riparian and wetland habitats and replenish groundwater aquifers. We need to work with and replicate natural processes whenever possible. People also waste too much water and much greater savings could occur with more effective water conservation and reclamation programs. For these reasons, I oppose this proposed reservoir because there are much better alternatives. Thanks for considering my comments.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
93-1	I write on behalf of the Yocha Dehe Wintun Nation, a federally recognized tribal government whose ancestral territory includes the land now known as Yolo County and Colusa County, to provide Yocha Dehe's initial comments on the Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement ("REIR/SDEIS") for the Sites Reservoir Project. As the Yocha Dehe Cultural Resources Department explained to Janis Offermann in early January, the REIR/SDEIS appears to have omitted important information about Tribal Cultural Resources - including village sites - within the Project footprint. Without that information, meaningful	Impact TCR-1, described in Chapter 23, Tribal Cultural Resources, acknowledges the presence of village sites in the construction/inundation area, finds that these sites are Tribal cultural resources pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, and analyzes impacts accordingly.

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	review and comment on the REIR/SDEIS - and the Project itself - is simply not possible.	
93-2	We also explained to Ms. Offermann that Yocha Dehe will require a few weeks to identify, compile, and review the specific information omitted from the REIR/SDEIS, at which point the Tribe intends to submit further comments. We trust no action on the Project will be taken in the interim. Please contact Director of Cultural Resources Laverne Bill at lbill@yochadehe-nsn.gov or Attorney General Paula Yost at pyost@yochadehe-nsn.gov if you have any questions.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS.
94-1	My comment is prefaced with the fact that I haven't, and don't anticipate having the time to read the Site Reservoir DEIR, which is unfortunate. Instead, my comment is a broad remark. Bottom line, the Sacramento River already has insufficient ecosystem services for native fish species, mainly due to low flows and pollution. If the primary source of water for the Sites will be the Sac river, that is not helping the situation at all.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
94-2	I know - "California agriculture feeds the world". But the agricultural economy of the Sacramento Valley needs to re-think the types of crops that are grown, and the extent of export. Keeping the agricultural economy more local, creating incentives for farmers to switch crops or occupations, and emphasizing native fisheries recovery would mean less water demand.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS.
95-1	Thank you for considering my comments. I live in Rio Vista and support Restore the Delta and the Sierra Club's vision of a healthy ecosystem for plants, animals and humans. No reservoir please. This is an outdated concept that does not contribute anything healthy to riparian habitat.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
96-1	The Sites Reservoir proposal is a false solution to California's water-supply challenges, and I urge you to reject it.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
96-2	Water is a public resource, and its management should address the diverse interests of the public. This requires planning that reflects the realities of climate change-driven shifts in the amount of rain and snow in the West.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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	Instead of investing in massive water infrastructure projects like the Sites Reservoir project that harm native wildlife, tribal values and local communities, California must focus on reducing demand, increasing efficient use and reuse of existing supply, and leveraging sustainable storage methods like groundwater banking.	
96-3	Salmon in Northern California, and the tribes and coastal fishing communities that rely on them, shouldn't have to suffer in dry years to ensure that nut growers and livestock producers maximize yields. It's time to invest in community and ecosystem health rather than continuing to subsidize an industry that destroys an essential public resource. We don't have the time or resources to waste on harmful projects such as the Sites Reservoir. I'm counting on you to reject the project.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
97-1	I urge you to oppose and deny the application for the proposed Sites Reservoir.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
97-2	I understand that the public comment period on the related environmental analysis ends tomorrow. Please include this email in the administrative record for that analysis. And please respond to my comments in the final EIR-EIS.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding the public review and outreach process for the RDEIR/SDEIS. Please see Chapter 1, Introduction and Approach to Reponses to Comments, of Volume 3 in the Final EIR/EIS regarding where electronic copies (i.e., pdfs) of the full text of comment letters are available as part of the Project record. Responses to individual comments are provided in Chapter 4, Responses to Comments, of Volume 3 in the Final EIR/EIS.
97-3	The climate and extinction crises are real, connected, and getting worse. Dramatic reforms are urgently required. Status quo management methods are no longer appropriate or sustainable. In this context, the connected Sacramento River and Delta ecosystems are in ecological decline, under serious environmental stress, with dwindling salmon fisheries, and greater jeopardy to dependent species that are listed or proposed for listing under the federal and state endangered species laws. Indeed, the Delta smelt is on the verge of extinction. There are already many on and off-river reservoirs	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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	lining the Central Valley. Due to the mega drought, many of them are very low, and they all lose enormous amounts of water each year from evaporation. It would be foolish to divert precious Sacramento River water and diminish necessary Delta flushing flows to build yet another off-river reservoir that would likely be very low most years and suffer evaporation losses. Changing the status quo must mean doing better at replicating natural processes as much as possible. In this case, it would save public money, water, and the energy to divert and pump water to the new reservoir by simply acquiring farmland along rural portions of the Sacramento River and perhaps some tributaries, lowering levees, and allowing the rare high flood flows to expand out of the river channel as they previously did for many thousands of years. This would restore critical habitats for migratory waterfowl and many ESA listed or proposed species, allow natural flows to generally move southward for fisheries passage, and replenish depleted groundwater aquifers. It would be working with rather than against nature. And it would create a added wildlife habitats instead of destroying thousands of acres of existing habitats.	
97-4	Big ag interests love to spend exorbitant public money on massive water storage projects that largely benefit their private profits. They get the gold and the general public, wildlife, and the environment get the shaft.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
97-5	When are we going to learn from history and stop repeating the same mistakes over and over again? When are we going to realize that we waste enormous amounts of water and that we could save and reuse most of it through more aggressive and effective water conservation and reclamation programs?	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS.
97-6	The proposed Sites Reservoir is a relic of the foolish past way of thinking that we could somehow create water by building more dams and reservoirs. You can't drink water rights on paper or concrete. Nature provides our	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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	water, and less of it because of the climate change that we created through arrogant burning of fossil fuels. We need to change course, learn from nature, and strive to become a truly sustainable civilization.	
97-7	Please oppose this project and don't destroy thousands of productive biodiverse acres for this boondoggle.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
98-1	The Sites Reservoir proposal is a false solution to California's water-supply challenges, and I urge you to reject it.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
98-2	Water is a public resource, and its management should address the diverse interests of the public. This requires planning that reflects the realities of climate change-driven shifts in the amount of rain and snow in the West. Instead of investing in massive water infrastructure projects like the Sites Reservoir project that harm native wildlife, tribal values and local communities, California must focus on reducing demand, increasing efficient use and reuse of existing supply, and leveraging sustainable storage methods like groundwater banking.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
98-3	Salmon in Northern California, and the tribes and coastal fishing communities that rely on them, shouldn't have to suffer in dry years to ensure that nut growers and livestock producers maximize yields. It's time to invest in community and ecosystem health rather than continuing to subsidize an industry that destroys an essential public resource. We don't have the time or resources to waste on harmful projects such as the Sites Reservoir. I'm counting on your to reject the project.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
99-1	The Sites Reservoir proposal is a false solution to California's water-supply challenges, and I urge you to reject it.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
99-2	Water is a public resource, and its management should address the diverse interests of the public. This requires planning that reflects the realities of climate change-driven shifts in the amount of rain and snow in the West. Instead of investing in massive water infrastructure projects like the Sites Reservoir project that harm native wildlife, tribal values and local communities, California must focus on reducing demand, increasing	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.

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100-1	The Sites Reservoir proposal is a false solution to California's water-supply challenges, and I urge you to reject it.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
100-2	Water is a public resource, and its management should address the diverse interests of the public. This requires planning that reflects the realities of climate change-driven shifts in the amount of rain and snow in the West. Instead of investing in massive water infrastructure projects like the Sites Reservoir project that harm native wildlife, tribal values and local communities, California must focus on reducing demand, increasing efficient use and reuse of existing supply, and leveraging sustainable storage methods like groundwater banking.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
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100-4	Stop Draining Our Rivers for Industrial Agricultural Profit! According to the RDEIR and SDEIS, the proposed Sites Reservoir project would have significant and unavoidable effects on water and air quality, vegetation, wetland and wildlife, and adverse impacts on tribal cultural resources.	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, regarding significant and unavoidable impacts. Please see Master Response 2, Alternatives

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	Environmental documents clearly show that Sites water diversion would NOT be limited to major storms. In California's northern rivers, more than five times as much water than actually exists is currently allocated. The environmentally destructive Sites reservoir is a private enterprise that would literally steal water from the State of California. This plan must be rejected!	Description and Baseline, regarding the merits of the Project and alternatives.
101-1	The Sites Reservoir proposal is a false solution to California's water-supply challenges, and I urge you to reject it.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
101-2	Water is a public resource, and its management should address the diverse interests of the public. This requires planning that reflects the realities of climate change-driven shifts in the amount of rain and snow in the West. Instead of investing in massive water infrastructure projects like the Sites Reservoir project that harm native wildlife, tribal values and local communities, California must focus on reducing demand, increasing efficient use and reuse of existing supply, and leveraging sustainable storage methods like groundwater banking.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
101-3	Salmon in Northern California, and the tribes and coastal fishing communities that rely on them, shouldn't have to suffer in dry years to ensure that nut growers and livestock producers maximize yields. It's time to invest in community and ecosystem health rather than continuing to subsidize an industry that destroys an essential public resource. We don't have the time or resources to waste on harmful projects such as the Sites Reservoir. I'm counting on you to reject the project.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
101-4	I have a nonprofit group in Los Gatos called Plant-Based Advocates. We are educating people about the benefits of shifting to plant-based food: better health, reduced greenhouse gas emissions, reversing environmental destruction, and repairing our broken relationship with animals. Of critical importance: People who eat plant-based diets use HALF the amount of water as those eating a typical diet full of meat and dairy (National Geographic). Big Ag uses about 80 percent of California's water, according	Please see Master Response 1, CEQA and NEPA Process, Regulatory Requirements, and General Comments, for responses to general comments on the RDEIR/SDEIS.

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	to the Pacific Institute, and 47 percent of a Californian's water footprint is in meat and dairy products. Let's educate people about how changing their diets can save enormous amounts of water instead of destroying critical habitat.	
102-1	Water is a public resource! This should be obvious and its management should address the diverse interests of the public. The Sites Reservoir proposal is a sham. It is a false solution to California's water-supply challenges. Our entire family of four voters ask you to please reject it.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
102-2	Crops that would be supported with this project does not feed the world or the US. They are crops that are water hogs: beef and dairy -- driving catastrophic water system collapse. Planning for the future, we need to make strategies that support small farmers and low water consumption. Instead of investing in massive water infrastructure projects like the Sites Reservoir project that harm native wildlife, tribal values and local communities, California must focus on reducing demand, increasing efficient use and reuse of existing supply, and leveraging sustainable storage methods like groundwater banking.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.
102-3	Northern California salmon fisheries, and the tribes and coastal fishing communities that depend on them, shouldn't have to subsidize nut and livestock producers' profit yields. Something is really wrong if all of a sudden, there is no water. How could there have been plenty of water in the past but all of a sudden, Nature's bounty hasn't provided enough. It's time to invest in community and ecosystem health rather than continuing to subsidize an industry that destroys an essential public resource. We don't have the time or resources to waste on harmful projects such as the Sites Reservoir. I'm counting on you to reject the project.	Please see Master Response 2, Alternatives Description and Baseline, regarding the merits of the Project and alternatives.