

Letter-Comment Number	Comment	Response
568-1	Any questions regarding the attached letter or further coordination with CDFW [California Department of Fish and Wildlife] should be directed to [Name], Acting Environmental Program Manager, at [email address].	This information describes the structure or organization of the comment letter, clarification on the submittal of the comment letter, or general introductory text. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
568-2	The California Department of Fish and Wildlife (CDFW) received and reviewed the Notice of Availability of a Public Draft EIR (DEIR) from the Department of Water Resources (DWR) for the Delta Conveyance Project (DCP) pursuant the California Environmental Quality Act (CEQA) statute and guidelines [Footnote 1: CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.] Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the DCP that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the DCP 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.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
568-3	CDFW [California Department of Fish and Wildlife] ROLE. 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 (California Environmental Quality Act) Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the	This information describes the background of the organization or individual commenter. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.

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	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 is charged by law to provide, 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. CDFW is also submitting comments as a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. The Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.) or the Native Plant Protection Act (Fish & G. Code, § 1900 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA [California Endangered Species Act]) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required. CDFW also administers the Natural Community Conservation Program and other provisions of the Fish and Game Code that afford protection to California's fish and wildlife resources.	
568-4	PROJECT DESCRIPTION SUMMARY. Proponent: Department of Water Resources. Project Overview: The DCP [Delta Conveyance Project] involves the construction, operation, and maintenance of new State Water Project (SWP)	This comment does not raise a significant environmental issue relating to the proposed project or address the adequacy, accuracy, or completeness of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.

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	water conveyance facilities located in the Sacramento-San Joaquin Delta (Delta) that would be operated to meet the following objectives: 1) respond to sea level rise and other reasonably foreseeable consequences of climate change; 2) minimize water delivery disruption due to Delta seismic risk; 3) improve water supply reliability; and 4) provide operational flexibility to the SWP. The preferred Alternative 5 Bethany Reservoir Alignment (Proposed Project) comprises two new intake facilities located in the north Delta, along the Sacramento River, designed with a conveyance capacity of up to 6,000 cfs. Diverted water would move through a single tunnel on an eastern alignment through Lower Roberts Island, terminating at the Bethany Complex, located in the south Delta near Mountain House (Figure 1). The proposed Bethany Complex is located south of Clifton Court Forebay and would include a Bethany Reservoir Pumping Plant, surge basin, aqueduct, and tunnel that conveys flows to a new Bethany Reservoir Discharge Structure on the shore of the existing Bethany Reservoir. Intake components would include cylindrical tee fish screens, intake structures, sedimentation basins, sediment drying lagoons, flow control structures, tunnel inlet, and other inlet structures. The DEIR includes analysis of two additional DCP alignments, central and eastern. Under these alternatives to the Proposed Project, the single tunnel would convey water from the new north Delta intakes through either the central or eastern alignments to existing SWP conveyance facilities and potentially to existing Central Valley Project (CVP) facilities through a new pumping plant and Southern Forebay on Byron Tract and other appurtenant facilities in the south Delta	

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	(Southern Complex), adjacent to the Clifton Court Forebay. The Proposed Project or alternatives would operate the new conveyance facilities in conjunction with existing SWP south Delta export facilities at Clifton Court Forebay, creating a dual conveyance system. Water could be diverted from the new diversion facilities in the north Delta, the existing SWP south Delta export facilities, or both. Location: The Proposed Project area for the purposes of CEQA [California Environmental Quality Act] comprises areas in the SWP and CVP [Central Valley Project] system upstream of the Delta, the Sacramento-San Joaquin Delta (i.e., the statutory Delta), and Suisun Marsh. The Proposed Project's area includes temporary and permanent construction areas and compensatory mitigation areas as well as areas outside the Proposed Project footprint (Figure 1 [Exhibit 1]) affected by the Proposed Project operations including waterbodies.	
568-5	Exhibit 1: Map of proposed project (alternative 5 Bethany Reservoir Alignment) and alternative alignments and facilities. Figure taken from executive summary of the DEIR p. ES-23)	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. DWR has reviewed all comments and will consider all comments in its decision-making process.
568-6	COMMENTS AND RECOMMENDATIONS. CDFW [California Department of Fish and Wildlife] offers the following comments and recommendations to assist DWR [Department of Water Resources], as lead agency, in adequately identifying and, where appropriate, mitigating the DCP's [Delta Conveyance Project] significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources and identifying alternatives that would avoid or minimize adverse impacts.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.

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568-7	IMPACTS TO COVERED SPECIES. The DEIR concludes that the Proposed Project with mitigation would result in less-than significant impacts to all species. Of particular interest to CDFW [California Department of Fish and Wildlife] are the following aquatic species findings: winter-run Chinook salmon, spring-run Chinook salmon, Delta smelt, and longfin smelt. In some cases, additional analyses are necessary to fully consider potential Project impacts to these species; in other cases, analyses were conducted and demonstrate impacts that were determined less-than-significant within the DEIR but remain of concern to CDFW. Proposed Project impacts that the DEIR appears to describe include: -Substantially reducing Delta [Sacramento-San Joaquin Delta] outflow, particularly in critical water years when aquatic resources are already limited and species survival is low, -Reducing the frequency and duration of important pulse flows through the Delta, and -Reducing the quality of aquatic habitat in the Delta that is critical to juvenile salmonid rearing and through-Delta survival and Delta smelt and longfin smelt recruitment and survival. Details regarding CDFW's comments and concerns about these impacts are provided below [comments 8-250] along with CDFW's recommendations intended to help inform future DCP [Delta Conveyance Project] analysis, permits, and environmental documentation. Additionally, where appropriate, we include suggestions for improved mitigation strategies aimed at avoiding, minimizing and or compensating for impacts to fish and wildlife resources. CDFW offers these comments with the intention of ensuring that the EIR includes	Responses to the topics summarized in the comment are provided in the individual comments related to these topics.

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	enough detail to enable those who did not participate in its preparation to understand, and to consider meaningfully, the issues raised by the Proposed Project and ensure its adequacy as an informational document.	
568-8	Project Description and Alternatives Need for Additional Operational Alternatives The DEIR does not consider any alternatives with different project operational criteria, nor does it include an alternative that balances existing SWP [State Water Project] diversions between south and north Delta [Sacramento-San Joaquin Delta] export facilities to resemble the natural flow pattern into and through the Delta. Although the DEIR evaluates different overall capacities (e.g., varying tunnel capacities for the Eastern and Central Alignment alternatives), this does not provide a range of operational rules within such capacities that could be designed to minimize impacts more effectively to species. CDFW [California Department of Fish and Wildlife] notes that the Delta Plan includes recommendation WR R12b, that improved conveyance facilities consider a reasonable range of flow criteria and other operational criteria to satisfy requirements of State and federal fish and wildlife agencies to protect, restore, and enhance the Delta ecosystem (Delta Stewardship Council 2013).	DWR has conducted extensive analyses of a range of alternative operational scenarios for the BDCP/California WaterFix efforts and conducted screening level analyses to develop the new Delta Conveyance Project operational criteria which are focused on meeting the stated purpose and project objectives presented in Chapter 2, Purpose and Project Objectives. While “balancing diversions between south and north Delta export facilities to resemble the natural flow pattern into and through the Delta” as proposed by the commenter was considered under BDCP/California WaterFix (BDCP/CWF), the Delta Conveyance Project is a new project with purpose and objectives that differ from the BDCP/CWF, as described in Chapter 2, Purpose and Project Objectives. Additional operational criteria or scenarios related to reducing exports and increasing streamflow were not included in the EIR because they would not meet most of the project objectives aimed at restoring and protecting the reliability of SWP water deliveries, would not substantially reduce the project’s significant impacts, and may have effects on water rights, as discussed in Common Response 3, Alternatives Development and Description. The CEQA requirements pertaining to the scope and reasonable range of alternatives, including that they should feasibly attain all or most project objectives and potentially avoid or lessen one or more significant impacts of the project are discussed in Common Response 3. None of the potential project impacts related to the operational criteria evaluated in the EIR are determined to be significant or unavoidable after implementation of feasible mitigation measures and operational alternatives, consistent with the project objectives, would not have the potential to avoid or substantially lessen any of the significant and unavoidable impacts identified in the EIR.

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		Please refer to Common Response 3 regarding how the project would be operated to shift diversions from the south Delta to the north Delta (during the summer and fall) or divert water in the north Delta during excess flow conditions while meeting regulatory requirements (during the winter and spring), in addition to further information on operations criteria considered for the Delta Conveyance Project. The analyses provided in the EIR Chapters 7–32 evaluate the potential impacts of the proposed operations for all alternatives. For example, Chapter 12, Fish and Aquatic Resources, indicates that impacts of the project and alternatives would be less than significant or less than significant with implementation of mitigation measures. Please also refer to Appendix 4C, Alternate Regulatory Scenario Sensitivity Analysis, which provides the assumptions for a modified regulatory scenario sensitivity analysis assuming the Delta Conveyance Project operational criteria are implemented as described in Chapter 3, Description of the Proposed Project and Alternatives. This sensitivity analysis is provided for information purposes only to determine the potential for changes in impacts for the described scenario. The results of the analysis indicated that the project compared to a modified regulatory baseline would not result in increased severity of effects compared to those described in the main body of the EIR. In addition, Appendix 4B, North Delta Diversion Priority Sensitivity Analysis, also provides an alternate scenario prioritizing diversions at the proposed north Delta intakes over the south Delta intakes. Note that this scenario is neither reasonably foreseeable nor required to be analyzed under CEQA, and showed that the effects of the project would not be appreciably different than under the proposed operational criteria. DWR also fully considered the Delta Reform Act and Delta Plan policies, including Recommendations WR R12a and b. Please refer to Appendix 3E, Delta Reform Act Considerations and Attachment 3E.1, Delta Plan

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		Recommendations WR R12a and WR R12b which summarize requirements and provides an EIR crosswalk for information relevant to these Delta Plan recommendations. In addition, please refer to Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, for additional considerations regarding the Delta Plan and Delta Reform Act.
568-9	Although the physical alternatives presented in the DEIR provide alternatives to potentially avoid or minimize terrestrial species impacts, DCP [Delta Conveyance Project] operations are expected to have the most substantial impacts on aquatic species. A range of operational scenarios is needed to compare impacts, develop meaningful mitigation, including actions to avoid or minimize impacts and reduce the need for compensatory mitigation, fully evaluate system-wide implications of alternative operational approaches, and ensure EIR durability should conditions change.	Please refer to response to comment 568-8 regarding the range of operations scenarios and operational criteria considered and Common Response 3, Alternatives Development and Description, for additional clarification of the alternative selection process, the operations approach and reasons for presenting one optimized operational approach and proposed new operational criteria. CalSim 3 modeling incorporates SWP operations to provide results that depict hydrologic changes of the project compared to existing conditions. Please also refer to Common Response 9, Hydrologic Modeling and Approach, regarding the modeling approach and assumptions used to inform EIR analyses.
568-10	CDFW [California Department of Fish and Wildlife] recommends including additional CEQA [California Environmental Quality Act] alternatives in the EIR that depict and evaluate different operational scenarios. Specifically, CDFW recommends the EIR include analysis and evaluation of additional operational alternatives that 1) apply pulse protections at the North Delta Diversions (NDD) based on real-time CESA [California Endangered Species Act]- and ESA-[Federal Endangered Species Act]- listed fish monitoring of juvenile presence and movement, 2) include a decision tree for shifting SWP [State Water Project] operations from Banks Pumping Plant to the NDD, 3) include a clear commitment to minimizing effects on spring outflow as a result of diversions included in the Proposed Project, and 4) operate to protect spring pulse flows as well as maintain compliance with D-1641 water quality objectives (i.e., without reliance on Temporary	Please refer to response to comment 568-8 regarding a range of operational scenarios considered for the EIR. Pulse protections, a real-time operations process, and operations adaptive management and monitoring that address protection of fish and aquatic resources are fully described in Chapter 3, Description of the Proposed Project and Alternatives. Please refer to Common Response 3, Alternatives Development and Description, for additional discussion of Temporary Urgency Change Petitions. In addition, Common Response 3 provides further clarifications regarding seasonal shifting of operations from south to north Delta intakes and discusses ongoing and planned agency coordination regarding potential refinements of operational criteria.

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	Urgency Change Petitions and by maintaining compliance to standards above those projected for the Proposed Project in Tables 4B-5 through 4B-6 of the DEIR).	
568-11	CDFW [California Department of Fish and Wildlife] also recommends analysis of an alternative using the above operational criteria [Comment 10], but with a physical alignment through Banks Pumping Plant as opposed to through the Bethany Reservoir, ensuring long-term consistency in minimum real-time diversion rates and improving our ability to understand the range of potential diversion rates from the facility when constructed. Finally, CDFW requests that the EIR include additional alternatives whereby the Proposed Project utilizes 1) north Delta [Sacramento-San Joaquin Delta] preferential pumping and 2) south Delta preferentially pumping to help elucidate impacts to fish and wildlife species dependent on the Project's pumping preference.	The EIR presents multiple project alternatives that would utilize a new southern forebay and the Banks Pumping Plant (Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b and 4c) at ranges of 3,000 cfs to 7,500 cfs diversion capacity to present alternatives and their impacts for comparison purposes with the proposed project (Alternative 5). Appendix 5A, Modeling Technical Appendix provides additional detail about specific surface water and water supply changes. The operational modeling results for all of the alternatives prioritize use of the south Delta SWP export facilities and secondary use of the new north Delta diversion facilities during excess flow conditions and to improve SWP operational flexibility. Additional alternatives that prioritize use of north Delta diversions were not included in the EIR. However, Appendix 4B, North Delta Diversion Priority Sensitivity Analysis, indicates that prioritizing use of north Delta intakes would not substantively change results or impacts, including impacts on fish and wildlife species analyzed in Chapter 12, Fish and Aquatic Resources, and Chapter 13, Terrestrial Biological Resources, compared to the proposed project, or have the potential to reduce the significant and unavoidable impacts identified in other chapters within the EIR. Please also refer to responses to comments 568-8 through 568-10 regarding the range of alternatives considered in the EIR.
568-12	No Project Alternative and Cumulative Impact Analysis The DEIR Appendix 3C describes the programs, projects, and policies considered for Existing Conditions, No Project Alternative, and Cumulative Impact Analysis. Section 3C.2.2 states the "No Project Alternative allows for DWR [Department of Water Resources] and other decision makers to use the DEIR to compare the impacts of approving the Delta Conveyance Project with the future conditions of not approving the Project in year 2040" (p.3C-3). It goes on to provide criteria for	EIR Appendix 3C, Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, table titled Descriptions of Programs, Projects, and Policies Considered for Existing Conditions, No Project Alternative, and Cumulative Impact Analysis, lists which projects the EIR considers under the three named categories. Projects mentioned in the comment were not excluded from consideration in the EIR. Projects such as Sites Reservoir, Del Puerto Canyon Reservoir and Los Vaqueros Reservoir were considered in the cumulative impact analysis because these projects are reasonably foreseeable projects that combined with the Delta

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	inclusion in the No Project Alternative such as those programs, projects, and policies included in the Existing Conditions as well as projects that would occur in lieu of the Proposed Project with clearly defined management and/or operational plans, including facilities under construction as of January 15, 2020; facilities and programs that received approvals and permits in 2020; or that have completed environmental review, received approvals and permits, or foreseeably will be approved and permitted by 2040 (p. 3C-3 through 3C-8). Yet, Table 3C-2 identifies multiple foreseeable projects which meet the above criteria but were excluded for consideration in the No Project Alternative. Some of these projects include: the Del Puerto Canyon Reservoir, Los Vaqueros Reservoir Expansion Project, Sites Reservoir Project, and the Bay-Delta Water Quality Control Plan Update to the 2006 Bay-Delta Water Quality Control Plan. The Proposed Project will not be operational until many years in the future, when circumstances under which the Proposed Project operates will likely have changed. The No Project Alternative serves as an unusually important informational tool in understanding the breadth of potential impacts to species and their habitats resulting from operations proposed. Therefore, CDFW [California Department of Fish and Wildlife] recommends all foreseeable projects be included in the No Project Alternative as these projects have been shown to meet the DEIR criteria for inclusion and will likely be constructed and operational by 2040, when the Proposed Project is assumed to be operational if it is approved.	Conveyance Project could result in cumulative impacts (please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the approach to the cumulative impact analysis). Projects considered in the No Project Alternative analyses were those that could be predictable actions by other agencies should the Delta Conveyance Project not be implemented. The projects listed in the comment are considered in the cumulative impact analysis in resource chapters because they are currently not operational, nor implemented, but it is foreseeable that they will be operating in the future when the Delta Conveyance Project would be operating. Please also refer to Common Response 1 regarding cumulative impact assessment. Please refer to Common Response 4, No Project Alternative Description and Analysis, for further explanation regarding the No Project Alternative approach and meeting CEQA requirements for decision makers to understand what could occur in the absence of approving the project. Please see response to comment 568-79 for more information regarding Del Puerto Canyon Reservoir and the No Project Alternative. Please see response to comment 568-81 for more information regarding Los Vaqueros Reservoir and the No Project Alternative.
568-13	Similarly, CEQA [California Environmental Quality Act] Guidelines, § 15130 requires consideration of the Proposed Project's cumulative impacts together with other projects	With respect to the suggestion that quantitative modeling be included, please see the discussion of quantitative modeling for cumulative impact assessment in Common Response 1, CEQA Process, General Approach to

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	causing related impacts. When utilizing a list of such related projects, the nature of environmental resources under evaluation, the location of a project, and its type, may be of importance, including where impacts are specialized. The DEIR does not include the potential for cumulative impacts that could arise should reasonably foreseeable projects, such as Sites Reservoir Project or the Los Vaqueros Expansion Project, be built and operated ahead of the Proposed Project. Although listed in Table 3C-2 as included within the cumulative analysis, CDFW [California Department of Fish and Wildlife] was able to locate only relatively general qualitative discussion, and no modeling or specific analysis that evaluated the potential cumulative impacts from the interactions of these projects and the Proposed Project. To illustrate the interconnectedness of these related projects with the Proposed Project, CDFW provides three examples. First, without a comprehensive Cumulative Impact Analysis, the amount of water available for export at the NDD is unknown and impacts to species and Delta [Sacramento-San Joaquin Delta] outflow because of Project operations cannot be assessed. Second, operation of these new and/or expanded foreseeable large-scale water projects is likely to affect the pulse protections as described in the DEIR. Because the Proposed Project ties salmonid-related pulse protections to large flow events, it is probable that operation of Sites Reservoir Project would reduce those flow events, lessening the likelihood the Proposed Project will trigger pulse protections. Third, these projects cumulatively not only cause the most significant	Analysis, and Other Environmental Review Issues. With respect to the first example provided in the comment, impacts are assessed qualitatively, and the cumulative impact is concluded to be significant to fish and aquatic resources. Accordingly, mitigation as described in Chapter 12, Fish and Aquatic Resources, is required for the project alternatives' incremental contribution to cumulative effects. Impacts after incorporation of mitigation in Chapter 12 are less than significant. With respect to the second example, the Sites Reservoir project also includes pulse protection criteria, thereby limiting the potential for the types of effects suggested by the comment. Please refer to Appendix 3A, Identification of Water Conveyance Alternatives, which includes Los Vaqueros in context of the alternative's discussion and Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, that provides a summary of and includes Los Vaqueros to the cumulative projects list. Please also see the discussion of refinement of operational criteria in Common Response 3, Alternatives Development and Description. With respect to the third example provided in the comment, it is unclear what the basis is for the comment's suggestion that cumulative effects cause the most significant changes in the driest years. In the case of the proposed project, potential diversions are increasingly restricted with lower river flow entering the Delta (see discussion of operational criteria in Chapter 3, Description of the Proposed Project and Alternatives). The proposed project and project alternatives would not affect floodplain inundation because diversions occur in the north Delta, downstream of floodplains such as the Yolo Bypass; see also the discussion of upstream aquatic species in Common Response 1, which discusses that limited to no changes are expected in upstream rivers and reservoirs because of operation of the Delta Conveyance Project. As such, there would be no biologically meaningful effect on fish species in areas upstream of the north Delta intakes. The incremental effect on inundation of bench rearing habitat is assessed in Chapter 12 (e.g., Impact AQUA-2) and feasible mitigation is proposed to reduce the potentially significant impact to less-than-

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	changes to surface water during the driest years when impacts to fish and wildlife, system-wide and from the Proposed Project, are likely to be the most severe, but would also diminish flows in wetter years, potentially shifting them drier in terms of flow, and likely decrease the frequency, duration, and/or magnitude of high flow benefits such as floodplain inundation and habitat rejuvenation. Given the interconnected and complex dynamics of the Sacramento-San Joaquin Delta, it is critical to fully understand how such large projects would cumulatively affect the watershed and aquatic species. Therefore, CDFW recommends a more extensive and quantitative cumulative analysis analyzing and describing such interactions be conducted and included in the EIR.	significant levels.
568-14	Baseline Assumption of 2020 SWP ITP/ 2019 NMFS and USFWS BiOps. The DEIR uses the 2019 NMFS and USFWS Biological Opinions (BiOps) on the long term operations of the CVP [Central Valley Project] and SWP [State Water Project] as well as the 2020 SWP Incidental Take Permit (ITP) for the long-term operation of the SWP in the Delta [Sacramento-San Joaquin Delta] to establish the Existing Conditions and No Project Alternative scenarios, stating that reinitiation of consultation is underway but the issuance of new BiOps and SWP ITP is not anticipated for several years. It is foreseeable that the ongoing re-consultation process will require substantial changes to both CVP and SWP operations, currently not reflected in the 2019 BiOps and 2020 SWP ITP. Thus, the No Project Alternative as presented in the DEIR [Draft Environmental Impact Report] is likely not an accurate depiction of future conditions (2040)	Please refer to Chapter 1, Introduction, related to the history of the 2008 and 2009 Biological Opinions (BiOps). Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding defining the existing baseline conditions in accordance with CEQA requirements, and proper inclusion of the 2019 USFWS and NMFS BiOps and the 2020 CDFW Incidental Take Permit (ITP). As described in that Common Response, DWR has used the latest publicly approved descriptions regarding operations of the CVP and SWP for the 2020 environmental baseline and for the reasonably foreseeable future conditions. CEQA provides that a lead agency may define existing conditions by referencing conditions expected when the project becomes operational if supported by substantial evidence (CEQA Guidelines, § 15125). Because the existing BiOps and ITP are under reconsultation and/or litigation, DWR agrees that future changes are foreseeable; however, it is unknown what will replace the existing BiOps and ITP. In the absence of substantial evidence supporting specific conditions expected when the project becomes operational, it would be

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	absent the Proposed Project. The Existing Conditions scenario is also not an accurate depiction of current conditions given ongoing litigation resulting in a court-ordered Interim Operations Plan for water year 2022, and ongoing proceedings related to operations in future years and until reinitiation is complete. This uncertainty in current conditions potentially hinders readers' understanding of potential Project impacts that may arise from changes to surface water operations and aquatic species conditions, when compared to the reasonably foreseeable future conditions without the Proposed Project. In addition, because multiple responsible agencies must rely on the EIR for discretionary decision making, modifications to CVP and SWP operations that occur during the Project approval process could complicate the CEQA [California Environmental Quality Act] processes for these responsible agencies. CDFW [California Department of Fish and Wildlife] recommends acknowledging the additional uncertainty regarding Existing Conditions and the No Project Alternative, given reasonably foreseeable changes to future operations of the CVP and SWP that are likely to arise out of the re-consultation process, and propose a more comprehensive and cautious mitigation strategy reflective of the uncertainty, and responsive to the greatest potential impacts identified from operations of the Proposed Project to CESA- [California Endangered Species Act] and ESA- [Federal Endangered Species Act] listed species, to ensure those impacts are brought down to less than significant.	highly speculative to include something other than the existing requirements in the baseline. As described in Common Response 1, DWR is responsible for defining the existing baseline conditions under CEQA, comparing the project alternatives to the existing baseline conditions, and mitigating potentially significant environmental impacts attributed to the operation or construction of the project, not as a result of speculative future regulatory changes. The impacts of the project are defined and analyzed throughout the EIR. DWR is not required to mitigate for "worst case scenarios." In addition, the proposed mitigation accounts for consideration of extreme hydrologic conditions (e.g., the tidal and channel margin mitigation is based on the greater of the 2020 vs 2040 modeled impact). Please also refer to Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, specifically the section titled Existing Conditions Assumptions for Ongoing Programs and Policies. While this appendix provides additional discussion regarding the use of the 2019 BiOps and the ITP, it also discusses applicability of future federal and state regulatory requirements to which the project would comply. For example, it is anticipated that USFWS, NMFS, and CDFW also will be involved in subsequent permitting needs as applicable through implementation of the Compensatory Mitigation Plan (CMP), which would be monitored by state and federal agencies.
568-15	Operations Spring Outflow Protections	As noted by the commenter and as described in Chapter 3, Description of the Proposed Project and Alternatives, the north Delta diversions would be subject to the Spring Outflow requirement under the 2020 State Water Project (SWP) Incidental Take Permit (ITP). The assertion that the EIR did

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	The proposed spring outflow protections identified in Chapter 3 Table 3-14 of the DEIR do not include protections for outflow from the Sacramento River. The DEIR [Draft Environmental Impact Report] currently relies on the 2020 SWP [State Water Project] ITP [Incidental Take Permit] Condition of Approval 8.17 Export Curtailments for Spring Outflow to provide outflow protections to aquatic species. However, while spring outflow requirement is an existing regulatory requirement for the SWP (as noted on p. 3-151), the 2020 SWP ITP Condition of Approval 8.17 does not include NDD [North Delta Diversions] in the export term nor does the DEIR clearly commit to including the NDD into the export term of Condition of Approval 8.17. Furthermore, CDFW [California Department of Fish and Wildlife] developed Condition of Approval 8.17 as a minimization measure for ongoing operations of existing SWP infrastructure in the south Delta [Sacramento-San Joaquin Delta], based on a relationship to the San Joaquin River inflow measured at Vernalis. That relationship serves as an operational mechanism to reduce Delta outflow-related impacts to aquatic species, caused by south Delta exports of the SWP. Given the location on the Sacramento River, and unique operations of the proposed NDD coupled with increased total annual SWP exports under the Proposed Project, CDFW requests the EIR commit to maintaining spring outflow based on the combined flow from both the Sacramento and San Joaquin rivers through the Delta.	not clearly commit to including the north Delta diversions into the export term of Condition of Approval 8.17 is inaccurate. Please see the following footnote in Chapter 3: “Spring outflow requirement is an existing regulatory requirement for the SWP. In complying with this existing requirement, total SWP exports including the north Delta diversions and the existing south Delta exports will be curtailed as needed.” The CalSim 3 model includes north Delta diversions in the export term, which is reduced to meet the Spring Outflow requirement. Furthermore, the Delta Conveyance Project includes additional operational criteria for the north Delta diversions (NDD), which are intended to minimize impacts on aquatic resources at and downstream of the intakes. Please also note that the EIR includes tidal habitat mitigation to address potential changes in flow (driven by changes in December–March) and associated potential effects to longfin smelt. As such, potential effects to listed species (e.g., longfin smelt) were determined to be less than significant with mitigation. In addition, please see Common Response 3, Alternatives Development and Description, regarding development of operational criteria and potential consideration of operational refinements during permitting and under the Operations Adaptive Management and Monitoring Plan (OAMMP) process.
568-16	OMR [Old and Middle River] Flexibility During Delta [Sacramento-San Joaquin Delta] Excess Conditions Chapter 3, Table 3-14 includes proposed new criteria for the NDD [North Delta Diversions] operations, as well as existing south Delta criteria, such as OMR Flexibility as permitted under	DWR is not currently considering modifications to the SWP south-of-Delta operational criteria such as Old and Middle River (OMR) Flexibility as permitted under the 2020 Incidental Take Permit. The operational criteria in the south Delta should be independently protective. A risk analysis is required before triggering the Condition of Approval 8.7 OMR Flexibility During Delta Excess Conditions. This method of risk analysis would be

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	the 2020 SWP [State Water Project] ITP [Incidental Take Permit] (Condition of Approval 8.7 OMR Flexibility During Delta Excess Conditions) and the 2019 USFWS [United States Fish and Wildlife Service] and NMFS [National Marine and Fisheries Service] BiOps [USFWS Biological Opinions]. Under the Proposed Project, the NDD are designed to export water in winter and spring months during excess conditions as defined by DWR [Department of Water Resources] and the U.S. Bureau of Reclamation (Reclamation). The DEIR [Draft Environmental Impact Report] does not adequately explain how OMR Flexibility, as permitted in the south Delta, interacts with NDD under excess conditions. As written in the DEIR, it is possible that DWR may operate under OMR Flexibility in the south Delta at the same time pulse protections are implemented in the north Delta; thereby negating the benefits of a pulse protection period by maintaining south Delta exports at high levels that can increase juvenile and adult anadromous fish entrainment into the south Delta. CDFW [California Department of Fish and Wildlife] requests that the EIR include additional descriptions of how south Delta OMR Flexibility will operate in conjunction with NDD pulse protections including assurances to coordinate operations when fish protections are being implemented at the NDD to minimize impacts to migrating anadromous fish in the Delta.	performed even when Delta Conveyance Project is operational if Condition of Approval 8.7 remains in place for the south Delta pumps. Operational criteria for the north Delta diversions are intended to minimize potential impacts associated with the Delta Conveyance Project operations, independent from south Delta criteria, or relaxation of that criteria at the existing facilities. Also see the discussion in Common Response 3, Alternatives Development and Description, for additional information on refinement of operations and shifting between north and south facilities.
568-17	SWP and CVP Export Capacity and Deliveries The Proposed Project, in conjunction with SWP [State Water Project] south Delta [Sacramento-San Joaquin Delta] exports, includes a physical export capacity of up to 10,300 cfs per DWR's [Department of Water Resources] water right, without the physical limitations of the Banks Pumping Plant or the U.S. Army Corps of Engineers' limitations on Clifton Court Forebay	Although the addition of the north Delta intakes and conveyance facilities may increase the total physical export capacity of the SWP, the existing 10,300-cfs limitation in DWR's water right would remain and govern combined north Delta diversions and south-of-Delta diversions. None of the project alternatives are proposing to routinely operate at such maximum capacity, which is neither foreseeable nor realistically possible considering the applicable regulatory requirements and newly proposed north Delta diversions operational criteria that would govern operations, as

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	diversions from Old River and West Canal. As presented in Chapter 6, Table 6-0, the Proposed Project, on average annually, will divert 543 TAF more than what is diverted under Existing Conditions and 4 TAF more than Alternatives 1 and 3. And of greater concern to species potentially stressed by decreased flows and limited habitat connectivity, is that in dry and critical years the Proposed Project will divert an average of 316 TAF more than Existing Conditions. Table 6-0 also shows an increase in CVP [Central Valley Project] total deliveries under the Proposed Project resulting from an average increase of 46 TAF in CVP exports and increased wheeling. Increased exports reduce Delta outflow which in turn impacts CESA- [California Endangered Species Act]- and ESA [Federal Endangered Species Act]- listed species with known abundance and/or survival outflow relationships, and impacts ecosystem function. Additionally, proposed wheeling operations between SWP and CVP under the dual operation scenarios are not clearly described in the DEIR, making it difficult to understand the potential impacts of these operations to flow, or subsequent consequences, if any, to species and their habitat. CDFW[California Department of Fish and Wildlife] recommends the EIR include an analysis of the potential wheeling operations including the total exports and associated OMR flows and Delta outflow for the Proposed Project and each alternative.	described in Chapter 3, Description of the Proposed Project and Alternatives. Please refer to Common Response 3, Alternatives Development and Description, for further discussion of Delta Conveyance Project operations including “maximum” use of intake capacity. Please note that the results presented in Chapter 5, Surface Water, and Chapter 6, Water Supply, provide a basis for understanding the impact assessments associated with other resource chapters, but potential changes in surface water or water supply themselves are not considered impacts under CEQA. As such, while the proposed project may offer additional opportunities to capture and divert excess water when available (within the limits allowed by the applicable existing water right and consistent with all regulatory requirements), the average annual additional diversions cited by the commenter did not translate into impacts on listed species or other aquatic resources that would remain significant after implementation of feasible mitigation measures. Please refer to the impact analyses presented in Chapter 12, Fish and Aquatic Resources, for more details. As explained in Common Response 3, project operational descriptions, including wheeling operations, are provided with an adequate level of details for planning purposes and for use in impact analyses contained in the resource chapters. The Chapter 3 section titled Use of North Delta Intakes for Wheeling clearly articulates the wheeling operations between SWP and CVP. The modeling accurately represents wheeling operations between SWP and CVP with the Delta Conveyance Project. It is expected that the enhanced flexibility offered by the project real-time operations will result in more efficient system operation where less water is needed to meet the water quality standards. As disclosed in Chapter 3, any such savings in carriage water through efficient salinity management could be exported. The hydrologic modeling conducted for each alternative is an accurate depiction of how each alternative would operate and the resulting changes in hydrologic conditions including river flows, reservoir storage, and water deliveries as described in Chapters 5 and 6, including the

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		increase in CVP deliveries mentioned in the comment. The EIR fully discloses potential changes in the Delta flows with the Delta Conveyance Project, including potential reduction in Delta outflow resulting from changes in carriage water, and thoroughly analyzes the environmental impacts of such changes in the Delta flows.
568-18	Preferential Pumping The DEIR does not include detail describing operations of the proposed NDD [North Delta Diversions] and how they will operate in conjunction with south Delta [Sacramento-San Joaquin Delta] facilities. The somewhat vague description of proposed operations coupled with the generalized descriptions or exclusion of associated modeling in the DEIR allow for a wide range of Project operations, with varying consequences for fish and wildlife resources. This uncertainty hinders CDFW's [California Department of Fish and Wildlife] ability to effectively understand the Project description and analyze potential Project impacts. For example, 1) there is little detail as to how the SWP [State Water Project] minimum health and safety diversion rate would be implemented. It is not clear whether proposed NDD maintenance minimum exports would be included as a part of the total SWP health and safety minimum exports in the south Delta or would be in addition to those. 2) The DEIR does not describe how water transfers may utilize the NDD. Because the Proposed Project is characterized as not integrated with the south Delta SWP facilities, CDFW assumes a) that the SWP will continue to export its identified proportional share of minimum health and safety exports identified in DWR's [Department of Water Resources] existing long-term operations for the SWP (600 cfs, with 1500 cfs total between	Please refer to Common Response 3, Alternatives Development and Description, regarding the adequacy of the level of operational details for planning purpose and impact analyses, as required under CEQA. As described in Common Response 9, Hydrologic Modeling and Approach, the hydrologic modeling conducted for each alternative is an accurate depiction of how each alternative would operate and the resulting changes in hydrologic conditions including river flows, reservoir storage, and water deliveries. Those changes are summarized in Chapter 5, Surface Water, and provide information that was used to support the environmental assessment and allow an accurate comparison of impacts between alternatives. Please refer to Chapter 3, Description of the Proposed Project and Alternatives, for more details regarding intake maintenance and pump maintenance activities, as well as a detailed discussion of water transfers under the section titled Use of North Delta Intakes for Wheeling. Please note that the proposed project does not include water transfers, but the EIR acknowledges possible demand to use the project's conveyance capacity for future transfers. Appendix 3H, Non-Project Water Transfer Analysis for Delta Conveyance, provides further information regarding water transfers. Of note, it demonstrates that the current capacity (without the north Delta diversion) is not fully utilized, so the additional export capacity offered by the project is unlikely to increase the amount of water transfers and the potential for direct or indirect impacts related to transfers. It is unclear what the commenter is referring to when asserting that the

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	SWP and CVP [Central Valley Project]), and b) that maintenance minimums for the NDD would be in addition to the south Delta minimums. This would result in SWP export minimums in excess of 600 cfs. CDFW recommends additional detail be added to the EIR clarifying the Proposed Project's operations so that potential impacts can be fully evaluated. Specifically, the EIR should describe what minimum health and safety diversion rates would be implemented by the Proposed Project, how water transfers may be utilized, and what SWP export minimums the Proposed Project anticipates considering both NDD and south Delta diversions.	proposed project is characterized as not integrated with the south Delta SWP facilities. This is inaccurate, as described in Chapter 3, section titled Integration of North Delta Intakes with South Delta Facilities. Please also note that the minimum export rates in place at the existing DWR Jones Pumping Plant and CVP Banks Pumping Plant to protect human health and safety are distinct from and serve a different purpose than the north Delta diversion maintenance flows that may occasionally be required for pump maintenance and testing at the proposed Delta Conveyance Project South Delta Pumping Plant or Bethany Reservoir Pumping Plant depending on the alternatives. The health and safety minimum export rates for the SWP and CVP would not change as a result of the implementation of the Delta Conveyance Project—for example, the 600 cfs limit identified would be taken at the south Delta and no diversions would occur at the north Delta diversions. If a portion of health and safety pumping occurs at the north Delta diversions, the total health and safety pumping would still be limited to the 600 cfs total. Maintenance diversions for Delta Conveyance Project facilities would be infrequent and limited both in volume and duration. As described in Chapter 3, the maintenance flow diversion rate is assumed to be one-half of a pump's rated capacity for 4 hours per month at most per unit (up to a maximum of 480 cfs for the proposed Delta Conveyance Project South Delta Pumping Plant under Alternatives 1, 2a, 2b, 2c, 3, 4a, 4b, and 4c and 300 cfs for the Bethany Reservoir Pumping Plant under Alternative 5). As an example, in Alternative 5, it may take about 2 and one-half days to exercise the proposed Delta Conveyance Project Bethany Reservoir Pumping Plant's 14 pumping units with a diversion flow of 300 cfs, but this would likely only occur when the north Delta intakes have not been operated for extended periods of time (i.e., more than 1 month has lapsed between diversions). Additional infrequent instances when maintenance flows may be required include (1) filling of the sedimentation basin and

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		tunnel system to prepare for diversion periods (only when the river stage increases more than a few feet over the system's present water level), but this would take less than a day at 100 cfs or less; and (2) vector control for the sedimentation basin, which would only be needed during long periods of no system operation during the vector breeding season and if winds do not adequately mix the basins, with an expected turnover of the basin volume in a day at about 250 cfs.
568-19	Simulated Project operations in the DEIR do not depict the maximum amount of water that can be diverted through the NDD [North Delta Diversions] under the operational rules identified for the Proposed Project. A sensitivity analysis in Appendix 4B prioritizes SWP [State Water Project] exports from the NDD from December through June, but modeling in June through November limits NDD exports below the allowable limits. Without modeling the maximum diversion possible from the NDD under the proposed operational criteria in all months and water year types, the potential impacts of the Proposed Project cannot be fully understood. CDFW [California Department of Fish and Wildlife] recommends that maximum NDD exports under the operational criteria should be modeled and evaluated in the EIR. Additional information describing how the proposed NDD will operate in conjunction with the existing south Delta [Sacramento-San Joaquin Delta] export facilities should be provided by water year type and month so that the description of operations can be compared with the life history stages of CESA [California Endangered Species Act]- and ESA [Federal Endangered Species Act]-listed fish species and consider potential impacts.	As described in Appendix 4B, North Delta Diversion Priority Sensitivity Analysis, the discussion includes more shifting than would be reasonably foreseeable, by prioritizing diversions at the proposed north Delta intakes over the existing south Delta intakes during certain times of the year. The analysis was performed to see how sensitive the system is to a specific change, not the specific magnitude. The north Delta diversion priority scenario described in Appendix 4B is not a foreseeable action. (CEQA Guidelines § 15126.6(f)(3) ["An EIR need not consider an alternative... whose implementation is remote and speculative."].) Moreover, as identified in Appendix 4B, prioritizing use of north Delta intakes would not substantively change results or impacts, including impacts on fish and wildlife species analyzed in Chapter 12, Fish and Aquatic Resources, and Chapter 13, Terrestrial Biological Resources, compared to the proposed project or have the potential to reduce the significant and unavoidable impacts identified in other chapters within the EIR. For these reasons, it is not considered an alternative in the EIR. (CEQA Guidelines § 15126.6(f) ["The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project."].) Common Response 3, Alternatives Development and Description, provides information on the steps DWR followed in developing the alternatives evaluated in the EIR. This Common Response describes how the Delta Conveyance Project operational scenario evaluated in the EIR was developed and why a single operational scenario is considered and is adequate for the purposes of CEQA. In addition, Common Response 3

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		includes additional information on circumstances when diversions could potentially change from the south to the north Delta intakes. The proposed operation of the project as described in Chapter 3, Description of the Proposed Project and Alternatives, and analyzed in Chapters 5 through 32 continues to prioritize the diversions from the south Delta export facilities, while only using the north Delta diversion to (1) augment exports in winter and spring when excess flows are present or (2) shift some diversions from the south Delta facilities to the north Delta intakes if it is efficient to meet Delta water quality standards. Summer shifting from south to north is represented appropriately and consistent with proposed project operations except for limited additional circumstances as described in Common Response 3. Given the above, the analysis within Appendix 4B is considered conservative and is suitable for its purpose to disclose whether any of the surface water or water supply changes documented in Chapters 5, Surface Water, and 6, Water Supply, would be appreciably different under different limited real-time operational circumstances and potentially result in a change in environmental conditions not similar to the proposed project, or already disclosed in Chapters 7 through 32 of the EIR.
568-20	NDD [North Delta Diversions] Pulse Protection and Bypass Criteria Flow-based Triggers for Salmonid Pulse Protections The Proposed Project's Wilkins Slough flow criteria to initiate and offramp fish-pulse protections, rather than real-time fish presence monitoring, are not compatible with other proposed large scale diversion projects in the Sacramento-San Joaquin Delta ecosystem (2020 SWP [State Water Project] ITP [Incidental Take Permit], 2019 NMFS [National Marine Fisheries Service] and USFWS BiOps [USFWS Biological Opinions]). The DEIR relies heavily on the findings of del Rosario et al. (2013) that showed a strong correlation between	Please see the discussion of operational criteria refinements provided in Common Response 3, Alternatives Development and Description. With respect to cumulative impacts, please see response to comment 568-13. The elements that the comment references are key considerations for adaptive management; please see response to comment 568-22 with respect to adaptive management.

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	flow at Wilkins Slough (between 300-500 m³ s⁻¹) and the first pulse of winter-run Chinook salmon presence at the Knights Landing rotary screw trap (5% of cumulative catch) based on water years 1999 through 2007. However, this relationship has not been substantiated in the recent historical record under water operations management defined in the 2008 USFWS BiOp and 2009 NMFS BiOp or under the current management strategies of the 2019 USFWS and NMFS BiOps and 2020 SWP ITP. Based on preliminary analyses presented to CDFW [California Department of Fish and Wildlife] by DWR [Department of Water Resources], CDFW is concerned that the proposed pulse protections triggered by flow, rather than fish presence, do not align with peak fish migration movements through the Sacramento River. CDFW requests the EIR rely on fish presence in upstream monitoring stations along the Sacramento River to initiate and off-ramp pulse protections. Because new, large diversions upstream of Wilkins Slough would affect implementation of flow-based criteria, CDFW also recommends that the EIR include a comprehensive quantitative analysis of cumulative impacts including the Sites Reservoir Project as well as commitment to a coordinated approach with the Sites Reservoir Project operations to ensure that the biological rationale for each project's pulse protection is realized.	
568-21	Frequency and Transition Criteria The proposed pulse protection approach only allows for a second pulse protection if an initial pulse protection occurs prior to December 1st. If an early season (prior to December 1st) pulse does not trigger, only one pulse protection period would be provided by the Proposed Project prior to June 30th.	Please see the discussion of operational criteria refinements provided in Common Response 3, Alternatives Development and Description. Note that potential effects on juvenile salmonid through-Delta survival will be mitigated with hydrodynamic tidal mitigation, as described in Chapter 12, Fish and Aquatic Resources.

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	Limiting pulse protections to a maximum of two periods disproportionately favors early migrating juvenile anadromous fish, does not effectively protect the diversity of migration strategies for juvenile winter-run Chinook salmon, and often does not provide protections for juvenile spring-run Chinook salmon later in the season. By conditioning a second (i.e., later) pulse protection on the successful implementation of an early season event, the Proposed Project effectively reduces protections offered to Chinook salmon as their migratory season progresses. Specifically, bypass flow protections transition from Level 1 (more stringent) to Level 3 (less stringent) throughout the season with pulse protection events designed to reset bypass criteria (i.e., move from less stringent bypass criteria back to more stringent). Because pulse protections are reliant on flows upstream of the NDD [North Delta Diversions], it is unclear how frequent and at what times of year pulse protections are likely to occur. By linking bypass criteria to pulse protections, it is likely that bypass flows later in the year will be reduced, compounding the potential Project impacts on spring-run Chinook salmon and other late migrating anadromous fish that will potentially only experience higher levels of diversions at the NDD (e.g., Levels 2 and 3). As a result, CDFW [California Department of Fish and Wildlife] anticipates more impacts (as protections are reduced) to CESA [California Endangered Species Act] - and ESA [Federal Endangered Species Act]- listed species later in the season. CDFW recommends the EIR include more protective operational criteria at the NDD that minimize take of, and impacts to, both juvenile winter-run and spring-run Chinook salmon throughout their migration season. Specifically, CDFW	

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	suggests including the following changes: 1) increasing the number of pulse protections to ensure that they span the entire migration season when winter and spring-run Chinook salmon juveniles migrate past the NDD, 2) committing to a minimum number of days per pulse protection period, and 3) including down-ramping criteria for bypass flows once pulse protections have ceased for the season.	
568-22	Real-Time Operations and Adaptive Management Chapter 3, Sections 3.17 and 3.18 of the DEIR include brief discussions of the role of real-time monitoring and adaptive management in a) addressing uncertainty in operational impacts of the NDD [North Delta Diversions], and b) refining operational criteria to minimize impacts to aquatic resources. However, the DEIR currently lacks a detailed description of the process used to make refinements to operational criteria, and instead relies on flow-based operational criteria without any reference to the link between real-time fish monitoring data and proposed operations. Without establishment of performance criteria and a clear description of how criteria will be amended, it is unclear from the DEIR how real-time operations will be developed and implemented and how they will ensure less-than- significant impacts to aquatic resources, including CESA [California Endangered Species Act] - and ESA [Federal Endangered Species Act]- listed species. In the absence of such details, or evaluation in the EIR of operational alternatives that incorporate greater avoidance measures, it is difficult for CDFW [California Department of Fish and Wildlife] or other readers to understand how impacts will be avoided through future real-time operational changes. CDFW requests that the EIR include a complete Adaptive	The EIR presents substantial evidence supporting its impact conclusions and the effectiveness of proposed mitigation measures to reduce potential impacts on fish and aquatic resources to a less-than-significant level. For purposes of CEQA, “substantial evidence” means “enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached.” (CEQA Guidelines, § 15384(a).) In other words, analysis that complies with CEQA because it is supported by substantial evidence does not eliminate the potential for unanticipated outcomes. Adaptive management exceeds CEQA’s requirements because it constitutes a science-based approach to monitor and respond to uncertainties that remain even where conclusions and mitigation measures included in the EIR are supported by substantial evidence. Please see Common Response 3, Alternatives Development and Description, for a discussion of the Operations Adaptive Management and Monitoring Plan (OAMMP), which addresses uncertainty related to the north Delta intakes, and a description of the OAMMP development and decision-making process. The OAMMP will include a governance discussion that identifies how decisions related to operation refinements will be made and which agencies will be involved. As further described in Common Response 3, the OAMMP will identify objectives, study metrics and thresholds for triggering adaptive management responses, and a governance process for implementation. As explained above, the OAMMP is not proposed as a CEQA EIR mitigation measure to reduce potential effects of the project alternatives. The OAMMP will be used to monitor environmental

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	Management Plan based on established biological goals and objectives that utilize best available science to evaluate progress towards those objectives. The approach should include a clear decision-making structure through which any changes in approach to minimizing or mitigating impacts to species would ensure that biological objectives are met.	conditions (e.g., flow and biological data) and include performance criteria (e.g., level of effects identified through the effects analysis, such as through-Delta survival for juvenile salmonids) to confirm effects under the project are consistent with those analyzed during environmental compliance. If determined to be necessary, the OAMMP will inform potential operational refinements, including consideration of biological data to further optimize operations. The discussion of real-time operations included in the project description (Chapter 3, Description of the Proposed Project and Alternatives) describes the process in which the proposed criteria will be implemented. Please see Common Response 11, Terrestrial Biological Resources and Compensatory Mitigation Plan, for a discussion of the adaptive management included in the CMP, which addresses uncertainty related to habitat restoration. Note, however, as described in the section on use and incorporation of mitigation measures in Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, that CEQA does not mandate that the monitoring program incorporate adaptive management.
568-23	CalSim 3 Modeling Framework As stated in Appendix 5A A.7, "the use of CalSim 3 for the Draft EIR is the first application of the new model for environmental review purposes" (p. A-3). Prior analyses for large scale diversion projects in the Sacramento-San Joaquin Delta ecosystem have relied on CalSim II, which went through a peer review process (Close et al. 2003). At the time the DEIR was released, CalSim 3 documentation was still in draft form, with the complete documentation released on November 15, 2022. Outputs from CalSim 3 are being used as inputs to many of the	Please see the discussion of CalSim 3 as the best available tool in Common Response 9, Hydrologic Modeling and Approach, for an explanation of the documentation provided in the EIR, including the assumptions and operational guidelines used to develop and apply CalSim 3 for various modeling scenarios. Common Response 9 also provides an explanation of the evolution of CalSim II to CalSim 3. DWR has described and validated components like the Artificial Neural Networks (California Department of Water Resources 2023a). As described in Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, in the section titled CalSim, CalSim 3 replaces its predecessor, CalSim II, for conducting planning studies

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	other models used to evaluate the Proposed Project (e.g., DSM2, HEC-5Q, LTGEN, SWP [State Water Project] Power, DeltaGW). These models are subsequently used as inputs to biological models (e.g., SALMOD, Martin and Anderson models, SCHISM) which support the DEIR's findings of significance. As such, CDFW [California Department of Fish and Wildlife] requests documentation of any rules and assumptions (e.g., 3,000 cfs south Delta water quality limitation) or updates (e.g., CAM Forecast, ANN) made within CalSim 3 as well as validation figures associated with CalSim 3 outputs to better understand 1) strengths and weakness of the updated model and associated model components, 2) areas of divergence between CalSim 3 outputs and known comparative historical data, 3) the utility of the model's outputs for subsequent biological impact assessment, and 4) the relative level of compounding uncertainty associated with specific outputs/ projections. For CDFW and others to understand CalSim 3's limitations, model documentation and validation is necessary. While documentation has now been released (November 2022), it does not include thorough description and validation of key components like the Artificial Neural Networks (ANNs) and Forecasting routine. CDFW recommends DWR [Department of Water Resources] release more thorough documentation for CalSim 3 to facilitate transparent review and understanding of this keystone tool and its utility. For example, the ANNs which control flow-salinity relationships and carriage water benefits should be validated against historical operations when salinity was controlling. Such a calibration would inform how the water cost of salinity operations compares to historical operations. Other major model components like dynamic forecasting, groundwater returns, and reservoir operations should be	relating to operations of SWP and CVP, and the underlying assumptions incorporated into CalSim II were carried forward and are not necessarily unique to CalSim 3. Like CalSim II, CalSim 3 cannot be compared to historical conditions. The purpose of either CalSim II or CalSim 3 is to simulate response of SWP and CVP operations to new conditions that did not happen historically.

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	documented and validated independently of the overall CalSim 3 model and provided for the EIR. Without thorough documentation, it is not possible to understand the model's limitations and to interpret results correctly.	
568-24	Artificial Neural Networks As described in Appendix 5A, Section B.3.5 and Section C.6.3, ANNs are used in CalSim 3 to approximate DSM2 salinity results and set flow-salinity relationships used in CalSim 3 to meet regulatory requirements. The ANNs have a complex training process involving CalSim 3 and DSM2, but the results of this training process are not presented. A validation report of the ANNs, comparing to DSM2 and to historical salinity, is necessary to enable users of CalSim 3 (and dependent models) to understand the errors associated with the predictions from the ANNs. Appendix 5A Section C states that the ANNs were trained with 6,000 cfs at the NDD [North Delta Diversions] with the Suisun Marsh Salinity Control Gates (SMSCG) operating throughout the year (p.C-15). However, Alternatives 2a and 4a both have up to 7,500 cfs diversions. Therefore, the results used to train the ANNs do not cover the full range of the diversion flow rates proposed, potentially leading to inaccurate results. Additionally, it is CDFW's [California Department of Fish and Wildlife] understanding that SMSCG are not to be operated year-round, although the 2020 SWP [State Water Project] ITP [Incidental Take Permit] does include requirements in above normal, below normal, and dry years to increase the frequency of operations during the July through September period. Therefore, CDFW recommends the EIR include better documentation of proposed operational scenarios as well as a validation report for the ANNs, a critical component of CalSim	Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, in the section titled Artificial Neural Network, states that the Artificial Neural Network (ANN) is calibrated or trained on DSM2 results that may represent historical or future conditions using a full-circle analysis. The Appendix 5A, Section B, section titled Existing Conditions describes the key assumptions used to develop the CalSim 3 model that reflect existing conditions. The Appendix 5A, Section B, section titled Model Limitations describes the various limitations associated with development and application of CalSim 3 and acknowledges these limitations are not included within the modeling framework. Alternatives 2a and 4a potentially result in slightly different Delta inflows and exports relative to the other alternatives analyzed in the EIR. However, these changes to the Delta hydrology are within the range of operations included in the DSM2 simulation used to train the ANN. Therefore, it would not require retraining of the ANN.

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	3, so that the uncertainty surrounding salinity control operations can be better understood.	
568-25	Forecasting As stated in Appendix 5A, Section B.3.7, "CalSim 3 includes a dynamic forecasting routine to mimic DWR's [Department of Water Resources] forecasting procedures" (p. B-13). The procedures (updating monthly) may be mimicked, but CDFW's [California Department of Fish and Wildlife] review indicates that CalSim 3 does not consistently mimic the results of Bulletin 120 forecasting well. The Sacramento Valley water year index and San Joaquin Valley water year index, which are incorporated into CalSim 3 and set for the final time by CalSim 3's mimicking of the median May forecast, result in incorrect water year type classifications almost twice as often as Bulletin 120. The DEIR therefore relies on CalSim 3 water year types that are skewed toward wetter-than-actual Sacramento Valley water year type schemes. For example, 1) from 1955 to 2022 (68 years), the Bulletin 120 May Median Forecast of the Sacramento Valley water year index was different from the actual runoff water year type six times (9%), three times wetter and three times drier than the actual runoff index. 2) CalSim 3 May Sacramento Valley water year type differs from historical in 18 out of 94 years (19%), with 14 of those being wetter and four of them being drier than historical runoff. 3) The May 90% Exceedance Forecast of the Sacramento River Index (SRI) triggers an off-ramp of May and June D-1641 requirements if it is below 8.1 MAF. Since 1978, the May 90% SRI forecast has been below the 8.1 MAF threshold four times, but in CalSim 3 all four of those years have a value greater than 8.1 MAF. The wet bias of the Sacramento Valley water year index results	Please see Common Response 9, Hydrologic Modeling and Approach, regarding best available tools, modeled representation of future conditions and climate change, modeled representation of CEQA baseline existing conditions, and climate change assumptions as input into hydrologic model. As described in Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, in the section titled CalSim 3, CalSim does not use historical hydrology or operations, it is a level of development model. It computes the water year types using the rules from State Water Resources Control Board Decision 1641 (D-1641) with the hydrology and operations from the specific simulation. CalSim 3 includes preliminary determinations of year classification made in February, March, and April with final determination in May, similar to the typical Bulletin 120 process using these rules. Since CalSim 3 does not model historical water supply, the computed water year types are not expected to match historical water year types. Even though the water year types in CalSim 3 do not match historical water year types, all five water year types are represented in the 94 years simulated using CalSim 3. This allowed DWR to evaluate the Delta Conveyance Project effects under all the water year types. Finally, as CalSim 3 was used to compute water years under both the baseline and project alternatives, the comparative nature of the analytical framework helps to address the concern stated in the comment.

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	in CalSim 3 overpredicting the environmental water requirements and releases, depicting better conditions for aquatic species than would realistically occur. Consequently, CDFW recommends the EIR use a water year type forecast routine that better mimics reality, a reduced variance version of the existing routine, historical, perfect foresight, or some combination thereof.	
568-26	Temporary Urgency Change Order Considerations The DEIR does not include Temporary Urgency Change Order relaxations in its CalSim 3 modeling (p. B-66). DWR [Department of Water Resources] and Reclamation have submitted Temporary Urgency Change Petitions (TUCPs) to the State Water Resources Control Board in water years 2021 and 2022 as well as in 2014 and 2015, requesting modifications to outflow requirements and other fish and wildlife-related criteria. TUCPs are one of the tools relied on in the drought toolkit. In light of this, CDFW [California Department of Fish and Wildlife] recommends the EIR include a sensitivity analysis that evaluates operations of the Proposed Project, and associated impacts, during multi-year droughts when TUCPs might be requested.	Please see Common Response 9, Hydrologic Modeling and Approach, regarding best available tools, modeled representation of future conditions and climate change, and consideration of drought and temporary urgency change petitions. Common Response 3, Alternatives Development and Description, also provides additional discussion as to why TUCPs were not considered as an element of the proposed project or alternatives evaluated in the EIR. As described in the section titled Relaxation of Regulatory Requirements, the section titled Monthly Timestep, and the section titled Extreme Conditions in Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, CalSim 3 is a monthly time-step model and does not represent real time policy and operational decisions or extreme circumstances that deviate from standard operating policies.
568-27	Climate Change Modeling Review of the 2040 Central Tendency (CT) climate CalSim model indicates the driest 10 water years in the record have an average of 2% more water (8 river index) under the 2040 CT climate scenario. The Sacramento Valley water year index, which should be more sensitive to snowpack, also moves to wetter water year types in the 2040 CT climate modeling with eleven years becoming wetter (May Forecast) and only two years becoming drier. The DEIR acknowledges reduced	Please see Common Response 9, Hydrologic Modeling and Approach, regarding best available tools, modeled representation of future conditions and climate change, modeled representation of CEQA baseline existing conditions, and climate change assumptions as input into the hydrologic model. Common Response 6, Climate Resilience and Adaptation, also addresses the 2040 Central Tendency climate scenario as well as other scenarios considered in the climate change analysis. Please also note that the CalSim 3 model was used for both existing conditions and the 2040 Central Tendency (CT) scenario and that these models are not intended for use in a predictive approach; rather, they are to be used within a

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	snowpack as a consequence of climate change (see e.g., p. 30-12), but it is not clear that the 2040 CT forecast routine properly accounts for reduced snowpack or other likely effects of climate change. For example, based on the 2040 CT climate CalSim model, it appears that both the Sacramento Valley and San Joaquin Valley water year indices shift toward wetter water year types under the climate change scenario. CDFW [California Department of Fish and Wildlife] recommends the EIR employ a new climate change analysis depicting an increase in frequency, duration, and/or severity of droughts and reduced snowpack, consistent with the narrative provided in Chapter 30.	comparative analytical framework, as explained in response to comment 568-25, ensuring robustness of the analyses. In addition, as described in Appendix 30A, CalSim 3 Results Sensitivity to 2040 Climate Change and Sea Level Projections, a comparison of three different climate change and sea level rise scenarios under the 2040 scenario showed that they did not differ substantially from the other 2040 simulations analyzed in the EIR, nor from each other. The modeling approach adopted throughout the EIR is consistent with the narrative in Chapter 30, Climate Change, including an expected increase in drought frequency and reduced snowpack as mentioned in the comment.
568-28	Aquatic Biological Resources. CESA [California Endangered Species Act]- and ESA [Federal Endangered Species Act]-listed aquatic species in the Delta [Sacramento-San Joaquin Delta] are at record low abundance following years of sharp population declines with uncertainty regarding their resiliency and recovery as prolonged drought exacerbates conditions in the Delta. CDFW [California Department of Fish and Wildlife] requests the EIR link declining trends in species abundance and the current status of each species clearly with the analyses of anticipated impacts, including the 5% threshold of significance established for modeling results. CDFW requests the EIR include additional justification for the use of the 5% threshold across all modeled results, with an analysis of the potential increased effects associated with compounding impacts on multiple life stages of each species.	With respect to the comment's request to link declining trends in species abundance and the current status, where necessary the text in the impact conclusions within Chapter 12, Fish and Aquatic Resources, has been augmented to link to discussion of species' status provided in Appendix 12A. As described in Chapter 12, population status (which reflects historical trends) was considered in impact conclusions so that differences less than 5% could be considered significant depending on species' status. Consistent with the comment's request, additional explanation for the 5% rationale has been added to Chapter 12. Quantitative analysis of compounding impacts on multiple life stages is provided by life cycle models where available; otherwise, the impact conclusions consider effects across life stages qualitatively.
568-29	CalSim 3 uses a monthly time step to generate monthly averaged flow data that can be used subsequently as inputs to aquatic biological models. Operations of the NDD [North Delta	The commenter requested daily time step data for Delta operations. Please see Common Response 9, Hydrologic Modeling and Approach, regarding best available tools, specifically the discussion on development, use and

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	Diversions] are most likely to change on a sub-monthly time step to target specific flow events. Project impacts associated with operations would likewise occur on a sub-monthly time step; therefore, the use of average monthly flow data is unlikely to capture the relative peak timings of flows and fish migration of the more vulnerable life stages. Similarly, the use of summary statistics as inputs and grouping of results can dampen the level of modeled effects fish may experience at a smaller time scale which may underestimate the actual impact of modeled operations on fish survival.	limitations with respect to monthly timestep. Chapter 12, Fish and Aquatic Resources, describes all the methods and tools used in evaluating the project's operational impacts on fish including CalSim 3. The approach used to map CalSim3 monthly flow volumes to provide simulated daily flows is described in the subsection titled Daily Patterning Procedure, found in the North Delta Diversion Operational section of Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling. For the reasons explained in Common Response 9, DWR has determined this approach to be consistent with the use of the best available tools and adequate for impact assessment purposes through the use of comparative analyses.
568-30	CDFW [California Department of Fish and Wildlife] recommends that the EIR include results of individual years on the extreme ends of the wet and critical water year types, to provide a better understanding of the full range in flow and storage expected under the Proposed Project. CDFW recommends that the EIR analyze and discuss the potential impacts from the Proposed Project operations under successive dry and critical years, as there is the potential that the Proposed Project may exacerbate drought-related impacts to species and warrant the need for additional mitigation measures.	The comment recommends analysis of extreme individual water years and operations under successive dry and critical years. Focusing on such situations is contrary to appropriate use of modeling results; see discussion of appropriate use of modeling results in Appendix 5A, Modeling Technical Appendix. Analyses included in the Final EIR based on CalSim include consideration of the range of hydrological conditions within the historical record (1922–2015), including successive dry and critically dry years. Quantitative life cycle or population dynamics analyses provide assessment of effects over successive years, for example the Winter-Run Chinook Salmon Life Cycle Model (see Attachment 3 to Appendix 12B) and the longfin smelt Delta outflow-abundance index analysis. Exceedance plots provided in Appendix 5A, Section B, Hydrology and Systems Operations Modeling, Attachment 3, CalSim 3 Model Results for Existing Condition and Alternatives at 2020, show individual years for flow and storage at a number of locations. Also refer to Common Response 3, Alternatives Development and Description, and Common Response 6, Climate Resilience and Adaptation, with respect to drought operations.
568-31	Winter-run and Spring-run Chinook Salmon. The NMFS [National Marine Fisheries Service] Viability	The comment recommends that the EIR include mitigation measures that will fully offset the increase in reverse flows at Georgiana Slough and provide increased juvenile rearing habitat both upstream and downstream

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	Assessment (NMFS 2022) identifies winter-run and spring-run (except Butte Creek population) Chinook salmon as having a high risk of extinction due to factors related to redundancy, resiliency, current population size and recent declines, and hatchery influence. Under 2040 conditions the Proposed Project operations are likely to affect the ongoing resiliency and ability of fish species to recover from periods of low abundance or stress induced by drought conditions, which may lead to a destabilizing effect on fish populations. The modeling results provided in Chapter 12 and the associated appendices are concerning given the current status and declining trends with winter-run and spring-run Chinook salmon. Chapter 12 of the DEIR concludes that impacts to winter-run and spring-run Chinook salmon are less- than-significant with mitigation; however, CDFW [California Department of Fish and Wildlife] is concerned that the DEIR does not provide adequate mitigation to address impacts associated with a reduction in Sacramento River outflow and increased reverse flows at Georgiana Slough. Instead, the DEIR identifies an undetermined quantity of mitigation to offset impacts on winter- and spring-run Chinook salmon. CDFW strongly recommends that that the EIR include mitigation measures that will fully offset the increase in reverse flows at Georgiana Slough and provide increased juvenile rearing habitat both upstream and downstream of the proposed NDD [North Delta Diversions].	of the proposed north Delta diversions. The proposed mitigation is to offset hydrodynamic effects of the north Delta intakes, which do not occur upstream of the intakes and so mitigation focuses on the downstream area given the far-field hydrodynamic effects. The extent of tidal habitat proposed for Mitigation Measure CMP, specifically CMP-25, has been added to Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, in the Final EIR based on hydrodynamic analysis conducted by California Department of Water Resources (2023b). Please also see the discussion of operational criteria refinements provided in Common Response 3, Alternatives Development and Description.
568-32	Juvenile Salmonid Delta Routing Chapter 12 DSM2 modeling results show reduced velocities downstream of NDD [North Delta Diversions] intakes (Table 12-28) and increased reverse flows at Georgiana Slough (Table 12-29) under the Proposed Project. Ongoing research shows that	The comment notes the potential for operations of the north Delta diversions to increase the frequency of reverse flows at the Sacramento River-Georgiana Slough junction and requests an analysis of this (e.g., based on the STARS model). The EIR already includes a junction analysis: see, for example, the Hydrodynamic Effects discussion in Impact AQUA-2

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	reductions in Sacramento River inflows can increase the frequency of reverse flows at Georgiana Slough and increase juvenile salmonid entrainment through Georgiana Slough (Hance et al. 2021; Perry et al. 2018 & 2010). Juveniles that enter Georgiana Slough have lower survival, greater migration duration, and higher risk of entrainment into the CVP [Central Valley Project] and SWP [State Water Project] export facilities than fish that remain in the mainstem Sacramento River (Newman and Brandes 2010; Perry et al. 2010). As river flow entering the Delta [Sacramento-San Joaquin Delta] decreases, the tidal transition zone (or zone with bidirectional flow) can shift upstream, which leads to longer travel times and longer travel distances for juvenile salmonids advected upstream on flood tides (Moser et al. 1991). Increasing the travel time, travel distance, and frequency of reverse flows can disorient fish and lead to increased predator encounters (Perry et al. 2018; NMFS 2019). To further evaluate the impacts associated with increased reverse flows at this junction, CDFW [California Department of Fish and Wildlife] requests the EIR include a junction analysis (e.g., STARS, Perry et al. (2018) spreadsheet tool) to better understand how reduced Sacramento River flows will impact juvenile route selection through the Delta so that potentially significant impacts to salmonids caused by the Proposed Project can be appropriately minimized or mitigated.	for winter-run Chinook salmon, which cross-references the proportion of flow analysis in Appendix 12B, Bay-Delta Methods and Results (see the section titled Flow into Junctions). The spreadsheet version of the STARS model (i.e., Perry et al. 2018) used to assess juvenile salmon through-Delta survival effects in the EIR includes junction flow and fish routing within it, in addition to flow-survival effects, thereby capturing the overall integrated effect of potential changes in routing. The same is true for the Delta Passage Model as used in the EIR.
568-33	Additionally, increased reverse flows at Georgiana Slough under the Proposed Project may impact the efficacy of the Georgiana Slough Salmonid Migratory Barrier, which is required as a minimization measure in the 2020 SWP [State Water Project] ITP [Incidental Take Permit] to reduce entrainment of salmonids into the interior Delta [Sacramento-San Joaquin Delta] (Condition of Approval 8.9.1). CDFW [California Department of Fish and Wildlife] requests the EIR	The comment requests the use of ELAM and particle tracking modeling (presumably the ECO-PTM) model to assess the potential operational impacts of increased reverse flows on effectiveness of the Georgiana Slough Salmonid Migratory Barrier. The ELAM model has never been applied in the context of a nonphysical behavioral barrier (i.e., the Georgiana Slough Salmonid Migratory Barrier) and DWR decided to use the methodology that has previously been used in this context. The ECO-PTM model has been applied in this context, employing the same 50%

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	include ELAM [Eulerian-Lagrangian-Agent Method] and particle tracking modeling to better evaluate the potential impacts of increased reverse flows resulting from Proposed Project operations on the operation and effectiveness (e.g., changes in juvenile survival and routing) of the Georgiana Slough Salmonid Migratory Barrier.	assumption for reduced routing into Georgiana Slough as was used in the EIR's effects analysis (Wang 2019). The similarity in ECO-PTM and Perry et al. (2018, STARS model) results from available comparisons (Wang 2019) indicates that use of ECO-PTM would be unlikely to give results markedly different from the patterns found using the methods (i.e., spreadsheet version of Perry et al. 2018) included in the EIR effects analysis. As noted above, the EIR effects analysis accounts for the barrier by including the lower mean rate (50%) of effectiveness found by DWR during studies in 2011 and 2012; as shown in the effects analysis (e.g., discussion of Through-Delta Survival under Impact AQUA-2), the relative difference between the alternatives and existing conditions in through-Delta survival is approximately the same with and without the assumption of a migratory barrier. The alternatives also include tidal habitat restoration (Mitigation Measure CMP, specifically CMP-25) to mitigate the potential effect of increased reverse flows that is of concern to the commenter. DWR anticipates that the ongoing assessment of effectiveness of the barrier as part of the SWP ITP implementation will provide a basis to allow future comparisons of effectiveness with the proposed operations, as necessary. Additionally, far-field routing and survival will be addressed in the Operations Adaptive Management and Monitoring Plan (OAMMP; see Chapter 3, Description of the Proposed Project and Alternatives) if DWR approves a project alternative, which will further ensure the effectiveness of the barrier.
568-34	Juvenile Salmonid Through-Delta Survival Chapter 12, Appendix 12B, and Appendix 12C provide through-Delta modeling results for juvenile Chinook salmon using the Perry et al. (2018) spreadsheet model, Delta Passage Model, and IOS model. The Perry et al. (2018) modeling results show a reduction in juvenile survival across each month and are supported by the Delta Passage Model results for winter-run and spring-run Chinook salmon and the IOS model results for winter-run Chinook salmon. Under the Proposed Project,	The comment expresses concern that through-Delta survival is only assessed based predominantly on data from acoustic tagging studies of large (>140 mm) Chinook salmon smolts. This is true for the Perry et al. (2018) spreadsheet model; however, as described in Appendix 12B, Bay-Delta Methods and Results, the Delta Passage Model (standalone as well as incorporated into the IOS model) flow-survival functions are based on juvenile salmon tagged with the JSATS (juvenile salmon acoustic telemetry system) for which the average length is smaller (e.g., ~93-112 mm per the study of Hance et al. [2022] cited elsewhere by the commenter; see

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	through- Delta survival is estimated to decrease for all juveniles migrating downstream due to reduced velocities and increased reverse flows that can result in longer travel duration, longer exposure to poor conditions in the Delta [Sacramento-San Joaquin Delta], and increased entrainment into the interior Delta (Perry et al. 2018). Due to the difficulty of tagging small individuals, flow survival relationships incorporated into these models rely predominantly on data from acoustic-tagging studies of large (>140 mm) Chinook salmon smolts; therefore, through- Delta survival estimates should primarily be used to inform smolt survival estimates and not be relied upon to represent rearing survival (Simenstad et al. 2017). Juvenile salmon less than 80 mm are more likely to rear in the Delta for extended periods of time rather than emigrate quickly from the Delta (Moyle 2002) and likely experience greater, prolonged impacts of reduced Sacramento River inflows south of the NDDs [North Delta Diversions]. Thus, the modeling results may underestimate the potential impacts of the Proposed Project on through-Delta juvenile salmonid survival. Based on the results presented in the DEIR and given the likelihood that the models used are underestimating impacts of the Proposed Project on through-Delta juvenile salmonid survival, CDFW [California Department of Fish and Wildlife] recommends the EIR identify the potentially significant impacts of the Proposed Project for winter-run and spring-run juvenile Chinook salmon and include an appropriate mitigation strategy to ensure those impacts are brought down to less than significant levels.	comment 568-32). The commenter expressed concern that the Draft EIR did not address potential effects to smaller, rearing juvenile salmon. However, this was done with respect to habitat suitability, in particular the availability of inundated riparian and wetland bench rearing habitat (for detailed discussion, see Impact AQUA-2 for winter-run Chinook salmon). The results of this analysis indicated a potentially significant impact that required mitigation with Mitigation Measure CMP (see Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, specifically CMP-26) (California Department of Water Resources 2023b).
568-35	Juvenile Salmonid South Delta Entrainment As noted above, [Comment 34] under lower Sacramento River inflows, juvenile salmonids may move through Georgiana Slough more frequently, exposing them to lower survival	The comment notes limitations of the salvage-density method; these are acknowledged in the EIR and cross-references are provided to other analyses accounting for such effects (see Impact AQUA-2, for example). As noted in the EIR, various regulatory requirements would be implemented

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	routes in the interior Delta [Sacramento-San Joaquin Delta]. Chapter 12, Tables 12-25, 12-26, 12-49, and 12-50 include entrainment results from the Salvage-Density Method that predict a reduction in entrainment of juvenile winter-run and spring-run Chinook salmon at the SWP [State Water Project] export facility and a net increase in entrainment at the CVP [Central Valley Project] export facility. The Salvage-Density Method does not incorporate the risk of increased routing of salmon into the interior Delta due to reduced flows downstream of NDD [North Delta Diversions] intakes; therefore, it does not reflect the potential increase in juvenile salmon exposure to export operations through increased presence in the interior Delta. The Salvage Density Method also does not evaluate the risks of reduced Sacramento River flow (or any outflow conditions) on salvage in the south Delta. Therefore, the entrainment results presented for SWP and CVP export facilities may underestimate the level of juvenile salmonid entrainment under the Proposed Project operations. CDFW [California Department of Fish and Wildlife] recommends the EIR include further analysis to assess potential Project impacts to routing of salmonids into the interior Delta as well as development of a robust mitigation strategy to offset the increased entrainment at the CVP resulting from the Proposed Project.	under existing conditions and therefore are part of the baseline and also part of the No Project Alternative and are incorporated into all project alternatives to minimize entrainment effects on winter-run Chinook salmon. With respect to the recommendation for an analysis of routing into the interior Delta, see the discussion of junction analysis in response to comment 568-32. To address the significance of the effect, DWR included Mitigation Measure CMP, specifically CMP-25. The extent of tidal habitat proposed for Mitigation Measure CMP, specifically CMP-25, has been added to the Final EIR Appendix 3F based on hydrodynamic analysis conducted by California Department of Water Resources (2023b).
568-36	Winter-run Life-Cycle Modeling The life-cycle modeling results for winter-run Chinook salmon are not consistent across the models presented in Chapter 12. IOS modeling results (Table 12-38) indicate an 8- 11% decrease in female escapement under the Proposed Project across water year types, further supported by the OBAN modeling results (Table 12-43) that show a 12% decrease in total escapement (assuming no near-field mortality at the NDD [North Delta	Consistent with the comment's request, an attachment describing the Winter-run Chinook Salmon Life Cycle Model and main results has been added to Final EIR Appendix 12B, Bay-Delta Methods and Results. As noted in Chapter 12, the mechanisms and explanation for the results of this model will continue to be investigated and will be reported during the project permitting process. Note that the EIR's conclusion of a potentially significant impact requiring mitigation for winter-run Chinook salmon considers the weight of evidence from multiple analyses, including the

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	Diversions] intakes). In contrast, the Winter-run Chinook Salmon Life Cycle Model results (Table 12-43a) suggest an increase in spawner abundance by 5.19% under the Proposed Project. CDFW [California Department of Fish and Wildlife] considers the life-cycle modeling results for winter-run Chinook salmon to be a critical aspect of the impact analysis, and to-date does not understand the mechanisms that are leading to these conflicting results. CDFW requests that the EIR include complete model documentation for the version of the Winter-run Chinook Salmon Life Cycle Model, including ePTMvII, used to produce Table 12-43a and a complete explanation of why these results differ from IOS and OBAN modeling results so that CDFW and other readers can better understand the significance of the Project impacts to the species.	Winter-run Chinook Salmon Life Cycle Model (which gave a positive result from the perspective of the project alternatives) as well as other analyses such as the Delta Passage Model and DSM2-HYDRO analyses (which generally gave negative results from the perspective of the project alternatives).
568-37	Adult Salmonid Straying The DEIR does not include a quantitative analysis regarding adult salmonid straying, but instead relies on the assumption that straying rates of adult hatchery-origin salmon are low when juveniles are released in river rather than released in the Bay during drought conditions. CDFW requests that the EIR include a flow change analysis for Sacramento River flows at Freeport during the period of adult upstream migration to better understand potential straying rates for adult salmon and how those could be affected by the Proposed Project.	The comment requests inclusion of a flow change analysis to characterize potential straying rates for adult salmon. However, while there may be differences in Sacramento River flows because of the project, the cited study (Marston et al. 2012) demonstrates that straying rates for Chinook salmon returning to the Sacramento River are low over a range of hydrological conditions. (In-river hatchery-origin releases are the most relevant results from that paper to infer effects on the salmon species of concern in the EIR because they are the best available data for fish returning to natal areas without having been moved downstream). Therefore, there is no quantitative basis to infer potential changes as a result of flow differences under the proposed project; rather than an assumption as suggested by the commenter, the qualitative analysis is based on published data providing discussion of a range of hydrological conditions. Additional language was included to clarify that the cited study was across a range of hydrological conditions. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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		Please also see response to comment 568-186 regarding the issue of straying.
568-38	Delta Smelt Delta Smelt Reduced Spawning Habitat. Construction of the NDD [North Delta Diversions] is expected to limit access to Delta smelt spawning habitat by creating a passage barrier within the Sacramento River. Chapter 12 provides a series of assumptions related to Delta smelt such as current spawning locations and swimming ability that are inconsistent with currently available data. For example, Delta smelt likely reach upstream spawning locations on the Sacramento River, such as those near the Garcia Bend boat ramp, by using low velocity habitat within the channel margins of the river (IEP 2022). Once constructed, the NDD would force Delta smelt further out into the channel where they are unlikely to swim against higher water velocities in all but the driest of years, thereby limiting Delta smelt's access to upstream spawning habitats. The DEIR assumes that Delta smelt will be able to swim past the NDD by using dry, low flow periods as representative flow in its analysis coupled with the assumption of stronger swimming ability compared to what current lab studies and conceptual models suggest (i.e., IEP-MAST 2015; Swanson et al. 1998). Because of this, the DEIR concludes that access to habitat upstream of the NDD would not be limited. CDFW [California Department of Fish and Wildlife] disagrees with this conclusion on the basis that Delta smelt currently use upstream habitat and are not known to be a strong swimming fish, especially under typical flow conditions. Therefore, CDFW recommends that the EIR assume a poor swimming ability for Delta smelt and a reduced ability to swim past the NDD, consistent with current understanding of	The comment suggests that the analysis of adult delta smelt passage to upstream habitat would not be limited because of assumptions made regarding delta smelt swimming ability and low flow. The assumed swimming velocity was based on results from the Swanson et al. laboratory study cited in the comment. The quantitative analysis in Impact AQUA-6 in Chapter 12, Fish and Aquatic Resources, illustrates that if delta smelt solely swam along the fish screens at a relatively high rate, the probability of passage would be relatively low; including lower swimming velocity as suggested by the commenter would give an even lower probability of passage. (It is not clear what the IEP 2022 reference is that is being cited in this regard by the commenter, as this was not provided in the list of references in the comment letter.) The analysis acknowledges the potential for negative effects and notes that although suitably low velocity for upstream migration based on Freeport channel velocity may occur during a relatively low proportion of time, it is possible that upstream migration would be concentrated during these limited periods. In addition, Impact AQUA-6 describes that 2D hydraulic modeling shows that there is a considerable extent of sufficiently low-velocity habitat on the opposite (west/right) bank of the Sacramento River from the north Delta intakes. The analysis also notes that the cylindrical tee fish screens and their associated manifolds, as well as the support piles for the log boom structure may provide velocity refuge for upstream migrating adult delta smelt occurring near the intakes, thereby reducing the extent of the potential negative effect. As described further in Impact AQUA-6, low-velocity habitat for migration may also occur near the riverbed and field studies have shown delta smelt use of the bottom half of the water column, such as on ebb tides. In addition, if encountering high-velocity habitat at the north Delta diversions intakes, delta smelt could also switch banks to seek low-velocity habitat, thereby avoiding complete passage blockage and only perhaps resulting in some migration delay, with

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	the species. Additionally, the EIR should quantify the loss of shallow sandy beach habitat upstream of the NDD for use as a basis for quantifying compensatory mitigation for Delta smelt due to construction of the NDD to mitigate the potentially significant Project impacts to the species.	historical beach seine data at Clarksburg illustrating use of the opposite bank from Intake B (see the table titled Number of Delta Smelt Collected by Beach Seining in the Sacramento River Between River Miles 12 and 80, January–June 2012–2021, With Frequency of Years with Collection of At Least One Individual Compared to 1994–2014 in Chapter 12). Impact AQUA-6 also summarized the results of a statistical analysis of another intake, the Freeport Regional Water Authority intake, in the north Delta and did not find evidence that the intake reduced upstream occurrence of delta smelt during and following construction, in comparison to the preconstruction period. As noted in Impact AQUA-6 in Chapter 12, the proportion of the delta smelt population that would be exposed to the north Delta intakes would be very low. As also described in Impact AQUA-6, uncertainty in the potential effects on upstream passage of adult delta smelt would be addressed by field studies involving methods such as beach seining or environmental DNA. The EIR does not consider mitigation necessary for this impact because the impact was analyzed as summarized above and was not found to be significant.
568-39	Delta Smelt Experimental Releases. The DEIR does not incorporate experimental release of Delta smelt (CDFW [California Department of Fish and Wildlife] 2021) within any analysis or as part of the baseline condition. The current approach adopted by the DEIR does not recognize the potential for experimental releases to affect Delta smelt distribution and abundance within the Delta [Sacramento-San Joaquin Delta]. As such, analyses that rely on recent historic presence and draw conclusions based on such data under-represent the effect experimental releases may have and by extension, under-represent the impacts of the Proposed Project to the species. For example, the DEIR identifies a declining population trend of Delta smelt and therefore concludes that few smelt would be exposed to potential near-	The comment suggests that the analysis of delta smelt potential effects does not account for experimental release of delta smelt. Impact AQUA-6 in Chapter 12, Fish and Aquatic Resources, does acknowledge such releases specifically in relation to the example issue raised in the comment, i.e., potential near-field effects of the north Delta diversions (see discussion of north Delta exports in the section titled Impact AQUA-6 in Chapter 12), and notes that although population abundance could increase, the proportion of the delta smelt population exposed to the north Delta intakes would be low.

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	field effects of the NDD [North Delta Diversions] intakes. CDFW disagrees with this conclusion as experimental releases of Delta smelt could increase the number of individuals within the Delta and therefore increase the exposure of the NDD effects to the species. Because of this, the EIR should include assumptions about Delta smelt experimental release and its effect on Delta smelt abundance when evaluating the potential significance of the Project on the species and developing minimization or mitigation measures.	
568-40	Longfin Smelt Analysis provided in Chapter 12 of the DEIR shows substantial population level impacts to longfin smelt during all water year types due to the substantial reduction in spring outflows resulting from the Proposed Project (Table 12-144). Additionally, the DEIR 21 analyses show a greater than 50% chance that longfin smelt abundance will decrease from Existing Conditions in any given year (Table 12-145). The DEIR provides a modest amount of habitat restoration as mitigation for such impacts to longfin smelt and concludes that such impacts are less than significant for the species. CDFW [California Department of Fish and Wildlife] is concerned that the Proposed Project will impact the population trajectory, and that such impacts warrant additional mitigation. CDFW strongly recommends that the EIR include feasible alternative operational approaches to minimize this impact, and mitigation measures to ensure any impact to longfin smelt caused by decreased spring outflow is less than significant. Specifically, measures should accommodate monthly forecasted storage and provide outflow objectives during the months when longfin smelt abundance has been shown to be linked with outflow, including March, April, and May.	Regarding the recommendation for alternative operational approaches, please see the discussion of operational criteria refinements provided in Common Response 3, Alternatives Development and Description. The EIR does not consider additional mitigation necessary for this impact because the impact was analyzed as described in the EIR and mitigation was developed that reduces the impact to less than significant consistent with prior mitigation approaches.

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568-41	Compensatory Mitigation. The Compensatory Mitigation Plan (CMP) in Appendix 3F proposes channel margin habitat be constructed on Bouldin Island (Table 3F-4) to offset construction related impacts to aquatic resources, including winter-run and spring-run Chinook salmon. Although this restoration would be beneficial to the ecosystem, it would not provide the most biologically meaningful benefit to the CESA [California Endangered Species Act]- listed species that are impacted by the Proposed Project. CDFW [California Department of Fish and Wildlife] requests the EIR prioritize areas that are within the main migratory pathway of Sacramento Basin CESA-listed species that would be impacted by the construction of the NDD [North Delta Diversions], to effectively ensure less-than-significant impacts to those species.	In response to the comment regarding channel margin habitat, please see Common Response 11, Terrestrial Biological Resources, for a description of the revisions made to the figure titled Bouldin Island Conceptual Design in Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources. The table titled Summary of Special-Status Species Habitat That Will Be Created or Enhanced with Full Implementation of the Initial Mitigation Sites (acres) has also been revised as requested to remove proposed channel margin habitat from Bouldin Island. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. Chapter 12, Fish and Aquatic Resources, describes that the project will include both CMP-24 and CMP-26 (Attachment 3F.1, Compensatory Mitigation Design Guidelines, Table 3F.1-3). As explained in Attachment 3F.1 for CMP-24, sites for channel margin restoration will be subject to approval by NMFS and CDFW. In addition, as necessary and reflecting permitting requirements, a collaborative technical team including DWR and fishery agency representatives will be formed to identify the most biologically appropriate and cost-effective restoration sites, design the restoration plan, set performance criteria, and develop the restoration unit management plan for the sites for DWR's selection.
568-42	Compensatory Mitigation. The CMP also proposes a conceptual plan for tidal restoration to offset hydrodynamic impacts due to NDD [North Delta Diversions], such as reverse flows at Georgiana Slough and reduced bench inundated habitat. However, the DEIR does not include any specifics regarding the siting of the restoration, or the acreage needed to offset impacts to salmonids. CDFW [California Department of Fish and Wildlife] and other readers therefore lack important information to understand and consider the efficacy of tidal restoration in mitigating the	Please see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for a discussion of the level of specificity and detail available for assessment in the EIR and required by CEQA. Please see Common Response 11, Terrestrial Biological Resources and Compensatory Mitigation Plan, regarding separate CEQA analysis that will be conducted, if needed, once restoration locations have been determined. Please refer to Common Response 11, and EIR Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, section titled Performance Standards and Monitoring, regarding the need for monitoring. The CMP commits to the development of site-specific maintenance and management plans and monitoring and adaptive

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	hydrodynamic impacts of the NDD as well as the approach to evaluating the conceptual idea after the Proposed Project is constructed. The CMP's proposal also does not evaluate how tidal restoration proposed under the Proposed Project will interact with ongoing EcoRestore projects located in the Delta [Sacramento-San Joaquin Delta] and existing North Bay Aqueduct operations. CDFW recommends the EIR contain a clear CMP that includes both mitigation for construction related impacts as well as operation related impacts, with sufficient detail and performance standards to avoid deferred mitigation.	management plans and includes criteria for the contents of those plans. Although the mitigation approaches are described in sufficient detail to meet the requirements of CEQA for this EIR, it is anticipated that additional design and management planning, including more detailed performance standards, monitoring methods, and adaptive management actions, would be refined through the permitting process and prior to project initiation. As described in Appendix 3F, coordination is ongoing with the regulatory agencies regarding tidal habitat mitigation requirements, which will include detailed site-specific performance standards. The extent of tidal habitat proposed for Mitigation Measure CMP, specifically CMP-25, has been added to the Final EIR in Appendix 3F based on hydrodynamic analysis conducted by California Department of Water Resources (2023b). None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. The potentially significant impacts associated with the CMP are evaluated throughout the resource chapters. These potential mitigation measure impacts, combined with past, present, and reasonably foreseeable future projects and programs, are also evaluated in the cumulative section of each resource chapter.
568-43	Compensatory Mitigation. Appendix 13C, Table 13C-9 identifies permanent, long-term temporary, and temporary habitat loss for terrestrial species under the Proposed Project. Chapter 12, Tables 12-11 and 12-12 identify permanent and temporary impacts to aquatic species under the Proposed Project. However, the CMP in Appendix 3F does not mirror the impacts associated with Chapter 12 and Appendix 13C and does not fully describe which species and their habitats will receive mitigation. CDFW	Regarding the comment about matching impacts and compensatory mitigation acreages, the CMP (Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, table titled Special-Status Fish and Wildlife Species and Habitats) has been updated to clarify and match species with their habitat types that would be created or preserved. Please see Common Response 11, Terrestrial Biological Resources and Compensatory Mitigation Plan, regarding timing of CMP implementation. The CMP has been updated to include a commitment that compensatory mitigation, either protection, creation, or enhancement, will stay ahead of

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	[California Department of Fish and Wildlife] requests that the EIR's CMP clearly identify which habitats mitigate for each species, how much acreage and at what mitigation ratio species-specific mitigation will occur within initial mitigation sites and mitigation banking, and under what timeline mitigation will occur. CDFW recommends the EIR commit to a 10% stay-ahead requirement for habitat mitigation, consistent with historical agreements and based on previous large-scale water infrastructure projects. CDFW also requests the EIR commit to mitigating any loss of species habitat during implementation of the CMP itself.	the cumulative, permanent suitable habitat loss by 10% and that additional mitigation will be implemented if the commitment cannot be met. Regarding the comment about habitat impacts from CMP implementation, the potentially significant impacts associated with the CMP are evaluated throughout the resource chapters in the EIR. These impacts, combined with potential cumulative projects that DWR or other agencies may pursue in the future, are also evaluated in the cumulative section of each resource chapter. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-44	Compensatory Mitigation. The CMP includes a discussion of performance standards that will provide the basis for DWR's [Department of Water Resources] annual monitoring and evaluation of each mitigation site. The proposed performance standards rely on floristic, physical, and hydrologic components of the habitat without consideration of special-status species occupancy. CDFW [California Department of Fish and Wildlife] requests the EIR consider occupancy as a performance standard and include occupancy monitoring to determine habitat use and subsequently to substantiate the effectiveness of compensatory mitigation and assumed reduction of potentially significant impacts to targeted species. For both aquatic and terrestrial mitigation, CDFW requests that mitigation lands be conserved and managed in perpetuity under a CDFW-approved conservation easement and managed	Regarding the consideration of occupancy monitoring as a performance standard, please refer to Common Response 11, Terrestrial Biological Resources and Compensatory Mitigation Plan, for a discussion of the adequacy of monitoring and performance standards. Please refer to Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, section titled Financial Assurances, regarding funding assurances. DWR would ensure long-term funding and designation of a responsible entity for long-term management and would ensure long-term legal protection of these mitigation sites with the conservation easements anticipated to be held by CDFW.

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568-45	in perpetuity through secure management funding with an approved land manager. Compensatory Mitigation. I-5 Ponds. Appendix 3F states that the I-5 Ponds are not hydraulically connected to each other. Lands may not be considered suitable habitat sufficient for mitigation if targeted species are not able to access the habitat intended for their use. CDFW [California Department of Fish and Wildlife] recommends the CMP [Compensatory Mitigation Plan] commit to demonstrating occupancy of habitats created. Specifically, to allow for giant garter snake dispersal and occupancy, CDFW recommends the EIR commit to hydraulically connecting the I-5 Ponds to existing giant garter snake occupied habitat as well as providing continuous connectivity within the I-5 Ponds. For all proposed compensatory mitigation, CDFW recommends that the CMP provide additional discussion of feasibility of potential mitigation actions, including considerations to avoid conflict or competition with already-conserved lands, sites targeted to meet existing compliance obligations, and grant-funded activities with funding restrictions.	Please see Common Response 11, Terrestrial Biological Resources and Compensatory Mitigation Plan, for a discussion of habitat connectivity. Connectivity between Ponds 6, 7, and 8 and the rest of the White Slough complex to the south (Ponds 9 through 13) via Hog Slough, White Slough, and connected agricultural ditches is assumed sufficient to support occupancy after creation and enhancement actions. This is based on the assumption that 5 kilometers (km) is a reasonable movement/dispersal distance for giant garter snakes. The 5 km movement distance is based on a literature review and communication with Brian Halstead at the U.S. Geological Survey (Halstead pers. comm.). Please refer to Common Response 11, in the section describing performance standards and monitoring, and Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, in the section titled Performance Standards, regarding the consideration of occupancy as a monitoring metric. The objective of the mitigation sites is to establish suitable habitat within a reasonable dispersal or movement distance for targeted species to access the mitigation site once constructed. The selection and design of sites considers species distribution and habitat requirements, as provided in Appendix 3F, Attachment 3F.1, Compensatory Mitigation Design Parameters. Regarding the commenter's request that potential mitigation actions avoid conflict with already-conserved lands, the I-5 ponds (Ponds 6, 7 and 8) are owned by DWR and considered publicly owned land. These are part of the White Slough Wildlife Area, State Conservation Area designation. This designation is a land management description that would be subordinate to the long-term mitigation protection. DWR and CDFW have had an interagency agreement for CDFW to manage the I-5 ponds while DWR retains ownership. This agreement states that DWR can use the

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		management area for the purposes of mitigation required for future projects, including the recordation of associated conservation easements. Therefore, there are no future uses, including recorded easements, that pose an encumbrance for the I-5 ponds to be considered for compensatory mitigation.
568-46	Additional Comments Consistent with CDFW's [California Department of Fish and Wildlife] trustee role, the attached comments [Attachment 1] in Appendix A address all fish and wildlife resource areas and includes additional comments to those provided in the above letter. While the attached comments are extensive, CDFW understands DWR [Department of Water Resources] is seeking all possible input and CDFW strove to be thorough in the review of the DEIR in order to be of the greatest assistance.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
568-47	RECOMMENDATIONS CDFW [California Department of Fish and Wildlife] appreciates DWR's [Department of Water Resources] continued effort to address the impacts of the Proposed Project on the State's biological resources. CDFW offers the comments and recommendations in the letter and attached Appendix A to assist DWR 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 DWR in identifying a reasonable range of alternatives that would avoid or minimize adverse impacts and to help ensure the EIR's adequacy as an informational document.	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
568-48	Based on the information provided, CDFW [California Department of Fish and Wildlife] currently does not see sufficient substantiation for the DEIR's determination of the following Project impacts to be less than significant with	This comment is a general summary of issues subsequently dealt with in more detailed comments. Please see responses to those comments herein. All impact determinations in Chapter 12, Fish and Aquatic Resources, are supported by the best available quantitative analyses with supporting

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	mitigation: AQUA-1: Effects of Construction of Water Conveyance Facilities on Fish and Aquatic Species, AQUA-2: Effects of Operations and Maintenance of Water Conveyance Facilities on Sacramento River Winter-Run Chinook Salmon, AQUA-3: Effects of Operations and Maintenance of Water Conveyance Facilities on Central Valley spring-run Chinook salmon, AQUA-6: Effects of Operations and Maintenance of Water Conveyance Facilities on delta smelt, and AQUA-7: Effects of Operations and Maintenance of Water Conveyance Facilities on longfin smelt. CDFW recommends the EIR is updated to provide quantitative analyses, discussed in these comments, to inform significance determinations for the Proposed Project (before mitigation), to inform development of alternatives and other means to avoid impacts, and the scope of mitigation actions. Quantitative analyses with accompanying documentation of the analysis methodology, assumptions, and decision processes are needed for CDFW and others to understand the basis for analytical conclusions reported, and to foster open and transparent discussion pertaining to the inherent uncertainty within the results and determinations presented. CDFW looks forward to continuing to work with DWR [Department of Water Resources] to refine the Proposed Project and associated mitigation measures.	documentation, or qualitative discussions in the rare cases appropriate or robust quantitative methods were not available. Specifically, regarding AQUA-1, please refer to responses to comments 568-137 and 568-152 through 568-160. In addition, responses to comments 568-161 through 568-165 and 568-166 and 167 address questions regarding the mitigation measures and Compensatory Mitigation Plan, respectively, proposed to reduce potential construction impacts on fish and aquatic species (AQUA-1) to less than significant. Effects of operations and maintenance of water conveyance facilities on Sacramento River Winter-Run Chinook Salmon (AQUA-2) are discussed in detail in responses to comments 568-168 through 568-191, 568-235, 568-245 and 568-248 through 568-255. In addition, responses to comments 568-34 and 568-35 provide discussions of modeling aspects related to AQUA-2. Impact AQUA-3 is discussed in responses to comments 568-192 through 568-194, and 568-256. Impact AQUA-6 is discussed in responses to comments 568-38, 568-39, 568-140 through 568-142, 568-170 and 568-195 through 568-202. Please refer to responses to comments 568-135, 568-203 and 568-204 regarding impact AQUA-7.
568-49	ENVIRONMENTAL DATA CEQA [California Environmental Quality Act] 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	With regard to the request that special-status terrestrial biological resource occurrences detected during project surveys be reported to the CNDDDB, please see Environmental Commitment EC-14, which contains a commitment to submit CNDDDB records for special-status species occurrences to CDFW no more than 90 days after completing the last field visit to the project site.

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	and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDDB). The CNDDDB field survey form can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDDB_FieldSurveyForm.pdf. The completed form can be mailed electronically to CNDDDB at the following email address: CNDDDB@wildlife.ca.gov. The types of information reported to CNDDDB can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp.	
568-50	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 [California Department of Fish and Wildlife]. 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 EIR discloses impacts on fish and wildlife in Chapters 12, Fish and Aquatic Resources, and 13, Terrestrial Biological Resources. Impacts in these two chapters are identified as being less than significant or less than significant with mitigation measures incorporated. DWR is aware of CDFW filing fees and will comply as necessary and required.
568-51	CONCLUSION Pursuant to Public Resources Code §21092 and §21092.2, CDFW [California Department of Fish and Wildlife] 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 DEIR 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	As described in Chapter 3, Description of Proposed Project and Alternatives, in the section titled Proposed Project and Alternatives Overview, identification of the proposed project for the Draft EIR does not indicate that DWR has decided to move forward with the Delta Conveyance Project or that, if DWR does determine to move forward, the Bethany Reservoir alignment will be the project that DWR approves. DWR will not make a decision on the project until after addressing public comments on the Draft EIR, certifying the Final EIR, making all necessary findings and taking any other actions required to comply with CEQA. DWR is committed to working with all interested parties. All commenters on the Draft EIR have been added to the project email list and will be notified regarding future project updates.

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	further coordination should be directed to [Name], Acting Environmental Program Manager, at [email address].	
568-52	ec: State Clearinghouse, state.clearinghouse@opr.ca.gov	This information describes the structure or organization of the comment letter, the background of the organization or individual commenter, clarification on the submittal of the comment letter, or general introductory text. It is not a comment on the contents of the Draft EIR. DWR has reviewed all comments and will consider all comments in its decision-making process.
568-53	[ATT 1:] Chapter 3- 3.4.1.2 Sedimentation Basins and Drying Lagoons; Page 3-24. The DEIR states that sediment will be removed from NDD [North Delta Diversions] water prior to conveyance through the proposed tunnel. Settling ponds will be dredged once a year but the Proposed Project does not plan to return that sediment back to the system. Instead, the DEIR states that dried sediment would be removed by truck for disposal at a permitted disposal site or used for beneficial use off-site. Many fish species, including Delta and longfin smelt, are reliant on sediment transport instream for predator avoidance and for larvae to locate food items. Maintaining consistent levels of sediment in river based on Existing Conditions will also reduce erosive energy downstream of the NDD. CDFW Recommendation: CDFW recommends the Proposed Project return the sediment diverted with Sacramento River water back to the river after dredging settling ponds at the intakes. CDFW looks forward to working out the details pertaining to sediment return with DWR [Department of Water Resources] to avoid any significant biological or other environmental impacts. For example, smaller sediment returns on a more frequent basis may be the best means to avoid	As the comment notes, dried sediment would be removed by truck for disposal at a permitted disposal site or used for beneficial use off-site. The EIR considers potential effects of sediment removal (see in particular Impact AQUA-6) and concludes that the small amount of sediment entrainment that could occur would not result in significant impacts to delta smelt and no additional mitigation measures to reduce this impact are required. Nevertheless, the EIR includes Environmental Commitment EC-15 to confirm the less than significant impact determination once operations commence and address any unanticipated effects through an adaptive management approach (see Appendix 3B, Environmental Commitments and Best Management Practices). Reintroduction of sediment from the settling ponds as recommended in the comment is a potential outcome of implementation of Environmental Commitment EC-15, if necessary. This would happen through a process involving DWR, CDFW, and the other fish agencies as described in Environmental Commitment EC-15.

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568-54	impacting sediment transport and increasing erosion forces and will aid in providing habitat suitable for fish that rely on turbidity for predator avoidance and feeding. [ATT 1:] Chapter 3- 3.4.1.2 Sedimentation Basins and Drying Lagoons, page 3-24. The DEIR states that the fill and drain/dry sequence for sediment basins and drying lagoons would take about 7 to 8 days, which would approximately match the dredged material filling rate so continuous operation would be possible (p. 3-24). However, the removal of sediment, although continuous, is not considered an impact of the Proposed Project. CDFW [California Department of Fish and Wildlife] recommends that the process of removing and disposing of dried sediment is evaluated as a potential biological resources impact in the EIR, with discussion of any minimization measures and/or mitigation added as appropriate.	The Final EIR Chapter 3, Description of the Proposed Project and Alternatives, the section titled Sedimentation Basins and Drying Lagoons, has been edited to clarify that the drying lagoon would be filled up to three times each year however, only about once per year for median project conditions. The entire fill and drain/dry sequence occurring over 7 to 8 days each time. Sediment dried and removed from the intake sedimentation basins during maintenance would be disposed of at appropriately permitted waste disposal facilities. Chapter 12, Fish and Aquatic Resources, in the analysis of impacts to Delta smelt, discusses the changes in sediment entrainment resulting from operation of the north Delta intakes. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. Chapter 13, Terrestrial Biological Resources, discusses impacts of the alternatives on general terrestrial biological resources. Mitigation Measure BIO-2b would be required to avoid and minimize the potential for periodic, temporary discharges of fill material into aquatic resources during maintenance activities. Measures described in Appendix 3B, Environmental Commitments and Best Management Practices, such as Environmental Commitments EC-4a and EC-4b would further protect biological resources. The Delta Conveyance Project Engineering Project Report technical memorandum titled Intakes River Sediment Analysis-North Delta Intakes (Delta Conveyance Design and Construction Authority 2022e), section titled Sediment Capture and Disposal, reports the modeled quantities of sediment expected to be diverted and captured at each intake.

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568-55	[ATT 1:] Chapter 3- 3.4.6 Southern Complex West of Byron Highway, pages 3-42. The DEIR states that gate operations at CCF and the new Southern Forebay (as proposed under all alternatives except the Proposed Project) will be operated in one of two modes- single or dual. It is unclear what would control operations of the gates and under which conditions one mode would be selected over the other. CDFW [California Department of Fish and Wildlife] requests that additional information on gate operation at the proposed Southern Forebay be added to the EIR for clarity, including any factors (e.g., biological, hydrodynamic, etc.) that impact gate operations.	The section titled Southern Forebay in Chapter 3, Description of the Proposed Project and Alternatives, provides a general overview of the modes for operating the proposed new forebay with or without existing south Delta facilities. The gate operations would enable deliveries to Banks Pumping Plant from the new Southern Forebay, Clifton Court Forebay, or a combination of the two. These gate operations would not guide operations of the Delta Conveyance Project but are designed to accommodate operations as established in the operational criteria. Operational modes are intended to improve Delta SWP operational flexibility to respond to changing hydrologic and environmental conditions and would be subject to north Delta Diversions operations, operational criteria and applicable Delta regulatory requirements. As described in Chapter 3, south Delta diversions would be prioritized over north Delta diversions which would be used to divert water during excess flow conditions or when salinity conditions are controlling in the south Delta. These operations are presented at a level of detail intended to provide a reasonable understanding of facility operations and to provide the detail needed for impact analyses. It is unclear what additional information the commenter is requesting that would inform disclosure of project impacts, beyond what is currently provided in the EIR.
568-56	[ATT 1:] Chapter 3- 3.4.10 Electrical Facilities, pages 3-48. The DEIR states power for construction and operation of the conveyance facilities would use existing power lines to the extent possible, but the location or required load of some facilities would require either new aboveground power towers with lines or, depending on site-specific parameters, underground conduit to serve those specific areas (p. 3-48). Powerlines can create inadvertent risk to a multitude of avian species, and collisions with powerlines often lead to injuries or mortality.	Chapter 13, Terrestrial Biological Resources, includes an analysis of the potential impacts of aboveground power lines and SCADA lines on avian species (see discussion of potential impacts under “Operations” in Impact BIO-31 through Impact BIO-44). Please also see Mitigation Measure BIO-2c, which includes the commitment that DWR will work with the electric utilities responsible for project lines to ensure incorporation of bird and raptor-safe design consistent with Avian Power Line Interaction Committee guidelines or more current guidance, if it becomes available.

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	CDFW [California Department of Fish and Wildlife] recommends the EIR evaluate where aboveground powerlines may be built as part of the Proposed Project and analyze related risks to species and commit to using the guidelines set forth by the Avian Power Line Interaction Committee (APLIC 2006 and 2012; APLIC and USFWS 2005) to minimize avian related injuries and mortalities due to contact with the newly constructed powerlines.	
568-57	[ATT 1:] Chapter 3- 3.7 Alternative 2a-Central Alignment, 3.11 Alternative 4a-Eastern Alignment, pages 3-80; 3-104. Section 3.2 of the DEIR describes the CEQA [California Environmental Quality Act] requirements for Project Alternatives 2a and 4a. However, it is unclear how the construction of a third intake on the Sacramento River that increases diversion capacity to 7,500 cfs would avoid or substantially lessen potentially significant Proposed Project impacts. CDFW [California Department of Fish and Wildlife] recommends the EIR include an analysis and description of how the new intake proposed for both the central and eastern alignment (Alternatives 2a and 4a) will avoid or substantially lessen potentially significant Proposed Project impacts and/or include minimization and mitigation measures as necessary.	Alternatives 2a and 4a with a diversion capacity of 7,500 cfs were evaluated should the U.S. Bureau of Reclamation choose to participate in the Delta Conveyance Project to convey water for the CVP. The third intake is not proposed to reduce impacts; the EIR evaluates the potential environmental impacts of larger conveyance facilities that would be required to convey the additional up to 1,500 cfs that would have been allocated to the CVP. As explained in Appendix 3A, Identification of Water Conveyance Alternatives, Alternatives 2a and 4a were also included for further consideration in the EIR because they met the basic purpose and project objectives and they would have less significant impacts than the other alternatives that were screened from further review in the second phase of the screening process. Only Alternative 5 was judged to have less significant impacts than the NOP proposed project. DWR included alternatives in different conveyance facility alignments (central, eastern and Bethany) to thoroughly consider the potential for construction and operational impacts on Delta land uses and communities.
568-58	[ATT 1:] Chapter 3- 3.14 Alternative 5-Bethany Reservoir Alignment, 6,000 cfs, Intakes B and C (Proposed Project), page 3-116. The DEIR includes mention of construction and Geotech through the Bethany Conservation Easement. However, the	Chapter 14, Land Use, has been updated to acknowledge that the project overlaps with several conservation easements in the study area. Permanent and temporary impacts from project alternatives on the natural communities and species habitat within the study area, including within conservation easements, are quantified and analyzed in Chapter 13, Terrestrial Biological Resources. Mitigation for natural community and

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	DEIR does not discuss, or analyze, the potential conflict (under all alternatives) resulting from the Project alignment across conserved lands, including the Cosumnes River Preserve, Woodbridge Ecological Preserve, and Bethany Reservoir Conservation Easement. The DEIR does not evaluate an alternative route for the Bethany Reservoir Aqueduct siting in a manner that could reduce impacts to the Bethany Reservoir Conservation Easement by following existing roadways and other highly disturbed areas and/or one that will avoid impacts to conserved lands similar to the alignments identified in the Delta Conveyance Project Final Draft Engineering Project Report (Delta Conveyance Design and Construction Authority 2022; Figure 10). CDFW [California Department of Fish and Wildlife] requests that the EIR include a comprehensive evaluation of conservation lands impacted by the Proposed Project (both temporary and permanent impacts) and alternatives. The evaluation should include identification of the number of acres to be impacted by each alignment including access areas, the biological quality and value of those acres, and the property owner and/or grantee if possible. Additionally, a discussion of the Project's potential to obtain in-kind mitigation should be included with appropriate lands identified.	species habitat impacts, including performance standards and mitigation land protection assurances, are described in Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources. These analyses meet the needs of CEQA. However, coordination with CDFW will continue to occur through other regulatory processes. Please also see the technical memoranda listed below, which describe project alignment and tunnel shaft location options, and screening criteria including proximity to conservation areas. In locations adjacent to conservation areas, measures were included to protect biological resources. These analyses and the results are presented in the following technical memoranda in the Efforts to Minimize Delta Community Effects technical memoranda Delta Conveyance Design and Construction Authority 2022a, 2022b), Shaft Siting Study technical memorandum for the Central/Eastern Options (Delta Conveyance Design and Construction Authority 2022h), and Facilities Siting Study for the Bethany Reservoir Alternative technical memorandum (Delta Conveyance Design and Construction Authority 2022c). Please also see Common Response 3, Alternatives Development and Description, regarding the alternatives evaluated and the reasonable range of feasible alternatives evaluated in the EIR.
568-59	[ATT 1:] Chapter 3- 3.14.1.4 Bethany Reservoir Discharge Structure, page 3-125. The proposed Bethany Reservoir discharge structure would be located on a narrow strip of land between the Bethany Conservation Easement and Bethany Reservoir. The DEIR currently proposes a 10-foot-wide buffer to separate the disturbance area from the conservation easement.	Placement of the Bethany Reservoir Discharge Structure in a manner to protect the Bethany Conservation Easement is described in the Conceptual Development of Aqueduct and Discharge Structure Technical Memo of the Bethany Reservoir Alternative Engineering Project Report. The 10-foot-wide buffer is between the top of a cut slope and the easement. It would include erosion controls such as plantings with native species and should not require substantial maintenance. If maintenance is ever required on the slope, the work would be conducted from the top of the slope and the

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	CDFW [California Department of Fish and Wildlife] requests the EIR include a larger buffer between the disturbance area and the conservation easement to limit impacts on the conservation easement, including impacts associated with edge effects.	10-foot buffer would be of adequate width. Although impacts are not anticipated in this area, in addition to the 10-foot buffer, the implementation of environmental commitments (Appendix 3B, Environmental Commitments and Best Management Practices) and the mitigation measures included in Chapter 13, Terrestrial Biological Resources, including Mitigation Measure BIO-2b, would ensure that impacts on special-status species would be less than significant. Please also see response to comment 568-58 regarding the evaluation of impacts on conservation lands, continued consultation with CDFW through other regulatory processes, and the range of feasible alternatives evaluated in the EIR.
568-60	[ATT 1:] Chapter 3- 3.15.2.1 Investigations at Facility Locations, page 3-136. The DEIR states that soil borings, overwater soil borings, and CPTs would be conducted within the construction boundaries; however, it is unclear what these boundaries are within the Project area. CDFW [California Department of Fish and Wildlife] requests that the EIR include a clear description of where the construction boundaries for soil borings, over water borings and cone penetration tests lay so that potential impacts can be assessed accordingly.	The Engineering Project Report technical memoranda titled Potential Future Field Investigations—Central and Eastern Corridor Options and Potential Future Field Investigations—Bethany Reservoir Alternative (Delta Conveyance Design and Construction Authority 2022f, 2022g) provide details of future preconstruction and construction period geotechnical, hydrogeological, and agronomic testing, including figures showing test locations. Please also refer to EIR mapbooks for Central, Eastern, and Bethany Reservoir alignment alternatives. Mapbooks show construction (temporary surface impact) and permanent surface and subsurface impact boundaries for project facilities and proposed work. Maps also delineate Geotechnical Investigation Zones that are in addition to investigations within project feature construction boundaries. The Engineering Project Reports include engineering drawings that display construction boundaries. Please refer to Chapter 3, Description of the Proposed Project and Alternatives, section titled Field Investigations, regarding prior analysis of impacts of data collection efforts for the Delta Conveyance Project. DWR adopted an Initial Study/Mitigated Negative Declaration (IS/MND) for Soil

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		Investigations for Data Collection in the Delta Project and issued a Notice of Determination and issued and approved subsequent addendums for minor project changes (California Department of Water Resources 2020a, California Department of Water Resources 2020b). Chapter 3 describes that future investigations are required for the project alternatives and, if DWR approves a project alternative, the EIR acknowledges that DWR would comply with the necessary state environmental review requirements including subsequent CEQA review, if necessary, for future investigations.
568-61	[ATT 1:] Chapter 3- 3.15.2.2 Geotechnical Pilot Studies for Settlement, page 3-137. For the Geotechnical Pilot Study, the DEIR states that test fill sites will either be placed within construction boundaries of the Proposed Project or next to a shaft pad site. It is not clear how large these fill sites will be, particularly if they are not located within the shaft pad site. CDFW [California Department of Fish and Wildlife] requests that a size estimation of test fill, at each study location, be added to the EIR so that an evaluation of potential Project impacts can occur.	Please refer to response to comment 568-60 regarding information on field investigations and impact evaluation. Please refer to the Delta Conveyance Project Engineering Project Report technical memoranda titled Potential Future Field Investigations—Central and Eastern Corridor Options and the Potential Future Field Investigations—Bethany Reservoir Alternative (Delta Conveyance Design and Construction Authority 2022f, 2022g). Both technical memoranda include a section titled Geotechnical Pilot Studies for Settlement, which describes the test fills to be placed within or adjacent to the shaft pad sites (within the construction boundaries of the project). The technical memoranda describe that the commercially available fill material will be purchased and hauled to the test sites to form a test fill approximately 10-feet high with a base footprint of approximately 1000 square feet. Implementation of the test fill evaluations were analyzed in the individual environmental resource chapters of the EIR.
568-62	[ATT 1:] Chapter 3- 3.15.2.5 Vibratory Testing of Dynamic Properties, page 3-138. The DEIR states that vibratory testing of dynamic properties of peat would be conducted in the Delta [Sacramento-San Joaquin Delta] for validation of peat soil response during earthquakes. To better understand the impacts the vibratory testing will have on fish and wildlife (e.g., nesting birds,	The EPR Potential Future Field Investigations technical memoranda (Delta Conveyance Design and Construction Authority 2022f, 2022g) provide some additional information on the potential locations for vibratory testing of peat soils in several locations including on Bouldin Island. Additional details requested regarding this potential field investigation are not available at the current level of project planning and would depend on the alternative selected for implementation following the environmental review process. Potentially significant impacts of field investigations,

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	burrowing animals) a more detailed description of when tests will occur, and the length and frequency of each test is needed. The EIR should include a more detailed description of when vibratory testing will take place, how frequently testing is need, and how long each test will be.	including vibratory testing, on fish and wildlife species would be minimized to less-than-significant impacts with the implementation of applicable environmental commitments in Appendix 3B, Environmental Commitments and Best Management Practices, and the mitigation measures presented in Chapter 12, Fish and Aquatic Resources and Chapter 13, Terrestrial Biological Resources. As lead agency DWR would determine whether additional details about these investigations could potentially result in significant impacts, or in new impacts that would need to be disclosed in a subsequent CEQA document.
568-63	[ATT 1:] Chapter 3- 3.16.1.1 Approaching and Sweeping Velocity Requirements 3.17.2.1 Real-Time Decision-Making Framework, pages 3-142; 3-158. The DEIR includes sweeping and approach velocities consistent with criteria for both Delta smelt and juvenile salmonids. However, it is unclear based on the DEIR if the approach and sweeping velocities will be recorded in real-time and what DWR's [Department of Water Resources] decision making process will be to shift criteria or relax criteria (as mentioned on page 3-158). CDFW [California Department of Fish and Wildlife] requests the EIR include a commitment to ensuring changes to the criteria would maintain or improve upon the existing level of protection. CDFW also requests that the EIR follow updated guidance from NMFS (2022) regarding fish screen criteria with assurances that criteria will be maintained across the length of the screens and that the design sweeping velocities will never be less than the design approach velocity.	The EIR accurately describes approach and sweeping velocity compliance and requirements with an appropriate level of detail. Both approach and sweeping velocity will be informed by real-time data. Note that the referenced text in the EIR has been revised. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. As stated in Chapter 3, Description of the Proposed Project and Alternatives, operations of the existing facilities will be governed by all the applicable existing and relevant future regulatory requirements, as will operations of the proposed north Delta intakes. Relaxation of the approach and sweeping velocity criteria when risk to covered species is low/absent will need regulatory agency approval. As clearly described in Chapter 3, any future refinement to the operational criteria and real-time operational responses of the north Delta intakes would be with the intent of addressing future uncertainties including further minimization of effects to listed species, if applicable, and would be made through the Operations Adaptive Management and Monitoring Plan (OAMMP) and carefully validated by sound scientific studies (not limited to monitoring for fish presence).

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		Also, please see the discussion of consideration of operational criteria refinements provided in Common Response 3, Alternatives Development and Description.
568-64	[ATT 1:] Chapter 3- 3.16.1.2 Bypass Flow Requirements, page 3-142. It is unclear based on the DEIR if the proposed bypass flow requirements would be subject to reevaluation to consider sea level rise, and climate change impacts during the pre- and post-construction phase of the Project. In addition, it is unclear whether bypass flow re-evaluations would occur at any point during the operation of the Project. CDFW [California Department of Fish and Wildlife] recommends adding milestone language or criteria in the EIR that clearly denotes when bypass flow requirements are to be re-evaluated. Furthermore, a commitment should be included to ensure that changes to the criteria would only be made to maintain or improve upon the existing level of protection.	The comment provides several considerations for adaptive management. Such factors (e.g., climate change) will be considered in the Operations Adaptive Management and Monitoring Plan outlined in Chapter 3, Description of the Proposed Project and Alternatives. Any changes made to criteria during project operations would reflect the need to maintain or increase the level of protection, depending on the outcome of the adaptive management process; this is not taken to mean that restrictions on diversions would only be greater than proposed, as the level of protection is not necessarily directly inversely related to the level of restriction. As described in Common Response 3, Alternatives Development and Description, any potential refinements to operations through the Operations Adaptive Management and Monitoring Plan (OAMMP) would be in coordination with the fisheries agencies, including CDFW. The refinements would not be implemented unless the agencies agree that the operational changes maintain the level of protection permitted or increase the level of protection, if effects are greater than expected during actual operations.
568-65	[ATT 1:] Chapter 3- 3.16.1.3 Pulse Protection, page 3-143. It is unclear based on the DEIR if pulse protections would occur in dry or critical years if Sacramento River flows are too low to be met to trigger an action. Furthermore, it is unclear if the pulse protections will be coordinated with pulse protection associated with the proposed Sites Reservoir Project. CDFW [California Department of Fish and Wildlife] requests that the EIR contain an analysis on the frequency of when both DCP [Delta Conveyance Project] and Sites Reservoir proposed pulse protections would occur across all water year types and	The effects of proposed operations were assessed in the impact analysis included in Chapter 12, Fish and Aquatic Resources, which found that operational criteria including pulse protection (in association with proposed mitigation, if necessary, based on quantitative analysis and consideration of species status) would result in less-than-significant impacts on salmonids. Note that if various hydrological triggers are met, pulse protections can occur in dry and critical water year types. In addition, under lower flow conditions, north Delta diversions would generally be more restricted, consistent with operational criteria to be more protective during these periods, regardless of whether pulse protection was triggered. The comment asks if pulse protections would occur when flow criteria cannot be met, but if bypass flow criteria are not met, then the north Delta

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	include a discussion for when and how often pulse protections would be initiated in water years when flow criteria cannot be met. CDFW also recommends that the EIR include a comprehensive quantitative analysis of cumulative impacts including the Sites Reservoir Project to analyze whether the biological rationale for each project's pulse protection is realized.	diversion would not be operating (and diversions would not need to be reduced with a pulse protection event). Please also see the discussion of refinement of operational criteria (e.g., pulse protection) through agency coordination in Common Response 3, Alternatives Development and Description. In addition, as described in Chapter 3, an Operations Adaptive Management and Monitoring Plan would be used to monitor and consider the design and operation of the new north Delta intakes and determine whether they result in unanticipated effects that may warrant refinements in design, management, and/or operation. Potential changes in operations could consider modified operational criteria, including pulse protection, based on the results of studies that DWR would conduct such as evaluating the relationship between the hydrologic conditions and the behavior of migrating juvenile salmonids in the Sacramento River reach between Wilkins Slough/Knights Landing and the north Delta intakes. It is possible, although highly speculative for now considering that the Sites Reservoir Project is still going through the planning and permitting processes, that Delta Conveyance Project's pulse protections will be coordinated with similar protections proposed as part of the Sites Reservoir Project. Consistent with the criteria described in Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, the Sites Reservoir Project has been considered qualitatively in the cumulative impacts analysis. However, any attempt to run a comprehensive quantitative analysis would be at best highly speculative and based on operations criteria for the Sites project that are still subject to review and refinements and is thus beyond the scope of CEQA requirements for this EIR.

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		Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding information on cumulative analysis.
568-66	[ATT 1:] Chapter 3- 3.16.2.3 Rio Vista Minimum Instream Flow Criteria, page 3-144. The DEIR indicates that the Proposed Project will operate in conjunction with the south Delta [Sacramento-San Joaquin Delta] exports at Banks Pumping Plant to meet existing D-1641 requirements. However, the DEIR lacks analyses and discussions on how the Bay-Delta Water Quality Control Plan amendments for water quality criteria and flow objectives will be considered for future modeling and operational criteria at the SWP [State Water Project] facilities. CDFW [California Department of Fish and Wildlife] requests the EIR include a thorough discussion of the Bay-Delta Water Quality Control Plan amendments to water quality criteria and flow objectives and how DWR [Department of Water Resources] will address these updates to criteria with proposed operations at the NDD [North Delta Diversions] and existing operations in the south Delta at Banks Pumping Plant.	As stated in Chapter 3, Description of the Proposed Project and Alternatives, the Delta Conveyance Project would operate in conjunction with operations of the existing SWP and potentially CVP intakes in the south Delta. Operations of the existing facilities will be governed by all the applicable existing and relevant future regulatory requirements, and so will operations of the proposed north Delta intakes. Under CEQA, and as described in Chapter 3, with further details in Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, the baseline for assessing the significance of impacts of a proposed project is the environmental setting as it exists at the time of issuance of the Notice of Preparation. Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, discusses existing conditions baseline, including those regulations, and explains how potential updates to the Bay-Delta Water Quality Control Plan relate to the Delta Conveyance Project EIR (also see Common Response 8, Relationships to Other Plans, Projects, Policies, and Programs). Nevertheless, please also see Appendix 4C, Alternate Regulatory Scenario Sensitivity Analysis, which does not fall under the CEQA requirements for this project's EIR and is thus not part of the impact analyses but demonstrate that use of an "alternate" regulatory baseline representing potential updates to the Water Quality Control Plan would not change the impact determinations disclosed in the document.
568-67	[ATT 1:] Chapter 3- 3.16.2.4 Delta Outflow Criteria, page 3-145. The DEIR does not accurately reflect the 2020 SWP [State Water Project] ITP [Incidental Take Permit] Condition of Approval 9.1.3.1 Summer-Fall Action Plan, regarding Suisun Marsh Salinity Control Gates (SMSCG) operations.	The current language in Chapter 3, Description of the Proposed Project and Alternatives, accurately describes ITP condition of approval 8.19 on the use of the 100 TAF. The language in Condition of Approval 8.19 clearly articulates that a portion of the 100 TAF will be used to operate the SMSCG in the dry years following wet and above normal years. In the Condition of Approval 8.19 there is a condition regarding spill, which indicates that if Oroville goes into flood control, then the 100 TAF is no longer available for

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	CDFW requests that the language in the EIR acknowledge that SMSCG [Suisun Marsh Salinity Control Gates] operation in dry years are not conditioned on the 100 TAF for Delta [Sacramento-San Joaquin Delta] outflow, and that the 100 TAF is additive to the summer-fall requirements in the 2020 SWP ITP in AN and BN water year types and in D years that follow W or AN.	use the following year.
568-68	[ATT 1:] Chapter 3- 3.16.3 Integration of North Delta Intakes with South Delta Facilities 3-145. The DEIR states that intakes would be used to capture excess flows when the south Delta exports are limited and unable to capture these flows. Please provide examples of potential circumstances when south Delta [Sacramento-San Joaquin Delta] exports would be limited but diversions from the north would be possible.	Please refer to Chapter 3, Description of the Proposed Project and Alternatives, section titled Integration of North Delta Intakes with South Delta Facilities, regarding situations when the north Delta diversions could be used when excess flows are present. For example, when existing criteria are limiting diversions in the south Delta, the new north Delta intakes could divert if allowed by the new operational criteria and existing Delta regulatory requirements. Please also refer to Common Response 3, Alternatives Development and Description, regarding integration of the north Delta intakes with the SWP.
568-69	[ATT 1:] Chapter 3- 3.16.3 Integration of North Delta Intakes with South Delta Facilities 3-145. The DEIR states that south Delta [Sacramento-San Joaquin Delta] exports and the NDD [north Delta Diversions] would be balanced and adjusted to meet the State Water Board D-1641 salinity requirements at the western Delta stations on the Sacramento and San Joaquin rivers. CDFW requests that the EIR provide additional information on the proposed balancing strategy, particularly on its frequency.	The information provided in Chapter 3, Description of the Proposed Project and Alternatives, regarding the operation of the Delta Conveyance Project intakes is an accurate description of the criteria under which the Delta Conveyance Project will operate. In the Final EIR, language has been added to Chapter 3, in the section titled Integration of North Delta Intakes with South Delta Facilities, that clarifies operation of the proposed project in late spring, summer, and fall, when the SWP facilities are typically operated to meet State Water Board D-1641 salinity requirements in the Delta. Overall, it is expected that the enhanced flexibility offered by the project real-time operations will result in more efficient system operation where less water is needed to meet the water quality standards. Operations of the project and alternatives would be guided by operational

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	Furthermore, the EIR should include more information on operational strategies for scenarios when compliance can only be met at one Delta station, or if compliance cannot be met at any station.	criteria that would require operational changes based on hydrologic conditions, presence of fish species, and other Delta regulatory requirements. Please see Chapter 3, Description of the Proposed Project and Alternatives, for the description of how the north Delta intakes would operate in conjunction with south Delta facilities with no proposed increase to the total quantity of water permitted for diversion under existing DWR water rights. Detailed modeling results—including diversions through the proposed north Delta facilities, existing south Delta facilities, total (combined) SWP, and total SWP and CVP exports—are presented in Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, Attachment 3, CalSim 3 Model Results for Existing Conditions and the Alternatives at 2020. Please also refer to Common Response 3, Alternatives Development and Description, regarding integration of the north Delta intakes with the SWP.
568-70	[ATT 1:] Chapter 3- 3.16.4 - Use of North Delta Intakes for Wheeling, pages 3-147: The DEIR does not analyze water transfers at its fullest export capacity stating it is not currently achieved now and therefore is unlikely to change in the future. CDFW disagrees that this is sufficient reason for the analysis to be omitted. The Project should assess potential impacts which could be increased because of increased water transfer. CDFW [California Department of Fish and Wildlife] requests that water transfers be analyzed at the maximum allowable amounts (Appendix 3H) in CalSim to determine potential impacts with additional information explaining how the DCP [Delta Conveyance Project] will reduce the amount of carriage water required for moving water transfers across the Delta.	Appendix 3H, Non-Project Water Transfer Analysis for Delta Conveyance, uses the maximum permitted amount because that is the maximum amount of water that could be permitted in a transfer. Appendix 3H describes the potential change in carriage water and explains the regulations that require maintenance of Delta outflow conditions. Water transfers are performed under baseline conditions between willing buyers and sellers and DWR's role would be limited to conveying the water through SWP facilities. As described in Appendix 3H, Non-Project Water Transfer Analysis for Delta Conveyance, water transfers can occur within a year and between years and have done so between 1995 and 2020. Potential changes to the system during a water transfer are described in Appendix 3H. As disclosed in the appendix, even though the Delta Conveyance Project may add additional export capacity, it is not reasonably foreseeable that it would increase the amount of water transfers through the SWP, since the current capacity is not fully utilized. The project would not exacerbate or worsen potential effects of water transfers because, in general, water transfers under operating conditions of the project would

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		not change from those that occur under existing conditions. Furthermore, the responsibility of disclosing potential environmental effects of water transfers is that of the willing buyer and seller conducting the transfer and not DWR. All environmental effects would be taken into consideration during the time of the transfer by the willing buyer and seller. Finally, the use of the north Delta intakes in a water transfer would not change the operations as described within Chapter 3, Description of the Proposed Project and Alternatives, because the Delta Conveyance Project would operate within the criteria and parameters described in the EIR, permits, and to meet regulatory standards. Given all of the above, DWR does not need to evaluate a “worst-case scenario,” nor does CEQA require evaluations of “worst-case scenario,” as suggested by the comment. DWR has conducted a reasonable analysis of water transfers to show that the project would not exacerbate or worsen potential effects of water transfers.
568-71	[ATT 1:] Chapter 3- Table 3-14. Delta Conveyance Project Preliminary Proposed Operations Criteria, page 3-150. The DEIR does not include operational criteria for the December through June period that defines how water will be diverted by NDD [North Delta Diversions] and the south Delta [Sacramento-San Joaquin Delta] during Condition of Approval (COA) 8.17 (Export Curtailments for Spring Outflow) of the 2020 SWP [State Water Project] ITP [Incidental Take Permit] or during COA 8.18 (Potential to Redeploy up to 150 TAF for Delta Outflow) and COA 8.19 (Additional 100 TAF for Delta Outflow). CDFW [California Department of Fish and Wildlife] requests that the EIR include additional information on how export operations at the north and south Delta would interact with the current spring export curtailments (ITP COA 8.17) to ensure	Please refer to response to comment 568-15 regarding the Spring Outflow Requirement. The CalSim 3 model supporting all impact analyses includes the north Delta diversion in the export term that is reduced to meet the Spring Outflow requirement. Interaction of COA 8.17 with 8.18 and 8.19 will remain the same as current conditions. If 8.18 and 8.19 water is stipulated for outflow, it would not be exported at north Delta diversions, similar to the south Delta diversions.

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	redeployed water is not exported after it is released from upstream reservoirs (COA 8.18 and COA 8.19).	
568-72	[ATT 1:] Chapter 3- Table 3-14. Delta Conveyance Project Preliminary Proposed Operations Criteria, page 3-151. On October 1, 2021, USBR requested reinitiation of consultation on the 2019 NMFS and USFWS BiOps [USFWS Biological Opinions]. Given the construction period presented in the DEIR, the 2019 BiOps are likely to be replaced before the Proposed Project becomes operational. The Bay- Delta WQCP update is also in process and would presumably result in changes to D-1641 prior to the operational phase of the Proposed Project. CDFW [California Department of Fish and Wildlife] recommends that the EIR explain the process the Proposed Project would follow to incorporate and adhere to updated standards during the permitting and construction phases of the Proposed Project.	Please see response to comment 568-66 regarding the existing conditions baseline and the current and future regulatory requirements which would govern operation of the project. Please note that the CEQA planning process is separate and independent of the permitting process. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for further details regarding the planning scope and permit requirements.
568-73	[ATT 1:] Chapter 3- Table 3-14. Delta Conveyance Project Preliminary Proposed Operations Criteria, page 3-151. The DEIR does not state whether NDD [North Delta Diversions] diversion rates and other real-time hydraulic monitoring data (e.g., sweeping velocities, bypass flows) will be made publicly available in real time. CDFW [California Department of Fish and Wildlife] requests that real-time hydraulic monitoring at the NDD be made publicly available on CDEC [California Data Exchange Center], or similar data-sharing platform.	Please refer to Common Response 7, Implementation Considerations, regarding community and public engagement during project implementation, including engagement around regulatory mitigation efforts. DWR will meet applicable requirements regarding the publication of monitoring data. Data collected from new or existing stations used to monitor north Delta diversions bypass flows will be made available. Note that the Delta Conveyance Project will be required to comply with applicable approach and sweeping velocity requirements.

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568-74	[ATT 1:] Chapter 3- Table 3-15. Proposed North Delta Diversion Bypass Flow and Pulse Protection Requirements 3.16.1.3 Pulse Protection, pages 3-152 3-143. Table 3-15 of the DEIR and Section 3.16.1.3 of the DEIR do not include consistent language regarding off ramping pulse protections. Table 3-15 indicates that pulse protections can offramp if Sacramento River flow at Wilkins Slough returns to pre-pulse flow level, as defined as flow on the first day of a 5-day flow increase. Section 3.16.1.3 indicates that pulse protections can offramp if Sacramento River flow at Wilkins Slough returns to pre-pulse flow level, as defined as flow on first day of pulse period. CDFW [California Department of Fish and Wildlife] requests the EIR more clearly explain the criteria used to offramp the pulse protection period. Specifically, explain which day is the first day of the pulse protection period and how that relates to the 5-day average used to onset the pulse protection.	The text in this section has been revised to reflect the described pulse protection description in the subject table. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-75	[ATT 1:] Chapter 3- Table 3-15. Proposed North Delta Diversion Bypass Flow and Pulse Protection Requirements, page 3-152. The DEIR does not provide biological justification for bypass flow criteria or a description of how the criteria were developed as a minimization measure for NDD [North Delta Diversions]. CDFW [California Department of Fish and Wildlife] requests the EIR provide clarification on how the bypass flow criteria were	Please refer to Common Response 3, Alternatives Development and Description, regarding the development of the operational criteria for the Delta Conveyance Project, including evaluation of multiple sensitivity studies to identify suitable bypass flows. This process is described in Appendix 3A, Identification of Water Conveyance Alternatives. Please note that, as described in Chapter 3, Description of the Proposed Project and Alternatives, during the time from permit issuance through initial north Delta diversion operations, DWR would conduct studies such as evaluating the relationship between the hydrologic conditions and the behavior of migrating juvenile salmonids in the Sacramento River reach

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	developed and biological justification for these criteria supporting them as a minimization measure for NDD.	between Wilkins Slough/Knights Landing and the north Delta intakes as part of the Operations Adaptive Management and Monitoring Plan (OAMMP). Those studies would help inform potential triggers for real-time operational responses of the north Delta intakes, and potential refinements (if at all necessary) of proposed operational criteria, including bypass flows, to further minimize operational effects to listed species.
568-76	[ATT 1:] Appendix 3B- 3B.1.11 EC-10: Marine Vessels, pages 3B-19. The DEIR does not include procedures for invasive species inspections on marine vessels. CDFW [California Department of Fish and Wildlife] recommends invasive species inspections before vessels are deployed, especially if the vessels do not originate from the Delta [Sacramento-San Joaquin Delta].	Environmental Commitment EC-14 includes a commitment that equipment to be used in aquatic habitats, which would include marine vessels, will be thoroughly cleaned and inspected for aquatic invasive plant propagules and animal species before entering aquatic habitats.
568-77	[ATT 1:] Appendix 3B- 3B.1.15 EC-14: Construction Best Management Practices for Biological Resources, pages 3B-26. Issue: The DEIR states rodenticides and herbicides will be used in accordance with the manufacturer recommended uses. Rodenticides are not supported by CDFW [California Department of Fish and Wildlife] as a form of pest management due to the risk of secondary poisoning. Recommendation: CDFW requests that rodenticides not be used and removed as a method of rodent control in the EIR, especially in areas of suitable habitat for special status species.	Environmental Commitment EC-14 and Mitigation Measure BIO-2b have been revised to clarify that rodenticides will not be used on compensatory mitigation lands and that broadcast baiting will be prohibited on all project-related and mitigation lands. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-78	[ATT 1:] Appendix 3C- 3C.3.2.3.1 No Project Alternative Assumptions for Water Rights, page 3C-9: Issue: The DEIR states the No Project Alternative assumes there	Please see Common Response 4, No Project Alternative Description and Analysis, for a description of the timeframes used for the No Project Alternative in the CEQA analysis. An explanation of why specific actions, projects, and programs were included or excluded from the No Project

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	would be no changes to senior water rights in the Sacramento and San Joaquin River watersheds by 2025 through use of facilities currently available or under construction (p. 3C-9). However, the DEIR uses the two No Project Alternative timeframes of 2020 and 2040, neither of which align with 2025. For 2020, any Water Rights assessed should be included in existing conditions. For 2040, any Water Right changes associated with foreseeable projects should be included. Recommendation: CDFW [California Department of Fish and Wildlife] recommends potential Water Right changes be evaluated through 2040 and included as appropriate. There are multiple, foreseeable projects currently petitioning the Water Board for water right changes (e.g., Sites Reservoir is petitioning for new Water Rights). These foreseeable changes to water diversion rates, locations, and/or quantities should be included in the No Project Alternative 2040.	Alternative analysis can also be found in Common Response 4. Please also see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the cumulative impact analysis and approach used the EIR. As noted in that Common Response, projects that would occur irrespective of the Delta Conveyance Project are identified and included in a qualitative cumulative analysis.
568-79	[ATT 1:] Appendix 3C- Table 3C-2 Descriptions of Programs, Projects, and Policies Considered for Existing Conditions, No Project Alternative, and Cumulative Impact Analysis, page 3C-17: Issue: Del Puerto Canyon Reservoir will be an 800-acre reservoir storing up to 82,000 AF. Water will be diverted into the reservoir from the Delta-Mendota Canal. This project was approved in late 2020. Therefore, it is unclear why this project is not included in the No Project Alternative. Recommendation: CDFW [California Department of Fish and Wildlife] recommends the No Project Alternative include the Delta Puerto Canyon reservoir and its proposed operations.	For a description of the general approach for defining the No Project Alternative and the No Project Alternative analysis, please see Common Response 4, No Project Alternative Description and Analysis. As described in Common Response 4 and Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, the analysis in the EIR assumes that in the absence of the Delta Conveyance Project, public water agencies that would otherwise participate in Delta Conveyance would seek to improve local water supply reliability by implementing new water infrastructure projects and water conservation and demand management programs. As explained in Common Response 4 and analyses of the No Project Alternative in resource chapters, the Del Puerto Canyon Reservoir is not a predictable action that would be pursued by public water agencies as a response to not pursuing the Delta Conveyance Project because it has already been proposed and is being

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		considered in an environmental review process. The EIR No Project Alternative analysis is intended to provide decision-makers information about the potential environmental consequences of other PWA water supply facilities that would be needed to create water supply resiliency in the absence of the Delta Conveyance Project. The Del Puerto Canyon Project was also no included in the No Project Alternative Analysis because it is not a project that would be expected to directly affect resources in the Delta Conveyance Project study area under a No Project Alternative scenario. However, the Del Puerto Canyon Reservoir project is included as a reasonably foreseeable cumulative project to consider for cumulative impact analyses.
568-80	[ATT 1:] Appendix 3C- Table 3C-2, Descriptions of Programs, Projects, and Policies Considered for Existing Conditions, No Project Alternative, and Cumulative Impact Analysis, page 3C-43: Issue: The DEIR lists the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project as included in Existing Conditions as well as included the project in the Cumulative Impact Analysis but excluded it from the No Project Alternative. It is unclear why the fish passage project is not included in the No Project Alternative. Recommendation: CDFW [California Department of Fish and Wildlife] recommends including the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project in the No Project Alternative.	The initial phase of the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project is considered in existing conditions; see, for example, the summary in the environmental setting of Chapter 12, Fish and Aquatic Resources. The notch, as part of the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project, is included in the modeling of the No Project Alternative, as described in Appendix 5A, Section B Modeling Technical Appendix - Hydrology and Systems Operations Modeling, in the section titled Water Management and Control Facilities; therefore, revision to the No Project column in the table titled Descriptions of Programs, Projects, and Policies Considered for Existing Conditions, No Project Alternative, and Cumulative Impact Analysis found in Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, has been made. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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		For a description of the general approach for defining the No Project Alternative and the No Project Alternative analysis, please see Common Response 4, No Project Alternative Description and Analysis.
568-81	[ATT 1:] Appendix 3C- Table 3C-2, Descriptions of Programs, Projects, and Policies Considered for Existing Conditions, No Project Alternative, and Cumulative Impact Analysis, page 3C-44: Issue: The Los Vaqueros Reservoir Expansion Project will increase the reservoir capacity to 275,000 AF from 160,000 AF, add a new 470 cfs connection to South Bay water agencies, and include construction of a new diversion at Old River with capacity of 170 cfs. Additionally, the reservoir project proposes doubling Contra Costa Water District's current diversion quantities from the Delta [Sacramento-San Joaquin Delta]. The expansion is currently being permitted and expected to be completed by 2040. Therefore, it is unclear why it was not included in the No Project Alternative. Recommendation: CDFW [California Department of Fish and Wildlife] recommends including the Los Vaqueros Reservoir Expansion project and proposed operations in the No Project Alternative.	As described in Common Response 4, No Project Alternative Description and Analysis, and Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, the analysis in the EIR assumes that in the absence of the Delta Conveyance Project, participating water agencies would seek to improve water supply reliability through other projects. The Los Vaqueros Reservoir Expansion Project is not a predictable action by a water agency that would occur if the Delta Conveyance Project is not approved and raising the Los Vaqueros Reservoir Dam was judged to not have direct impacts on the Delta Conveyance Project study area that would be useful for the No Project Alternative analysis. Please also see response to comment 568-78 in regard to projects included in the No Project Alternative analysis. Los Vaqueros reservoir is considered a cumulative project that is considered in combination with the Delta Conveyance Project in the cumulative impact analysis. For a description of the general approach for defining the No Project Alternative and the No Project Alternative analysis, please see Common Response 4.
568-82	[ATT 1:] Appendix 3C- Table 3C-2, Descriptions of Programs, Projects, and Policies Considered for Existing Conditions, No Project Alternative, and Cumulative Impact Analysis, page 3C-66: Issue: The Bay-Delta Water Quality Control Plan Update to the 2006 Bay-Delta WQCP currently has amendments in process. Therefore, it is unclear why it is not considered in the No Project Alternative.	As described in Common Response 4, No Project Alternative Description and Analysis, and Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, the analysis in the EIR assumes existing plans would continue by federal, state, and local agencies that affect the Delta Conveyance Project. The Bay-Delta Water Quality Control Plan Update (San Joaquin River Flows and Southern Delta Salinity) was approved prior to Notice of Preparation and is acknowledged as such in Appendix 3C. It was not included in the No Project Alternative modeling analysis because it has not been implemented and the State Water Board

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	Recommendation: CDFW [California Department of Fish and Wildlife] recommends the Bay-Delta Water Quality Control Plan Update be included in the No Project Alternative. This would also provide a useful comparison to the Alternate Regulatory Scenario presented in Appendix 4C.	continues to develop implementation requirements that are yet to be made public. The Bay-Delta Water Quality Control Plan Update (Sacramento River/Delta) was not included in existing conditions or the no project alternative because it is not yet approved, nor implemented. Appendix 4C, Alternate Regulatory Scenario Sensitivity Analysis, is meant to provide an analysis of how the project could operate under an alternate regulatory scenario. The limitation described in the appendix is a valid assumption related to operations under the potential conditions described in an alternate regulatory scenario. As described in the appendix, the process to incorporate new diversions into the updated Bay-Delta Plan is not yet developed. The assumptions described in Appendix 4C and the modeled conditions using the alternate regulatory scenario are reflective of how the project could operate under an alternate regulatory scenario. Appendix 4C indicates that potential effects of the project under the alternative regulatory scenario are consistent with those identified throughout the resource chapters of the EIR. Please note that this analysis is not required by CEQA nor used to support the CEQA findings disclosed in Chapters 7 through 32. For a description of the general approach for defining the No Project Alternative and the No Project Alternative analysis, please see Common Response 4.
568-83	[ATT 1:] Appendix 3C- Table 3C-2, Descriptions of Programs, Projects, and Policies Considered for Existing Conditions, No Project Alternative, and Cumulative Impact Analysis, page 3C-74: Issue: Reclamation and DWR [Department of Water Resources] jointly manage San Luis Reservoir for the purpose of storing and reregulating CVP [Central Valley Project] and SWP [State Water Project] water from the Delta [Sacramento-San Joaquin	As described in Common Response 4, No Project Alternative Description and Analysis, and Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, the analysis in the EIR assumes that in the absence of the Delta Conveyance Project, participating water agencies would seek to improve local water supply reliability through other projects. The San Luis Reservoir Low Point Project is intended to improve water supply reliability and reduce water quality degradation during reservoir drawdown. It was not included in the No Project Alternative because it would not directly affect resources in the Delta

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	Delta]. In 2000, the CALFED Programmatic Record of Decision identified the need to resolve the low point problem to potentially increase use of water from San Luis Reservoir by up to 200,000 acre-feet. A public draft feasibility report was released April 2019 and an EIS/EIR was released in 2020; therefore, it is unclear why this project is not included in the No Project Alternative. Recommendation: CDFW [California Department of Fish and Wildlife] Recommends the San Luis Low Point Improvement Project be added to the No Project Alternative.	Conveyance Project study area or be useful for decision-makers to consider the consequences of not approving the project. It is included in the cumulative impact analysis to evaluate the combined effects of the project alternatives, including the No Project Alternative, and other cumulative projects. For a description of the general approach for defining the No Project Alternative and the No Project Alternative analysis, please see Common Response 4.
568-84	[ATT 1:] Appendix 3F- 3F.1 Introduction, page 3F-1. Appendix 13C, Table 13C-9 identifies permanent, long-term temporary, and temporary habitat loss for terrestrial species under the Proposed Project. Chapter 12, Tables 12-11 and 12-12 identify permanent and temporary impacts to aquatic species under the Proposed Project. However, the CMP in Appendix 3F does not mirror the impacts associated with Chapter 12 and Appendix 13C and is vague and often contradictory in terms of which species and their habitats will receive mitigation. CDFW [California Department of Fish and Wildlife] requests that the EIR's CMP identifies which habitats mitigate for each species, how much acreage and at what mitigation ratio species specific mitigation will occur within initial mitigation sites and mitigation banking, and under what timeline mitigation will occur. At minimum, CDFW recommends the EIR commit to a mitigation strategy that avoids temporal impacts to species. CDFW also recommends the EIR commit to	Regarding the timeline of compensatory mitigation relative to project construction, please see response to comment 568-43. Regarding the request for more information about mitigation ratios, please also see Common Response 11, Terrestrial Biological Resources and Compensatory Mitigation Plan, in the discussion of compensatory mitigation. Mitigation ratios have been developed after further consultation with CDFW and USFWS. Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, has been revised to reflect this updated information: the table titled Compensatory Mitigation Approaches has been revised to show mitigation ratios, and the table titled Comparison of Bouldin Island Sites B1, B2 and B3 Existing Land Cover with Total Created or Enhanced Habitat with Full Implementation(acres) has been revised to provide more detail for landcover changes. Appendix 3F has been updated to incorporate this information. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	mitigating any loss of species habitat during implementation of the CMP itself.	
568-85	[ATT 1:] Appendix 3F- 3F.3.2.1 Hierarchal Approach, page 3F-12. The DEIR includes the following step in the hierarchical approach to mitigation: "permittee responsible mitigation through off-site and/or out-ofkind mitigation." It is unclear what "out-of-kind mitigation" means and therefore it is unclear if it will be appropriate for mitigating impacts associated with construction and operation of the Proposed Project. CDFW [California Department of Fish and Wildlife] requests the EIR provide clarification on the meaning of "out-of-kind mitigation" demonstrating its appropriateness or include a commitment to mitigation under an appropriate hierarchical approach.	In response to the comment, the Hierarchal Approach section of Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, has been revised to clarify the meaning and application of "out-of-kind mitigation." The section starts by listing all five options for aquatic resources compensatory mitigation described under the 2008 mitigation rule (33 CFR 332.3(b)), including option 5 "permittee-responsible mitigation through off-site and/or out-of-kind mitigation." ("Out-of-kind" means a resource of a different structural and functional type from the impacted resource.) However, as stated in the final sentence of this paragraph, compensatory mitigation for aquatic resources impacted by the project "would be provided for through either mitigation bank credits or permittee-responsible mitigation under a watershed approach." The text in Appendix 3F has been updated to clarify that out-of-kind mitigation is not an option proposed in the CMP for the project. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-86	[ATT 1:] Appendix 3F- Table 3F-4. Summary of Compensatory Mitigation for Special-Status Species Habitat Created or Enhanced at Initial Mitigation Sites, page 3F-18. Table 3F-4 of the DEIR indicates there will be a net loss of foraging habitat for burrowing owl, Swainson's hawk, and greater sandhill crane as well as nesting habitat for burrowing owl. However, the DEIR does not include any mitigation for the loss of these habitat types. CDFW [California Department of Fish and Wildlife] requests that EIR include appropriate mitigation for the loss of habitat through the conversion of habitat and commit to mitigating for	The impacts of the loss of foraging habitat as a result of the CMP are analyzed for Swainson's hawk, greater sandhill crane, and burrowing owl in Chapter 13, Terrestrial Biological Resources, under the heading Mitigation Impacts for each species. These impact analyses also provide mitigation measures to address this loss. Appendix 13C, Impact Tables, in the Natural Community Impacts (acres)—Compensatory Mitigation Plan table, provides the permanent surface impacts at each mitigation area, by natural communities and land cover type. In addition, the table titled Summary of Special-Status Species Habitat That Will Be Created or Enhanced with Full Implementation of the Initial Mitigation Sites (acres) in Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, has been updated to provide total post-project habitat acres, and the tables that provide a comparison of existing land cover with

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	habitat loss impacts caused by the implementation of its mitigation actions.	proposed for each mitigation site have been revised to clarify the conversion of land cover types. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. Site protection instruments are the main mitigation approach for these bird species' habitat, as described in Chapter 13 and Appendix 3F, in the section titled Site Protection Instruments. The CMP and site-specific permitting approvals would account for any losses of habitat from habitat creation by adjusting the overall commitment of riparian and wetland creation and grassland and cultivated lands protection. Attachment 3F.1, Compensatory Mitigation Design Parameters for Loss of Special-Status Species Habitat (in the table titled Design Commitments and Guidelines for Compensatory Mitigation to Compensate for Loss of Special-Status Species Habitat), includes guidelines to ensure that any habitat conversions associated with site development are accounted for (CMP-0) and that measures to protect foraging habitat for Swainson's hawk (CMP-19b), greater sandhill crane (CMP-18b), and burrowing owl (CMP-20).
568-87	[ATT 1:] Appendix 3F- Table 3F-4. Summary of Compensatory Mitigation for Special-Status Species Habitat Created or Enhanced at Initial Mitigation Sites, page 3F-18. Table 3F-4 of the DEIR proposes channel margin habitat be constructed on Bouldin Island to offset construction related impacts to fisheries resources, including winter-run and spring-run Chinook salmon. However, Bouldin Island is located outside the main migratory route for winter-run and spring-run Chinook salmon that utilize the Sacramento River. Sacramento basin CESA [California Endangered Species Act] listed species enter the Mokelumne River either through entrainment through Georgiana Slough or through "reverse" outmigration	In response to the comment regarding channel margin habitat, please see response to comment 568-41, which states proposed channel margin habitat has been removed from Bouldin Island. In response to the comment regarding covered fish species, Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, in the table titled Special-Status Fish and Wildlife Species and Habitats, has been revised to clarify "Fisheries" to include tidal wetland for winter-run and spring-run Chinook salmon, delta smelt, and longfin smelt and channel margin for winter-run and spring-run Chinook salmon. None of the revisions identified in Chapter 12, Fish and Aquatic Resources, or Chapter 13, Terrestrial Biological Resources resulted in a new significant

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	through the San Joaquin River. Both routes are known to have reduced survival based on telemetry data. CDFW [California Department of Fish and Wildlife] suggests review of telemetry studies to better understand salmon use of this area. Although this restoration would be beneficial to the ecosystem, CDFW requests the EIR prioritize areas that are within the main migratory pathway of Sacramento Basin CESA-listed species that would be impacted by the construction of the NDD [North Delta Diversions]. CDFW also requests the EIR clearly identify which Covered Species are included under fisheries as identified in Table 3D-4. CDFW has different considerations regarding mitigation for smelt versus salmonids.	environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-88	[ATT 1:] Appendix 3F- 3F.4.1.3 Bouldin Island Mitigation Sites, page 3F-21. The DEIR states that enhancements and construction activities on Bouldin Island would begin once Metropolitan Water District gives their support for the projects. This implies that all enhancement activities proposed to occur on Bouldin Island do not currently have approval by the landowner and may not be a viable site for mitigation. As with all mitigation, CDFW [California Department of Fish and Wildlife] recommends that the EIR clearly explain the feasibility of mitigation, relying only on mitigation measures that can feasibly be implemented.	Regarding the feasibility of compensatory mitigation on Bouldin Island, DWR coordinated with the landowner, Metropolitan Water District of Southern California (MWD), in selecting the sites and developing the habitat restoration concepts. As explained in the Parties Responsible for Implementation section of Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, as a project partner and landowner for the sites, MWD would be involved in implementing the Compensatory Mitigation Plan. For purposes of CEQA, a mitigation measure is feasible if it is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors. Based on DWR's discussions with MWD regarding the Bouldin Island mitigation sites, DWR has determined that it will be feasible to reach agreement with MWD regarding implementation of the Bouldin Island mitigation sites should DWR approve the proposed project or a project alternative. Furthermore, the need for coordination with another public agency does not render a mitigation measure infeasible. CEQA allows an agency to approve or carry

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		out a project with potential adverse impacts if binding mitigation measures have been required in or incorporated into the project, or if those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency. In consideration of DWR's discussions with MWD regarding the Bouldin Island mitigation sites, DWR concludes that MWD can and should reach agreement with DWR to implement the Bouldin Island CMP mitigation.
568-89	[ATT 1:] Appendix 3F- 3F.4.1.3.2 Site Selection Criteria and Baseline Conditions, page 3F-25. The DEIR states that a delineation of potentially jurisdictional wetlands and other waters were mapped from aerial imagery for Bouldin Island. Standard delineation is a more accurate way of mapping habitat types. As the Proposed Project relies on Bouldin island to achieve much of the mitigation required, CDFW [California Department of Fish and Wildlife] recommends the EIR include standard delineation of habitat on Bouldin Island to assess existing features more accurately on the island in planning mitigation.	The EIR adequately assesses baseline conditions of wetlands for the purposes of CEQA. Please see Common Response 11, Terrestrial Biological Resources and Compensatory Mitigation Plan, which discusses the adequacy of analysis based on data such as aerial imagery, as well as the Compensatory Mitigation Plan's level of design detail. As described in the Wetlands and Other Waters of the United States section of Chapter 13, Terrestrial Biological Resources, the aquatic resources delineation was verified by the U.S. Army Corps of Engineers, and the State Water Board concurred that the aquatic resources mapped by DWR would be considered to include all waters of the state. Additional design and planning, including site-specific technical studies, will be conducted prior to project initiation.
568-90	[ATT 1:] Appendix 3F- 3F.4.1.3.3 Site Design and Development, page 3F-30. The DEIR states that "Removal of any nonnative trees would be performed outside the bird nesting season (p. 3F-30)." However, no additional information is provided pertaining to a process for which the value of nonnatives is assessed. Often, old growth nonnatives (e.g., eucalyptus) provide low quality, suitable habitat in areas where habitat is lacking. Removing the trees does not replace the habitat features provided by nonnatives if they are playing an ecologically significant role.	In response to the comment, the sentence regarding the removal of nonnative trees during construction of initial compensatory mitigation sites has been deleted from Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. In addition, vegetation removal will be consistent with Environmental Commitment EC-14, which will reduce the potential for the introduction and spread of invasive plants by restoring temporarily disturbed areas,

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	CDFW [California Department of Fish and Wildlife] requests more information regarding the removal of nonnative trees be added to the EIR including a process for evaluation of habitat significance to the surrounding area.	reseeding areas with noninvasive species, and ensuring that equipment is cleaned and inspected before entering new areas. Also, as described in several impact analyses in Chapter 13, Terrestrial Biological Resources, Mitigation Measure BIO-36a will avoid and minimize impacts on nesting special-status and non–special-status birds and raptors as a result of vegetation removal.
568-91	[ATT 1:]Appendix 3F- 3F.4.1.3.6 Construction Schedule, page 3F-34. The DEIR states habitat restoration-related construction would likely occur over a period of 2-4 years given the scale of the mitigation site. Therefore, these mitigation sites will not provide habitat, and replace habitat lost, until after they establish mature vegetation with maintained hydrologic connection. CDFW [California Department of Fish and Wildlife] recommends transplanting some mature trees in riparian areas to provide some habitat benefits in a shorter time scale. Please also see comments about ensuring that habitat mitigation occurs on a timescale relative to Proposed Project construction impacts that is sufficient to avoid temporal impacts to species.	Regarding the comment about avoiding temporal impacts on species due to loss of riparian trees, CMP-0 in Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, has been updated to further clarify that any habitat loss or conversions associated with compensatory mitigation site development are offset so that there would be no net loss in habitat value and that any compensatory mitigation to offset habitat losses (associated with the implementation of compensatory mitigation projects) would be constructed prior to or concurrent with the impact. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. The suggestion to transplant some mature trees to jump-start habitat benefits in riparian areas will be considered as the design is further developed for each mitigation site. As noted in Common Response 11, Terrestrial Biological Resources and Compensatory Mitigation Plan, the level of specificity in the Compensatory Mitigation Plan is sufficient for CEQA, but it is anticipated that additional design (including planting criteria) and approvals may be needed prior to implementation.
568-92	[ATT 1:] Appendix 3F- 3F.4.1.4 DWR [Department of Water Resources] I-5 Ponds, page 3F-34. The DEIR identifies the I-5 Ponds (Ponds 6, 7, and 8) as an initial mitigation site for several special-status species habitats,	Common Response 11, Terrestrial Biological Resources and Compensatory Mitigation Plan, describes how potential conflicts and land encumbrances at the I-5 ponds initial mitigation sites will be addressed, confirms that the sites are in alignment with CDFW’s mitigation policy, and provides information on the DWR/CDFW interagency agreement. In addition,

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	including giant garter snake (Table 3F-1). Currently, all three ponds are managed by CDFW [California Department of Fish and Wildlife] as Class C Wildlife Areas open to the public for hunting and fishing. CDFW recommends the EIR describe how habitat enhancement and creation will impact existing land use while also enhancing species' conditions above existing conditions.	Chapter 16, Recreation, finds that there will not be significant environmental impacts on recreation, including fishing and hunting, and Chapter 17, Socioeconomics, in ECON-5, finds that while there may be some short-term effects on some recreational opportunities and experiences, there will not be substantial, adverse effects, including on fishing and hunting opportunities and experiences. As noted in response to comment 568-58, DWR will continue to coordinate with CDFW through other regulatory processes.
568-93	[ATT 1:] Appendix 3F- 3F.4.1.4.2 Site Selection Criteria and Baseline Conditions, page 3F-35. The DEIR states that creating and enhancing wetland habitat at the I-5 Ponds will promote population viability and genetic connectivity among otherwise isolated populations of giant garter snake in the Delta [Sacramento-San Joaquin Delta]. There is no existing information in the DEIR regarding surveys within the I-5 Ponds documenting current presence or absence of giant garter snakes at the sites. The DEIR also lacks information on how existing populations outside of the mitigation sites will be connected to the I-5 Ponds to allow for giant garter snake dispersal and habitat use. For lands to be considered suitable habitat sufficient for mitigation credit, those species being mitigated for must not only be able to access the habitat intended for their use, but DWR [Department of Water Resources] should be able to demonstrate their occupancy. CDFW [California Department of Fish and Wildlife] requests the EIR include information on current occupancy of the I-5 Ponds by giant garter snake and other special-status species. To allow for giant garter snake dispersal and occupancy, CDFW recommends the EIR commit to hydraulically connecting the I-5	As described in Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, in the Approach to Special-Status Species Mitigation section, the I-5 pond mitigation sites are located in the White Slough Management Unit of the Delta Basin Recovery Unit for giant garter snake (U.S. Fish and Wildlife Service 2017a:II-10–II-11) and would extend connectivity between occupied sites at Stone Lakes National Wildlife Refuge and the CDFW Woodbridge Ecological Reserve by creating protected suitable habitat. The location also has suitable elevations, water supply, and access. Please see Common Response 11, Terrestrial Biological Resources and Compensatory Mitigation Plan, regarding the appropriateness of using habitat models, rather than surveys, for the purposes of CEQA and the accessibility for giant garter snake to colonize initial mitigation sites. Appendix 13B, Species Accounts, has been updated to include recent data demonstrating giant garter snake occupancy near the I-5 ponds (Zentner Planning and Ecology 2019). None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. In addition, Mitigation Measure BIO-30 requires that DWR, in agreement with CDFW and USFWS, delineate giant garter snake habitat and perform giant garter snake surveys prior to project construction.

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	Ponds to existing giant garter snake occupied habitat as well as provide continuous connectivity within the I-5 Ponds.	In regard to the hydrologic connectivity of the I-5 ponds, connectivity between Ponds 6, 7, and 8 and existing occupied giant garter snake habitat near the White Slough complex to the south (Ponds 9 to 13) via Hog Slough, White Slough, and connected agricultural ditches is assumed sufficient to support occupancy after creation and enhancement actions. Furthermore, in Mitigation Measure BIO-53, DWR commits to upgrading the existing culvert on SR 12 to a dedicated wildlife crossing structure to facilitate movement of aquatic and terrestrial wildlife.
568-94	[ATT 1:], Appendix 3F- 3F.4.1.4.3 Site Design and Development, page 3F-51. The DEIR states restoration would result in a net gain of freshwater marsh and open water (pond or depression), and a loss of riparian and grassland. However, there is no discussion of the degree existing suitable habitat for special-status species will be removed to provide a full understanding of the impact and confirmation of 'net' improvement. CDFW [California Department of Fish and Wildlife] requests the EIR include further discussion regarding the removal of existing suitable habitat and how this might be minimized or avoided further.	The permanent surface impacts at each mitigation area are provided, by natural communities and land cover type, in the Natural Community Impacts (acres)—Compensatory Mitigation Plan table in Appendix 13C, Impact Tables, and the impacts of the CMP are analyzed for each affected species in Chapter 13, Terrestrial Biological Resources, under the heading Mitigation Impacts. The text cited by the commenter is from Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, and is specific to the Pond 6 restoration site. The existing acres and the acres avoided for each land cover type for Pond 6 are presented in the Comparison of I-5 Pond 6 Existing Land Cover with Total Habitat Created and Enhanced with Full Implementation (acres) table in Appendix 3F, as are the acres of created, enhanced, and lost acres for each land cover type. In regard to minimizing or further avoiding removal of suitable habitat, please see response to comment 568-86.
568-95	[ATT 1:] Appendix 3F- 3F.4.2.1.1 Wetlands and Other Waters, page 3F-55. The DEIR states that impact on tidal habitats may also be compensated through wetland creation credits at an approved bank. However, it is unclear how tidal habitats can be	The list of wetlands and other waters included in Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, section titled Wetlands and Other Waters, was intended merely to identify the wetland types that could be mitigated through use of an approved bank. Tidal habitats would not be interchangeably compensated

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	compensated through vernal pool or alkaline wetlands that are not tidally influenced. CDFW [California Department of Fish and Wildlife] requests the EIR clarify how tidal habitats can be compensated through vernal pool or alkaline wetlands that are not tidally influenced or commit to in kind compensation.	through nontidal wetlands such as alkaline wetland and vernal pools, and vice versa.
568-96	[ATT 1:] Appendix 3F- 3F.4.2.2 Site Protection Instruments, page 3F-56. While the DEIR states the Compensatory Mitigation Plan (CMP) would be required to offset the impacts to tricolored blackbird nesting and foraging habitat, it states that no mitigation is specifically proposed for foraging habitat impacted by construction activities. While mitigation projects proposed to offset impacts to other resources may provide for suitable tricolored blackbird habitat, the lack of commitment to tricolored blackbird foraging habitat mitigation is questionable given that habitat loss in the Delta [Sacramento-San Joaquin Delta] is a limiting factor for the species, particularly due to constant land use changes and deterioration of habitat. Reduced presence of tricolored blackbird in the Delta reflects the ongoing need to provide habitat protection and improvements. CDFW [California Department of Fish and Wildlife] recommends the EIR include mitigation for tricolored blackbird foraging habitat loss. Specifically, CDFW recommends the EIR mitigate for both nonbreeding and breeding foraging habitat in addition to nonbreeding roosting habitat at a ratio of 1:1 for breeding and nonbreeding foraging, 2:1 for roosting, and 3:1	The EIR has been revised in Attachment 3F.1, Compensatory Mitigation Design Parameters, CMP-22b, to address mitigation for tricolored blackbird foraging habitat, which would overlap with mitigation for Swainson's hawk, greater sandhill crane, and vernal pools. The EIR has been updated with changes made during informal discussions with CDFW in support of the permitting process. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	for nesting. Mitigation should be applied to both temporary and permanent impacts caused by the Proposed Project.	
568-97	[ATT1:] Appendix 3F- 3F.4.3.1 Programmatic Approach, page 3F-56. The CMP of the DEIR proposes a conceptual plan for tidal restoration to offset hydrodynamic impacts due to NDD [North Delta Diversions], such as reverse flows at Georgiana Slough and reduced bench inundated habitat. However, the DEIR does not include specifics regarding the siting of the restoration, or the acreage needed to offset impacts to salmonids. Without these details and associated modeling CDFW [California Department of Fish and Wildlife] has concerns about the efficacy of tidal restoration in mitigating the hydrodynamic impacts of the NDD as well as the approach to evaluating the conceptual idea after the Proposed Project is constructed. It is also unclear how tidal restoration proposed under the Proposed Project will interact with ongoing EcoRestore projects located in the Delta [Sacramento-San Joaquin Delta] and existing North Bay Aqueduct operations. CDFW requests the EIR include modeling to demonstrate how the proposed conceptual plan for tidal restoration could influence hydrodynamics and beneficially affect routing and survival in the north Delta. CDFW also recommends the EIR contain a clear CMP that includes both mitigation for construction related impacts as well as operation related impacts to avoid deferred mitigation.	Please see response to comment 568-42 regarding siting and efficacy of tidal habitat mitigation, acreages, modeling basis, coordination with agencies, and impact analyses.
568-98	[ATT 1:] Appendix 3F- 3F.7.1 Performance Standards, page 3-74. The DEIR includes a discussion of performance standards that	Regarding the consideration of occupancy monitoring as a performance standard, please refer to Common Response 11, Terrestrial Biological Resources and Compensatory Mitigation Plan, which describe the adequacy of monitoring and performance standards.

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	will provide the basis for DWR's [Department of Water Resources] annual monitoring and evaluation of each mitigation site. The proposed performance standards rely on floristic, physical, and hydrologic components of the habitat without consideration of special-status species occupancy. CDFW [California Department of Fish and Wildlife] recommends the EIR consider occupancy as a performance standard and include occupancy monitoring to determine habitat use.	
568-99	[ATT 1:] Appendix 4B- 4B.1.2.4 Delta Simulation Model 2 (Residence Time), page 4B-17. Alternative 5 should include the assumption that diversions from the North Delta [Sacramento-San Joaquin Delta] are prioritized over south Delta diversions instead of including this analysis as a sensitivity analysis. This operation (within operational flexibility) demonstrates the maximum change from current conditions allowable by the proposed operating criteria. Additionally, we suggest that diversions from north Delta be prioritized in every month, not just December through June as done in this Appendix. July through November also needs to be evaluated with maximized north delta diversions to assess the impacts of CHABs, and other potential effects. CDFW [California Department of Fish and Wildlife] requests Alternative 5 is adjusted to prioritize the North Delta Diversion, in all months, to evaluate the maximum impact of the Proposed Project within the range of operational flexibility included in the Project Description.	Please see response to comment 568-19 Appendix 4B. As identified in that response, the shift to the north Delta diversion is presented as a scenario that would not be reasonably foreseeable. For purposes of the analysis presented in Appendix 4B, prioritization of north Delta diversions in all months of the year is not necessary for CEQA purposes. Demonstrating the maximum change as the comment suggests is not needed because it is not allowed by the project description. There are criteria informing how much the north Delta intakes can divert when they are operating as described in Chapter 3, Description of Proposed Project and Alternatives, and clarified in Common Response 3, Alternatives Development and Description. South Delta priority is part of the project description, which further limits when the north Delta intakes operate. Please see Common Response 3 for more information regarding why evaluation of "maximum operations" is not required or needed.

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568-100	[ATT 1:] Appendix 4C- 4C.3 Alternative Regulatory Scenario Description and Modeling Results, page 4C-4. This assumption (limiting the north delta diversion's use to only when Delta [Sacramento-San Joaquin Delta] outflow exceeds 29,000 cfs) is a significant change in operations, which makes it no longer directly comparable back to Alternative 5. The depiction of Project operations in the model should not be conservative or on the low end of the flexible operating range. The Project operations need to be modeled with the maximum allowed diversions, to assess the maximum impacts. CDFW [California Department of Fish and Wildlife] recommends removing the conservative assumption, limiting the north delta diversion to be used only when Delta Outflow exceeds 29,000 cfs, to better depict potential project impacts.	Appendix 4C, Alternate Regulatory Scenario Sensitivity Analysis, is meant to provide an analysis of how the project could operate under an alternate regulatory scenario. The limitation described in the appendix is a valid assumption related to operations under the potential conditions described in an alternate regulatory scenario. As described in the appendix, the process to incorporate new diversions into the updated Bay-Delta Plan is not yet developed. As described in the 2022 Memorandum of Understanding, the Voluntary Agreement flows are to be protected from diversion. However, DWR does not know the volume of water that may be protected from diversion and what the State Water Resources Control Board would require under a future Alternate Regulatory Scenario. Therefore, 29,200 cfs was used in Appendix 4C. The effects disclosed in Appendix 4C are dependent on the assumptions about future conditions under the Alternate Regulatory Scenario. Please refer to response to comment 568-99 and Common Response 3, Alternatives Development and Description, regarding why evaluation of “maximum operations” is neither required nor needed.
568-101	[ATT 1:] Chapter 5- General Comment, Multiple pages. The reservoir storage and flow data presented in Chapter 5, Surface Water, is displayed as long-term averages and/or monthly long-term averages. This potentially provides an incomplete understanding of the impacts of the project, as the most acute impacts to fish and wildlife occur under extreme conditions and not when conditions are approximating the average. Additionally, the DEIR does not contain a discussion of the more extreme changes to reservoir storage and flow that could occur under conditions with the project. This is problematic as the Calsim 3 results provided in Appendix 5A, Section B, show that even when looking at averaged flow data, conditions with the project, at times, reduce and/or alter flow on the Sacramento River, far north of the project's diversions,	The commenter suggests that presentation of reservoir storage and flow data in Chapter 5, Surface Water, provides an incomplete understanding of the impacts of the Delta Conveyance Project. Please see Common Response 9, Hydrologic Modeling and Approach, regarding best available tools, specifically the discussion on development, use, and limitations with respect to monthly timesteps and long-term averages. Please also see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for a discussion of the study area and why certain upstream areas were excluded from analyses (e.g., biological resources in the Sacramento River). As described in the Common Response and as explained in Chapter 12, Fish and Aquatic Resources, modeling outputs indicated that detailed analysis of upstream areas was not warranted due to the minimal expected changes between existing conditions and project alternatives.

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	during periods of time that could detrimentally affect fish and wildlife. No explanation is provided to account for these changes in flow, nor is any commentary provided acknowledging the potential impacts that could arise from these changes. CDFW recommends that the EIR provide an analysis that shows the variability in reservoir storage and flow that can be expected under conditions with the Proposed Project, when compared with existing conditions and the No Project Alternative. This includes providing data that show the greatest changes in reservoir storage and flow that might be expected under conditions with the Project. Additionally, detailed discussion should be provided to explain what is causing these changes, including information that details any changes to the operation of other reservoirs in the system.	Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, in the section titled North Delta Diversion Operational Criteria – Daily Patterning Procedure describes the approach used to map CalSim 3 monthly flow volumes to provide simulated daily flows. The section titled Model Limitations describes a number of limitations (e.g., extreme conditions) that inhibit the applicability of CalSim 3 results. With respect to impacts of the project on fish and wildlife, DWR has determined the presentation and display of information throughout the EIR is adequate for impact assessment purposes. Impact analyses were undertaken at the scale appropriate for a given analysis, with the key consideration being the resultant effects on flow relevant to potential species effects as opposed to simply diversions or remaining flow, and how the flow remaining in the river was reflected in biological outcomes of the project alternatives relative to existing conditions. For example, potential Delta outflow effects on longfin smelt were assessed on a several-month basis (December–May and March–May), reflecting differences in outflow between the project alternatives and existing conditions based on the proposed north Delta operational criteria; through-Delta juvenile Chinook salmon analyses resulting from Sacramento River flow effects (i.e., differences between the project alternatives and existing conditions in Sacramento River flow downstream of the north Delta intakes) as expressed in the Delta Passage Model and analysis based on Perry et al. were done on a daily time scale; analyses of effects to juvenile Chinook salmon rearing habitat bench inundation and through-Delta juvenile Chinook salmon survival from the Sacramento River Winter-Run Chinook Salmon Life Cycle Model’s enhanced Particle Tracking Model (ePTM) were done on a 15-minute time scale, reflecting differences between the project alternatives and existing conditions in water levels as a result of operations of the north Delta intakes; and analysis of potential effects of sweeping and

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568-102	[ATT 1:] Chapter 5- 5.3.1 Methods for Analysis, page 5-11. The DEIR's analysis of changes to surface water does not include a quantitative assessment of potential cumulative impacts that could arise should reasonably foreseeable future projects, such as Sites Reservoir, the Los Vaqueros Expansion Project, and Harvest Water Project be built and operated ahead of DCP [Delta Conveyance Project]. Sites Reservoir could significantly alter flows on the Sacramento River, during the same time periods as DCP. Sites Reservoir, the Los Vaqueros Expansion Project, and Harvest Water Project could contribute to a reduction in Delta [Sacramento-San Joaquin Delta] outflow, during periods of time that DCP also reduces Delta outflow. Additionally, these projects could cumulatively have the most significant changes to surface water, during the driest years, when impacts to fish and wildlife are likely to be the most severe. CDFW [California Department of Fish and Wildlife] recommends that the EIR provide a quantitative assessment of the cumulative effects to surface water, along with the corresponding impacts to fish and wildlife, of having reasonably foreseeable future projects, such as Sites Reservoir, the Los Vaqueros Expansion Project, and Harvest Water Project operate concurrently with DCP.	approach velocity on Chinook salmon and delta smelt essentially represented instantaneous effects. The Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, section titled Cumulative Impact Analysis provides a detailed discussion of the approach to analyzing cumulative impacts consistent with CEQA requirements. At the end of this appendix, DWR has provided a list of the programs, projects, and policies that DWR determined was adequate for consideration in the EIR. The projects that were mentioned, Sites Reservoir, Los Vaqueros Expansion, and Harvest Water Project were all considered as part of the cumulative analysis. Please see the table titled Descriptions of Programs, Projects, and Policies Considered for Existing Conditions, No Project Alternative, and Cumulative Impact Analysis in Appendix 3C for a comprehensive list of projects that were included in the cumulative analysis. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding additional information on the cumulative impact assessment.
568-103	[ATT 1:], Chapter 5- Changes to Sacramento River Basin Flows, page 5-29. Graphical comparisons showing percent changes in long-term monthly average flows under the project alternatives relative	Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, Attachment 5, CalSim 3 Model Results for the No Project Alternative and Alternatives at 2040, provides a comprehensive look at each of the selected reaches for comparison purposes (both in graphical and tabular format). For example, Attachment

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	to existing conditions are provided. However, it would also be useful to see a graphical comparison of the alternatives relative to the No Project Alternative, to compare potential impacts of the alternatives against future conditions without the project. Additionally, it is difficult to visually discern differences between the different alternatives, as they are displayed as overlapping lines on the same graphs. While the percent differences between the alternatives often only vary slightly, there are times when under some alternatives flows increase at [a] given location, where for other alternatives they decrease. These differences between the alternatives occur at times that could have an impact on fish and wildlife. Thus, it would be helpful to be able to compare the differences better visually between the alternatives. CDFW [California Department of Fish and Wildlife] recommends that graphical comparisons for the long-term monthly average flows under the project alternatives relative to the No Project Alternative be included in the chapter. Additionally, CDFW recommends revising the included graphical comparisons for long-term monthly average flow under the project alternatives relative to existing conditions, so that visually the differences between the alternatives can be compared more easily.	5 includes probability of exceedance tables (monthly) for each of the project alternatives and No Project Alternative at the 2040 timeframe, for comparative purposes. The requested comparison of Project Alternatives under Existing Conditions with the No Project Alternative at the 2040 timeframe is not directly done because it would not account for differences due to climate change, sea level rise (and other assumed updates outside of the project), and would misleadingly attribute differences (or similarities) entirely to the Delta Conveyance Project, rather than to system changes assumed at 2040 in addition to the Delta Conveyance Project. The figures referenced in the comment are provided in PDF format and can be expanded using the zoom function to distinguish between lines on the respective figures. Additional illustration of CalSim 3 modeling outputs available in technical appendices is not necessary for inclusion in the EIR.
568-104	[ATT 1:] Appendix 5A, Section B- Attachment 5- General Comment, Multiple pages. The data provided in Appendix 5A, Section B indicates that under with project conditions, flows on the Sacramento River at various locations upstream of the project diversions often decrease when compared with the No Project Alternative. For example, Table 5A-B5.2.5.4-D, shows averaged monthly flows,	The comment notes there are some negative differences in modeled flows at 2040, but these differences are not substantial; see also the figure titled Sacramento River at Wilkins Slough Monthly Flow (C_SAC120), Probability of Exceedance for No Project Alternatives, October to March and the figure titled Sacramento River at Wilkins Slough Monthly Flow (C_SAC120), Probability of Exceedance for No Project Alternatives, April to September in the same section cited in the comment (i.e., Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations

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	by water year type, at Wilkins Slough, under Alternative 5 (2040) minus the No Project Alternative. Flows under the Proposed Project are shown to decrease, at times, in all water year types, when compared to the No Project Alternative (2040). Of particular concern are decreases shown during below normal, dry, and critically dry years that occur at various times in the months of February through September. These decreases in flow could detrimentally affect fish and wildlife in several ways, including decreasing outmigrating juvenile salmonid survival, reducing juvenile salmonid rearing habitat, reducing floodplain inundation, and increasing water temperatures. Additionally, the DEIR does not include a quantitative assessment of reasonably foreseeable future water storage projects, such as Sites Reservoir, in its analysis, as this project would also be reducing flows on the Sacramento River during the same period. CDFW recommends including an evaluation and discussion of the causes of the decreases in flow on the Sacramento River above the project's diversions. The EIR should closely assess the project's potential impacts to fish and wildlife during the times, when under with project conditions, changes to flow on the Sacramento River are the greatest. The EIR should also consider in its analysis the cumulative impact to flow on the Sacramento River that might occur if reasonably foreseeable future projects like Sites Reservoir operate concurrently. The detailed discussion should address how these impacts are being captured in the analysis and how they are being mitigated.	Modeling, Attachment 5, CalSim 3 Model Results for No Project Alternative and Alternatives at 2040). Please also see the discussion of upstream areas in Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues. With respect to cumulative impacts, please see response to comment 568-13.
568-105	[ATT 1:] Appendix 5A, Section B- Attachment 5- General Comment, Multiple pages.	Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for information about the analysis of upstream aquatic species in the Feather River, Sacramento

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	The data provided in Appendix 5A, Section B indicates that under with-Project conditions, flows on the Sacramento River at various locations upstream of the Proposed Project diversions, as well as the Feather River at various locations upstream of the Proposed Project diversions, often decrease when compared with the No Project Alternative (2040). For example, Table 5A-B5.2.5.5-D, shows averaged monthly flows, by water year type, at Wilkins Slough, under the Proposed Project (2040) minus the No Project Alternative (2040). Flows are shown to decrease at times, in all water year types under with Project conditions. Of particular concern are decreases shown during below normal, dry, and critical water years that occur at various times in the months of February through September. Table 5A-B5.2.14.5-D shows averaged monthly flows, by water year type, on the Feather River below Thermalito Afterbay Release, under the Proposed Project (2040) minus the No Project Alternative (2040). This table shows monthly averaged flows decreasing, under with-Project conditions, in the months of February through April and June, in dry and critical water years. Decreases in flow could detrimentally affect fish and wildlife by decreasing out-migrating juvenile salmonid survival, reducing juvenile salmonid rearing habitat, reducing the frequency and inundation of floodplain habitat, and increasing water temperatures. Additionally, because the data are presented as monthly averaged flows, it is likely that the more pronounced decreases in flow, along with their resulting impacts to fish and wildlife are not being adequately assessed or mitigated. This is further compounded by the fact that the DEIR does not include reasonably foreseeable future water storage projects, such as Sites Reservoir, which would also be reducing flows on the	River, and other upstream waterways, including an analysis of the future project compared with the No Project Alternative in 2040. Please note that reasonably foreseeable future water storage projects, such as Sites Reservoir Project, are included in the cumulative effects analysis. Please see Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, as well as Common Response 1 for more information.

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	Sacramento River during the same period. CDFW recommends including an evaluation and discussion of the causes of the modeled decreases in flow on the Sacramento and Feather rivers above the Proposed Project's diversions, including an explanation of why those impacts may or may not be limited by existing requirements. Specifically, the EIR should assess the Proposed Project's potential impacts to fish and wildlife during the times when changes to flow on the Sacramento River are the greatest under with-Project conditions. This analysis should also be completed for impacts to flows on the Feather River with assessment of the Proposed Project's potential impacts to salmonids when changes to flow on the Feather River are the greatest.	
568-106	[ATT 1:] Appendix 5A, Section B- B.10.1 Climate Change Under Existing Conditions, page B-65. The DEIR states "while there has been no obvious trend in total water year runoff into the Sacramento and San Joaquin Rivers, there have been changes in the timing of that runoff. The fraction of snowmelt runoff between April and July relative to total year round water runoff has declined over the past century" (p.B-65). This statement acknowledges that the existing conditions model is not depicting current hydrology nor hydrology that is expected to occur. Without needing climate or rainfall-runoff modeling, DWR [Department of Water Resources] could modify the historical hydrology to reflect current conditions with respect to fraction of runoff occurring April to July (snowmelt). The snowpack ratio could be de-trended to current conditions, without changing annual runoff volumes (snowmelt runoff would shift	Please see Common Response 9, Hydrologic Modeling and Approach, regarding best available tools, modeled representation of future conditions and climate change, modeled representation of CEQA baseline existing condition, climate change assumptions as input into hydrologic model. While the comment refers to a specific model limitation described in the section titled Climate Change Under Existing Conditions in Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, there are six additional topics described under model limitations that collectively need to be considered when applying and interpreting model results. The recommendations made in this comment would neither improve the overall use of the model as it was developed for planning-level analysis, nor change the impact conclusions disclosed in the EIR. The hydrologic modeling used to support the environmental impact analyses uses reasonably foreseeable climate change and sea level rise projections as supported by substantial evidence in the administrative record. The adjustments to the modeling inputs suggested by the commentor are not of the magnitude that would change the results

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	to Oct-March runoff). Little to no adjustments would be made to recent years. This could be done as sensitivity analysis or used for the primary CEQA [California Environmental Quality Act] analysis and would not be much different from using 2020-level land use, groundwater, or level of demand as the baseline.	of the environmental impact analysis, which is supported, in part, by the hydrologic modeling results. Appendix 30A, CalSim 3 Results Sensitivity to 2040 Climate Change and Sea Level Projections, provides an assessment of two additional climate change 2040 scenarios (2040 Central Tendency with 0.5-foot sea level rise and 2040 Median with 1.8-foot sea level rise). The analysis of the two scenarios shows a shift in runoff occurring earlier during the wet season and warmer temperatures. The assessment of the two scenarios indicated that despite this shift in the timing of runoff, there would be no substantial change to the impact conclusions provided in EIR.
568-107	[ATT 1:] Appendix 5A, Section B- Table 5AB5.2.3.5- D, Sacramento River at Keswick Monthly Flow, Difference in Monthly Flow. (Revised Public Draft Appendix 5A- Attachment 5), page B-107. The data presented in revised Appendix 5A, Section B show that during periods when salmonids are spawning in the Sacramento River, flows at times, under with project conditions, have the potential to sharply differ in volume from one month to the next. For example, Table 5A-B5.2.3.5-D, shows averaged monthly flows by water year type at Keswick, under Alternative 5 (2040) minus the No Project Alternative (2040). Flows under Alternative 5 would, on average, in critically dry years, be 232 cfs [cubic feet per second] higher in January and 789 cfs lower in February, when compared with conditions under the No Project Alternative. Sharp changes in flow from one month to the next have the potential to increase the risk of redd dewatering, particularly in drier years. The degree of risk is difficult to assess as the data is presented as monthly average flows. However, the data as presented indicates that there is the potential that Project operations could, at times, result in redd [gravel salmon nest] dewatering, particularly in drier years.	Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for information about the analysis of upstream aquatic species, including an analysis of the future project compared with the No Project Alternative in 2040. In addition, during project implementation, operators would adhere to ramping rate standards and objectives to minimize redd dewatering risk, consistent with existing or any future regulatory requirements.

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	CDFW recommends the EIR assess the potential risk of redd dewatering on the Sacramento River considering the proposed Project's operations and any other requirements currently in place.	
568-108	[ATT 1:] Appendix 5A, Section B- Attachment 5, page B-185. The data provided for Fremont Weir spills indicate that there is the potential for spills to the Yolo Bypass to decrease, particularly in the January-February period, under with project conditions. The EIR should analyze the project's effect on spills to the Yolo Bypass including the cumulative impacts of reasonably foreseeable future projects.	CalSim modeling indicated limited differences between project alternatives and existing conditions. For example, the CalSim 3 model outputs indicate that, on average across the full simulation period, flows over Fremont Weir during January and February would be 10–23 cfs lower under Alternative 5 relative to existing conditions. This equates to <0.2% less. Split out by water year type, the largest reduction is 197 cfs in January of above normal water years. This equates to <2% less than existing conditions. Such differences under Alternative 5 were deemed not significant to aquatic species due to their small magnitude. Therefore, consistent with language in the EIR section titled, Evaluation of Operations and Maintenance, no further analysis was conducted at this location upstream of the Delta.
568-109	[ATT 1:] Appendix 5A, Section B- Attachment 5- General Comment, Multiple pages. The DEIR does not provide any data or analysis of the Project's potential impact to the Sutter Bypass. Sutter Bypass receives water from Tisdale and Colusa Weirs, which overtop, during high flow events on the Sacramento River. Under with project conditions, modelling indicates that flows on the Sacramento River are, at times, reduced upstream of the Project, during months when spills to the Sutter Bypass are likely to occur. This has the potential to reduce the occurrence and/or volume of spills to the Sutter Bypass, which could detrimentally impact fish and wildlife. CDFW recommends that the EIR analyze potential changes to the occurrence and volume of spills to the Sutter Bypass, along	An examination of CalSim flow outputs for the Sacramento River above Bend Bridge and at Wilkins Slough (Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, Attachment 3, CalSim 3 Model Results for Existing Condition and Alternatives at 2020, and Attachment 5, CalSim 3 Model Results for No Project Alternative and Alternatives at 2040) indicates that there would be very little difference between the baseline and alternatives. Therefore, there would be very little difference between the baseline and alternatives in spills into Sutter Bypass from Tisdale and Colusa Weirs and, as a result, minimal impacts to fish and wildlife. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, and Common Response 3, Alternatives Development and Description, for more information about the commitment by DWR to not change operational criteria in upstream reservoirs, which leads to minimal differences in modeled flows.

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	with potential corresponding impacts to fish and wildlife, both project-specific, and cumulatively with other reasonably foreseeable projects or activities.	
568-110	[ATT 1:] Appendix 5A, Section D- Figure 5AD1.1.7 through Figure 5A-D1.1.18, Figure 5A-D1.1.37-A through Figure 5A-D1.1.37-D, and Figure 5AD1.1.38 through Figure 5A-D1.1.49, pages D-20 - D- 26 and D- 45 - D- 48. Multiple sets of figures were used to show the same model results. Figure 5A-D1.1.7 through Figure 5AD1.1.18 show the same results as Figure 5A-D1.1.37- A through Figure 5A-D1.1.37-D, with only the x-axis reversed, and it is not clear whether these figures are for the full simulation period or a specific water year type. In addition, the information in these figures is included in Figure 5A-D1.1.38 through Figure 5AD1.1.49. The comment also applies to figures for other model output locations. CDFW requests re-organization of the figures to present model results concisely.	A detailed discussion regarding the use of CalSim 3 outputs that were downscaled to daily time series and then used to prescribe HEC5's storage and flow data for use in the HEC5Q model is provided in Attachment 1, HEC-5Q Model Results for Existing Condition and Alternatives at 2020, of Appendix 5A, Modeling Technical Appendix, Section D, Water Temperature; see specifically the section titled Overview of Reservoir and River Temperature Modeling Using HEC5Q in Section D of Appendix 5A. The two sets of figures that illustrate modeling results for the American River above confluence are based on the same set of output data from HEC5Q—one for each month reflecting the full CalSim 3 simulation. The third set of figures (e.g., the figure titled American River Above Confluence, Exceedance Probabilities for Monthly Average Temperature [degree Fahrenheit] for November, Existing Condition in Appendix 5A, Section D, Attachment 1, HEC-5Q Model Results for Existing Condition and Alternatives for 2020) includes six illustrations—one for the full simulation period by month and five plots representing simulation outputs for each water year type. This explanation applies to similar sets of figures for the Trinity-Sacramento River HEC5Q modeling data. DWR has considered the request to reorganize figures, but determined it would not change the presentation or interpretation of model results in manner that would improve the utility of this information.
568-111	[ATT 1:] Appendix 5A, Section D- D.2.2.4 Simulation of Selective Withdrawal, page D-7. The DEIR states the location of temperature compliance is at	The comment referenced a page in the section titled Simulation of Selective Withdrawal in Appendix 5A, Modeling Technical Appendix, Section D, Water Temperature, regarding temperature compliance in the Sacramento River below Shasta Dam. This section states "A spreadsheet

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	the Red Bluff Diversion Dam as required in Water Board Order 90-5. However, an approved annual Temperature Management Plan may designate a different location for temperature compliance, which may be at Clear Creek or some other locations. CDFW recommends that the EIR acknowledge that the location for temperature compliance can be set based on Shasta storage volume and the Biological Opinion in place which includes Shasta reservoir operations.	tool is then used to facilitate daily scale temperature targeting for each tier. The spreadsheet calculates the warming from Shasta Dam to the Sacramento River below Clear Creek, which is the location for temperature compliance.” DWR acknowledges that Reclamation’s 2022 Temperature Management Plan subject to Water Board Order 90-5 identifies Red Bluff Diversion Dam as the temperature compliance point and that Reclamation is required to identify an alternate compliance location if necessary.
568-112	[ATT 1:] Appendix 5A, Section D- Figures 5AD1.1.7 through 5A-D1.1.18 and Figures 5A-D1.1.37-A through 5AD1.1.37- D, page D-20 - D- 26 and D- 45 - D- 48. Figures 5A-D1.1.7 through 5A-D1.1.18 show the same average monthly water temperature results for the American River above the confluence as Figures 5A-D1.1.37-A through 5A-D1.1.37-D. It is not clear whether these sets of figures are for the full simulation period or a specific water year type. CDFW [California Department of Fish and Wildlife] recommends model results are confirmed and corrected where appropriate in all tables and figures presented.	Appendix 5A, Modeling Technical Appendix, Section D, Water Temperature Modeling Results, Attachment 1, HEC-5Q Model Results for Existing Condition and Alternatives for 2020, specifically the section in Section D titled Overview of Reservoir and River Temperature Modeling Using HEC5Q, provides a detailed discussion regarding the use of CalSim 3 outputs that were downscaled to daily time series and then used to prescribe HEC5’s storage and flow data for use in the HEC5Q model. The two sets of figures that illustrate modeling results for the American River above the confluence with the Sacramento River are based on the same set of output data from HEC5Q; one for each month reflecting the full CalSim 3 simulation. The third set of figures (e.g., the figure titled American River Above Confluence, Exceedance Probabilities for Monthly Average Temperature [degree Fahrenheit] for October, Existing Condition) includes 6 illustrations; one for the full simulation period by month, and five plots representing simulation outputs for each water year type.
568-113	[ATT 1:] Appendix 5A, Section D- Figure 5AD2.14.2 through Figure 5A-D2.14.5, pages D-785 - D-787. There appears to be an error in Figure 5A-D2.14.2 through 5A-D2.14.5 Sacramento River Below Keswick, Monthly Average Temperature (degree Fahrenheit). The October temperature	Changes to the following figures in Appendix 5A, Modeling Technical Appendix, Section D, Water Temperature Modeling Results, Attachment 2, HEC-5Q Model Results for No Project Alternative and Alternatives at 2040, have been made to correct data represented for the No Project Alternative: Sacramento River Below Keswick, Monthly Average Temperature (degree Fahrenheit) for Wet Water Years, No Project

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	for the No Project Alternative is lower than the Jan-Feb temperature. It looks like the curve for the No Project Alternative was shifted. All other model output locations have the same issue. CDFW [California Department of Fish and Wildlife] recommends revising these figures and updating them with corrected data for the No Project Alternative as needed.	Alternatives; Sacramento River Below Keswick, Monthly Average Temperature (degree Fahrenheit) for Above Normal Water Years, No Project Alternatives; Sacramento River Below Keswick, Monthly Average Temperature (degree Fahrenheit) for Below Normal Water Years, No Project Alternatives; Sacramento River Below Keswick, Monthly Average Temperature (degree Fahrenheit) for Dry Water Years, No Project Alternatives. Revisions to these figures do not result in a change to the analysis, simply a correction of the illustrations presented. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-114	[ATT 1:] Appendix 5A, Section D- Table 5AD2.29.1- B Trinity River Above Lewiston, Monthly Average Temperature, No Project Alternative, page D-1655. Table 5A-D2.29.1-B shows that at Trinity River above Lewiston, the modeled No Project Alternative monthly average temperature is lower in May than in February for the full simulation period, wet water years, below normal and dry water years. The modeled average temperature is lower in May than in January for wet water years. In addition, the modeled average temperature is lower in May than in March-April for all water years. It is not clear how the modeled May average temperature can be so low. CDFW recommends that the EIR review and if necessary, correct the model results reported in this table. If the numbers in this table match model results, the model assumptions and input data should be re-evaluated and fully described.	A review of the existing conditions data for Trinity River flow and outflow temperature by average water year type confirms model results. By average water year type, May has the highest release volumes when compared to the January through April period (snowmelt-driven). This is contributing to the lower monthly average temperatures in May compared to the January through April period. CalSim 3 releases water from Trinity Dam to meet the requirements of the 2000 Trinity River Restoration Program Record of Decision. Simulation of large releases of water in May are shown in the table titled Trinity River below Lewiston Monthly Flow (C_TRN111), Probability of Exceedance for No Project Alternatives, April to September, which is found in Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, Attachment 5, CalSim 3 Model Results for No Project Alternative and Alternatives at 2040. Lower simulated water temperatures in for the Trinity River in May are consistent with previous analysis presented by Reclamation (Bureau of Reclamation 2019:Att. 3-4).

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568-115	[ATT 1:] Appendix 5A, Section E- Model Structure, page E-2. SALMOD only calculates juvenile production each year as the cumulative survival of a predetermined set of eggs through the smolt life stage. There are several sources of mortality during these early life stages that vary based on flow and water temperature. SALMOD is not a true-life cycle model because it treats production results of each year independently such that outcomes do not accumulate year over year. CDFW recommends using full life cycle models to evaluate impacts on listed salmonids.	Consistent with the comment's recommendation, the EIR includes analysis with three life cycle models (IOS, OBAN, and Sacramento River Winter-Run Chinook Salmon Life Cycle Model).
568-116	[ATT 1:], Appendix 5A, Section E- Base Mortality, page E-4. Recent observations of thiamine deficiency in winter and spring-run Chinook salmon have led to significant mortality. CDFW recommends reviewing and potentially modifying the base mortality calculations to incorporate the most recent estimates applied to winter- and spring-run Chinook salmon.	The only inputs that would affect SALMOD outputs are flow and water temperature. Model results indicate that there are minimal differences in flow and water temperatures between the baseline and alternatives. Therefore, regardless of base mortality values, there would be minimal differences in SALMOD outputs between the baseline and alternatives. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, and Common Response 3, Alternatives Development and Description, for more information about the commitment by DWR to not change operational criteria in upstream reservoirs and DWR not having or seeking the authority to change CVP operations, which leads to minimal differences in modeled flows and water temperatures
568-117	[ATT 1:] Appendix 5A, Section E- Modeled Salmon Species, page E-7. Between Keswick and RBDD, during the spring, all four runs do occupy the space above RBDD. Although seasonal timing may indicate minimal overlap in competing life histories, distinct modeling runs may not be accurately characterizing the	The current version of the SALMOD model does not have the ability to run multiple races of Chinook salmon simultaneously. Therefore, the recommendation in the comment cannot be met. Regardless, the SALMOD model was run to corroborate our findings that there would be minimal effects to Sacramento River aquatic species upstream of the Delta.

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	available habitat, for example, spring-run emigrating from natal tributaries will overlap with rearing and emigrating fall run. Not including fall-run juveniles in the spring-run modeling runs may provide a false estimate of available habitat to spring-run. CDFW recommends running the model with multiple Chinook runs combined.	
568-118	[ATT 1:] Appendix 5A, Section EComputational Units, page E-10. Does the SALMOD model still assume operations for RBDD? In 2013 the dam was decommissioned, and the gates were held in the open position. The inundation pool (Lake Red Bluff) previously created by the dam no longer exists in the previous form. CDFW recommends updating this component to existing conditions if not already applied.	CalSim 3 model assumes that the gates associated with the Red Bluff Diversion Dam (decommissioned in 2013) are always open, therefore outputs from the model used as inputs to the SALMOD model have the same assumption for all modeled scenarios.
568-119	[ATT 1:] Chapter 6-6.3.2.1 No Project Alternative, page 6-48. If there are extended outages at the Delta [Sacramento-San Joaquin Delta] diversion facilities in the event of an earthquake and levee failure, it is unclear to what extent alternate supplies may be insufficient and how much of impact that will have on the delivery reliability. CDFW recommends providing further details on the likelihood of earthquake and levee failure risks and resulting impacts to water supply.	Chapter 3, Description of the Proposed Project and Alternatives, describes how the project would be designed to accommodate climate change and sea level rise, including improvements to project-related levees. The Delta Conveyance Design and Construction Authority Intake Flood Management technical memorandum and Levee Vulnerability Assessment technical memorandum (Delta Conveyance Design and Construction Authority 2022d, 2022i) assessed impacts on urban and nonurban Delta levees during the construction and postconstruction phases of the project. Please refer to Chapter 2, Purpose and Project Objectives, regarding the fundamental purpose of the Delta Conveyance Project which is to restore and protect the reliability of State Water Project deliveries. Please also refer to Common Response 1, CEQA Process, General Approach to analysis, and Other Environmental Review Issues, regarding the scope of the project

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		objectives, seismic standards, and the threat of seismic ground shaking to existing Delta levees. Chapter 7, Flood Protection, and Chapter 10, Geology and Seismicity, provide assessments of impacts that could result from construction, operation and maintenance of the Project on flood protection and seismicity. The analysis in Chapter 7 concludes that the construction and operation of the Delta Conveyance Project would not result in reduction in flood protection provided by the existing levee system. Project impacts related to seismicity were also determined to be less than significant.
568-120	[ATT 1:] Chapter 6-6.3.2.1 No Project Alternative, page 6-48. The DEIR states SGMA may limit groundwater pumping which would increase pressure on surface water supplies, but it does not attempt to quantify a level of impact reduced groundwater pumping might have on surface water supplies or demand. Additionally, reduced groundwater pumping in some basins may positively affect surface flows because of groundwater basin recovery and surface water - groundwater interactions. CDFW recommends the EIR further elaborate on the potential cumulative impact of the Proposed Project in combination with SGMA.	Please refer to Common Response 8, Relationship to Other Plans, Projects, Policies and Programs, which addresses how Groundwater Sustainability Plans were considered in the EIR.
568-121	[ATT 1:] Chapter 6-6.3.2.2 Project Alternatives, page 6-48. The DEIR states the Project will provide water supply reliability by adding additional diversions that can be used in the event of a levee failure in the Delta [Sacramento-San Joaquin Delta] - which otherwise may cause diversions in the south Delta to cease. However, the DEIR does not speak to reliability improvements for the whole system. Therefore, it is unclear if the Project improves reliability during a seismic event to only	Please refer to Chapter 2, Purpose and Project Objectives, for a description of the seismic resiliency objective. The purpose of the Delta Conveyance Project is to restore and protect the reliability of the State Water Project; the seismic resiliency objective is part of this fundamental purpose. The objective focuses on providing seismic resiliency for the State Water Project. See Appendix 3A, Identification of Water Conveyance Alternatives, for a description of the objective screening criteria used to select alternatives. The proposed project and alternatives were found to meet the seismic

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	apply some regions, including south of Delta, or to the entire system. CDFW requests that the EIR add further explanation as to whether the reliability improvements will be for the whole system or only limited to some portion(s) of the system. Further information should be provided linking specific areas and facilities that would benefit to Project construction and/or operational components.	resiliency and operational flexibility objectives because of the operational redundancy an alternate northern diversion location provides should a seismic event affect operation of the existing south Delta diversion facilities. System-wide reliability improvements such as large-scale levees rehabilitation or other alternatives evaluated in Appendix 3A but not ultimately retained (because, for instance, they did not necessarily meet all or most project objectives) are beyond the scope of the Delta Conveyance Project and the impact analyses presented in this EIR. The alternatives analyzed in the EIR were determined to reasonably meet most of the project objectives, including for seismic resiliency and to reduce significant environmental impacts. Please also refer to Common Response 3, Alternatives Development and Description, for a description of alternatives screening and approach to the alternatives description. Please note that the proposed Delta Conveyance Project is just one part of a diverse portfolio of strategies that would assist in meeting California's water management needs and would not preclude other measures that may be taken by DWR or other entities consistent with the Delta Reform Act or as part of the Water Resilience Portfolio.
568-122	[Att 1:], Chapter 8 - 8.0 Summary Comparison of Alternatives, page 8-1. Issue: The DEIR in its assessment of potential groundwater related impacts did not include the cumulative effects of Project operations a quantitative assessment of combined operations of reasonably foreseeable future projects, such as Sites Reservoir, the Los Vaqueros Expansion Project, and the Harvest Water Project in combination with the Proposed Project. CDFW [California Department of Fish and Wildlife] recommends that the EIR include a quantitative assessment of the cumulative effects of the Project on groundwater along with operations of reasonably foreseeable future projects, such as Sites Reservoir, the Los Vaqueros Expansion Project, and	Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for a discussion of the qualitative nature of the Cumulative Impact Assessment. There is no requirement in CEQA to prepare a quantitative cumulative analysis. Please refer to Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions, regarding projects that are considered part of the cumulative impact analysis. Cumulative analysis of impacts on groundwater resources is described in the Cumulative Analysis section of Chapter 8, Groundwater. The Chapter 8 table titled Cumulative Impacts on Groundwater from Plans, Policies, and Programs lists projects considered for cumulative effects on groundwater. The Harvest Water Project and the Los Vaqueros Reservoir Expansion Project are included on this table. The North-of-Delta Offstream Storage Investigation, the

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	Harvest Water Project when analyzing potential groundwater-related impacts.	predecessor project to Sites Reservoir, is also included in the Chapter 8 cumulative projects table. These types of projects and others listed in the table describe the development of surface water supplies or other water supplies that would offset groundwater use and improve the reliability of local water supplies and SWP/CVP deliveries, thereby reducing stresses and demands on the local groundwater systems. A complete list of projects is included in Appendix 8C, Groundwater 2040 Analysis.
568-123	[Att 1:] Chapter 8 - 8.1.3 Delta Region Groundwater; Figure 8-2, page 8-7. Issue: As shown in Figure 8-2, in addition to the Solano, South American, Tracy, Eastern San Joaquin, and Cosumnes Subbasins, portions of the Delta [Sacramento-San Joaquin Delta] are underlain by the Yolo and East Contra Costa Subbasins. CDFW [California Department of Fish and Wildlife] recommends that the EIR identify each subbasin which underlies a portion of the Legal Delta as depicted in Figure 8-2. The subsequent discussions of groundwater quality (Section 8.1.3.2) and groundwater production and use (8.1.3.3) should discuss existing conditions in these subbasins.	Each subbasin is identified in the map titled Groundwater Basins underlying the Delta Region in Chapter 8, Groundwater. The existing conditions discussion in Chapter 8 provides descriptions of the quality of water present within each groundwater subbasin evaluated in the EIR. This section of the EIR also discusses the groundwater hydrogeology in the Delta study area, including information at the subbasin level. The EIR fully discloses the construction and operations impacts of the proposed project and alternatives on groundwater resources within the Delta study area. The assessment methods used to determine the construction and operational impacts of the project on groundwater subbasins are provided in the Methods for Analysis section of Chapter 8. As noted in this section of the EIR, the groundwater subbasins identified in the comment were included in the domain of the DeltaGW Model used in the in groundwater impact assessment.
568-124	[Att 1:] Chapter 8 - 8.3.1 Methods for Analysis, page 8-13. Issue: The DEIR does not assess impacts on Groundwater Dependent Ecosystems (GDEs) within the study area and does not consider the sustainable management criteria thresholds that are identified in the Groundwater Sustainability Plans (GSPs) for the subbasins that underlie the study area. Potential declines in groundwater levels and altered interconnected surface water flows have the potential to reduce available shallow groundwater or disconnect GDEs from groundwater resources. Temporary disruption can stress GDEs, and sustained absence of shallow groundwater may lead to	Please see Common Response 8, Relationship to Other Plans, Projects, Policies and Programs, regarding a description and discussion of GDEs in the context of Sustainable Groundwater Management Act (SGMA). Groundwater-dependent ecosystems (GDEs) are not discussed in Chapter 8 because substantial changes in interconnected surface waters and groundwater elevation would not occur. The EIR addresses temporary and permanent impacts to GDEs as a result of other potential impact mechanisms by identifying and evaluating potential impacts to all natural systems and habitat supported by groundwater that could be impacted by the project in Chapter 13, Terrestrial Biological Resources. For example, GDEs including tidal and nontidal perennial aquatic, tidal and nontidal

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	permanent GDE degradation or mortality. CDFW [California Department of Fish and Wildlife] recommends that the EIR identify GDEs within the study area and assess the potential impacts to GDEs because of Project construction and operation that may result from changes in groundwater levels and interconnected surface waters.	freshwater emergent wetland, tidal brackish emergent marsh, valley/foothill riparian, alkaline seasonal wetland and vernal pool complex are evaluated in Impact BIO-1 through Impact BIO-8 in Chapter 13. Thresholds of significance for these and other sensitive resources are listed in the section titled Thresholds of Significance. Mitigation and avoidance and minimization measures are allocated in several sections of the EIR. Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, describes the mitigation that would be implemented to offset impacts on these land cover types. Attachment 3F-1, Compensatory Mitigation Design Parameters, provides the design commitments and guidelines for compensatory mitigation of impacts. Avoidance and minimization measures that would apply during construction of the project (including but not limited to construction of the compensatory mitigation sites themselves) are contained in Appendix 3B, Environmental Commitments and Best Management Practices.
568-125	[Att 1:] Chapter 8 - 8.3.1.2 Approach for Analysis, page 8-16. Issue: Limited groundwater-related impacts, within the DeltaGW Model domain, is not necessarily evidence that Project operations will have little to no groundwater-related impacts outside of the model domain. Project operations have different effects outside of the model domain and the groundwater basins in those areas are not the same as those inside of the model domain. Project operations alter surface water flows outside of the DeltaGW Model domain and there is the potential that those alterations will have groundwater-related impacts. CDFW [California Department of Fish and Wildlife] recommends that the EIR extend its quantitative analysis of potential groundwater related impacts to encompass all areas where Project operations have the potential to alter conditions that could result in groundwater-related impacts.	Potential groundwater impacts upstream of the Delta region and in the south-of-Delta SWP service areas are described in Chapter 8, Groundwater, in the section titled Analysis of Groundwater Conditions Upstream of the Delta Region and the section titled Analysis of Groundwater Conditions in South-of-Delta SWP Service Areas. Based on surface water analysis, upstream reservoir storage and river flows do not substantially change between the project alternatives and the existing conditions when operation of the project alternatives are simulated. Therefore, impacts to groundwater in those regions are not expected. Average annual SWP deliveries would increase from existing conditions under all project alternatives for the long-term average, dry years, and critical water years. SWP Table A and Article 56 deliveries are expected to increase under the long-term average, dry years, and critical water years compared to deliveries under existing conditions.

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		Please refer to Common Response 10, Surface Water Quality and Groundwater Resources, regarding the suitability of the DeltaGW model for analysis of impacts on groundwater.
568-126	[Att 1:] Chapter 8 - 8.3.1.2 Approach for Analysis, page 8-19. Issue: The DEIR identifies thresholds for significance that include changes in stream gains or losses in interconnected stream reaches, changes in groundwater elevation, reduction in groundwater levels affecting supply wells, changes to long-term groundwater storage, and degradation of groundwater quality. The DEIR does not consider the sustainable management criteria thresholds that are identified in the groundwater sustainability plans (GSPs) for the subbasins that underlie the study area. In the GSPs for basins in critical overdraft and the remaining high and medium priority subbasins, submitted to DWR [Department of Water Resources] in January 2020 and January 2022, respectively, the plans have identified sustainable management criteria (SMC) thresholds related to changes to groundwater levels, groundwater storage, interconnected surface waters, and groundwater quality that would constitute locally determined significant and unreasonable, and undesirable results for all beneficial users of groundwater. The DEIR does not consider these locally defined significance criteria in its definition thresholds of significance for Project impacts. It is unclear how the study area GSPs' SMCs relate or compare to the DEIR's thresholds of significance and whether there is the potential for Project operations to limit groundwater sustainability agencies' ability to meet their subbasin groundwater sustainability goals as defined in GSPs. CDFW [California Department of Fish and Wildlife] recommends the EIR include a discussion of the relevant	Please see Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, regarding California's Sustainable Groundwater Management Act (SGMA) and how groundwater sustainability plans (GSPs) and their thresholds and sustainable management criteria were considered.

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	sustainable management criteria identified in GSPs submitted to DWR for the subbasins that underlie the study area. The EIR should include an assessment that demonstrates that the Project's thresholds for significance are at least as protective of groundwater users, including environmental users such as GDEs, as the locally determined SMCs in GSPs that were designed to avoid significant and unreasonable undesirable results.	
568-127	[Att 1:] Chapter 8 - 8.3.2.1 No Project Alternative, page 8-23. Issue: In its assessment of potential groundwater-related impacts, the DEIR did not explicitly consider SGMA [Sustainable Groundwater Management Act] implementation and associated groundwater management thresholds identified in groundwater sustainability plans (GSPs) for the subbasins underlying the study area. For the 2040 No Project Alternative, the DEIR asserts that there may be demand reduction or supply augmentation under SGMA that may reduce reported declines in groundwater levels; however, the DEIR does not identify or discuss the measurable objectives or minimum thresholds identified in GSPs which can be reasonably foreseen to occur by 2040. Some subbasin GSPs set measurable objectives or minimum thresholds at or below historic low groundwater levels. Without explicit identification of SGMA management criteria and comparison of SGMA groundwater thresholds to the reported groundwater level declines in the No Project Alternative, it is unsubstantiated to state that SGMA implementation may reduce groundwater declines. Additionally, it is possible that cumulative Project operations with SGMA implementation may cause potentially significant groundwater-related impacts.	Please refer to Common Response 8, Relationship to Other Plans, Projects, Policies, and Programs, regarding consideration of California's Sustainable Groundwater Management Act and groundwater sustainability plans. As explained in Common Response 8, the groundwater analysis contained in Chapter 8, Groundwater, found groundwater impacts to be less than significant and the project would not interfere with implementation of GSPs. Please see Common Response 4, No Project Alternative Description and Analysis, regarding the CEQA requirements for describing and defining the No Project alternative. SGMA is included in the No Project Alternative (see Appendix 3C, Defining Existing Conditions, No Project Alternative, and Cumulative Impact Conditions) qualitatively (see the Chapter 8 section titled No Project Alternative).

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	CDFW [California Department of Fish and Wildlife] recommends the EIR explicitly consider SGMA in its analysis of potential groundwater related impacts in the 2040 No Project Alternative, as well as in the analysis of Project operations alternatives. The EIR should identify the relevant sustainable management criteria (SMC) thresholds in study area GSPs and assess potential cumulative impacts of Project operations with SGMA implementation.	
568-128	[ATT 1:] Chapter 9- General Modeling Comment, Multiple pages. The DEIR does not address if the baseline conditions considered in the model include TUCPs or how Project exports impact the need for additional TUCPs in the future. CDFW recommends analyzing Proposed Project operations during drought sequence in which a TUCP would be submitted to modify d-1641 standards as a sensitivity run in an appendix to the EIR to better understand Proposed Project operations under these conditions and associated impacts.	Please see Common Response 3, Alternatives Development and Description, regarding Temporary Urgency Change Petitions and Delta Conveyance Project operations.
568-129	[Att 1:] Chapter 9- 9.1.5.11 Cyanobacteria Harmful Algae Blooms, page 9-26. Issue: Benthic invertebrates are also impacted by toxins. CHABs [Cyanobacteria Harmful Algae Blooms] can also have other negative impacts in addition to toxins. Blooms can alter water quality conditions. During a bloom pH can increase to above 9 shifting ammonium (non-toxic) to ammonia (toxic) to fish. Once the bloom recedes and starts to decompose then dissolved oxygen levels can decline leading to hypoxia also killing fish, benthic invertebrates and other aquatic organisms that rely on dissolved oxygen.	The section titled Cyanobacteria Harmful Algal Blooms (within the discussion of existing surface water quality) in Chapter 9, Water Quality, has been revised to identify benthic macroinvertebrates as potentially being affected by elevated levels of cyanotoxins and also to identify elevated pH as a potential water quality effect of cyanobacteria harmful algal blooms. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	CDFW [California Department of Fish and Wildlife] recommends benthic invertebrates are added to as species impacted by toxins in the section describing negative water impacts of how blooms (pH, nutrients, dissolved oxygen).	
568-130	[Att 1:] Chapter 9- 9.1.5.11 Cyanobacteria Harmful Algae Blooms, page 9-28. Issue: The DEIR states hydrodynamic conditions of rivers in watersheds upstream of the Delta [Sacramento-San Joaquin Delta] are not conducive to cyanobacteria bloom formation due to high velocity, high turbulence and mixing, and low residence times. However, CHABs[Cyanobacteria Harmful Algae Blooms] have been found in a variety of aquatic environments in California. For example, benthic CHAB's, which have been present in the Eel River and DWR's [Department of Water Resources] Yolo Bypass Fish Monitoring Program also has observed Microcystis index scales in their data. The EIR should include an analysis of the Project's potential to influence CHABs upstream of the Delta or provide discussion, including references, as to why this analysis is not needed.	The project alternatives would not affect surface water quality in the reservoirs and rivers upstream of the Delta, as described in the following sections in Chapter 9, Water Quality: Methods for Analysis; Evaluation of Operations and Maintenance; and Upstream of the Delta. This conclusion is supported by modeling output in Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, and analysis included in the Upstream of Delta Water Quality Analysis technical memorandum (Robertson-Bryan Inc. 2023; cited in Appendix 9L, Water Quality 2040 Analysis, in the section titled Impacts of the Project Alternatives on Water Quality in Waters Upstream of the Delta at 2040), which is part of the Final EIR administrative record, showing little to no change in upstream reservoir storage and river flows. Where some changes were modeled to occur (Oroville Reservoir and Feather River), those changes would not affect upstream water quality because the project alternatives would not affect external sources of constituents and the small changes in reservoir storage and river flows would not affect internal sources of the constituents. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, regarding the scope of the study area evaluated in the EIR. Please refer to Common Response 3, Alternatives Development and Description, regarding Delta Conveyance Project operations, which do not include changes to State Water Project or Central Valley Project operational criteria upstream of the proposed north Delta intakes. Finally, please refer to Common Response 9, Hydrologic Modeling and Approach, regarding modeled representation of upstream effects and operations criteria.

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568-131	[ATT 1:] Chapter 9- 9.1.5.11 Cyanobacteria Harmful Algae Blooms, page 9-28. The DEIR states large reservoirs upstream of the Delta [Sacramento-San Joaquin Delta] are typically characterized by low nutrient concentrations, where other phytoplankton outcompete cyanobacteria. However, other cyanobacteria can occur in low nutrient water systems, such as the neurotoxin β-N-methylamino-lalanine (BMAAa). Cyanobacteria are resilient and tend to outcompete other phytoplankton, so it is unclear if this statement is fully supported. CDFW recommends the EIR provide references and further context to justify this conclusion or adjust analysis as needed.	The statement on Chapter 9, Water Quality, page 9-28 of the Draft EIR regarding the characterization of cyanobacteria in upstream reservoirs is correct as written. It is true that in low nutrient systems other phytoplankton generally outcompete cyanobacteria. However, the next sentence in the setting paragraph acknowledges that cyanobacteria blooms have occasionally been documented in Shasta Lake, Lake Oroville, and Whiskeytown Lake. The sentence goes on to discuss the type of toxins (if known) that were detected during these blooms. BMAA is a natural non-proteinogenic diamino acid produced by several species of both prokaryotic (cyanobacteria) and eukaryotic (diatoms and dinoflagellates) microorganisms. To date there are no public records indicating BMAA has been measured in the upstream reservoirs. Based on these considerations there are no changes to the setting. Please see response to comment 568-130 regarding how the project alternatives would not affect surface water quality in the reservoirs upstream of the Delta.
568-132	[ATT 1:] Chapter 9- Bay Delta Water Quality Objectives, page 9-94. Exceedances based on water year type and month should be shown. CDFW recommends that the EIR include more information on exceedances by month and water year type for last 10 years relative to the frequency Bay-Delta WQCP objectives are exceeded. Furthermore, clarification on real-time operations referenced are needed. Is this intended to reference currently proposed project operations, or operations to be developed with fisheries regulatory agencies?	As described in Chapter 9, Water Quality, Impact WQ-5 (electrical conductivity [EC]), the modeled exceedance of the Bay-Delta Water Quality Control Plan (WQCP) EC objectives is a modeling artifact attributable to the monthly timestep of the hydrologic modeling conducted by CalSim 3, as compared to the 15-minute timestep of DSM2. EC objectives would not be exceeded more frequently under the project alternatives relative to existing conditions due to real-time operational decisions to meet Bay-Delta WQCP EC objectives as implemented through State Water Resources Control Board Decision 1641. Please refer to Common Response 3, Alternatives Development and Description, regarding seasonal shifting from diversions in the south Delta to the north Delta to improve operational efficiency for salinity management. Modeling results in the Chapter 9 appendices include average constituent levels (e.g., Appendix 9G, Electrical Conductivity, presents average EC) by water year type to illustrate the water year types when changes could occur.

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568-133	[ATT 1:] Chapter 9- Impact WQ -7: Effects on Nutrients Resulting from Facility Operations and Maintenance, pages 9-124. Throughout the chapter, the discussion of the source water fraction exported through CVP [Central Valley Project] or SWP [State Water Project] is unclear. For example, the DEIR states "The long-term average Sacramento River water fraction were modeled to increase by up to 5.5% in March while San Joaquin River water would decrease up to 4.5% and agricultural drainage waters would decrease by up to 0.7% in March, as a long-term average" (p. 124). It is unclear why there will be increases in source water from the Sacramento River through the CVP given that there will be less Sacramento River inflow into the Delta [Sacramento-San Joaquin Delta] due to NDDs [north Delta Diversions]. CDFW assumes this increase is associated with wheeling between CVP and SWP; however, it is not clear based on proposed operations how wheeling will occur between the two facilities. It is also unclear why the highest increase in the fraction of source water occurs in March compared to other months. CDFW recommends the EIR provide further explanation on the source water fraction exported through CVP or SWP and provide modeling to support analysis and conclusions. This analysis effects the level of potential project impacts to water quality as well as other aquatic resources.	As described in Chapter 5, Surface Water, and Chapter 6, Water Supply, flows upstream of the north Delta intakes (i.e., inflow into the Delta) would have minimal to limited changes. Furthermore, please see Common Response 3, Alternatives Development and Description, regarding operations and the area upstream of the north Delta intakes. The text cited in this comment is from Chapter 9, Water Quality, Impact WQ-7 (nutrients) discussion regarding changes in source water fractions that would occur at the Jones Pumping Plant under Alternatives 2a and 4a. As described in Chapter 3, Description of Proposed Project and Alternatives, Alternatives 2a and 4a would provide 1,500 cubic feet per second (cfs) of water delivery to the Central Valley (CVP) Jones Pumping Plant in addition to 6,000 cfs of State Water Project (SWP) deliveries. The higher percentage of Sacramento River water under Alternatives 2a and 4a shown in the modeling results at Jones Pumping Plant is associated with this operation. This information is based on modeling results presented in Appendix 9B, Source Water Fingerprinting, which presents the average source water percentage under the project alternatives and change from existing conditions, as modeled by DSM2 for the 93-year (1923–2015) hydrologic period. Therefore, no additional modeling is necessary.
568-134	[ATT 1:] Chapter 9- Impact WQ-9: Effects of Dissolved Oxygen resulting from Facility Operations and Maintenance, page 9-131.	Chapter 9, Water Quality, Impact WQ-9 (dissolved oxygen) cites to daily average temperature modeling results presented in Appendix 9E, Cyanobacteria Harmful Algal Blooms. Temperature was modeled using DSM2, which modeled temperature on a 15-minute timestep. Modeling

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	The DEIR concludes "differences in Delta [Sacramento-San Joaquin Delta] inflows that would occur under the project alternatives relative to existing conditions would not result in water temperature differences [that] would lead to lower dissolved oxygen concentrations" (p. 131). However, it is unclear if water temperatures were calculated by water year type or month. The scale of analysis could have an impact on the results presented. CDFW recommends the EIR include a better description of the temperature analysis conducted. Specifically, water temperature impacts from the project should be assessed at a minimum on a monthly time step but ideally daily. Extreme changes in water temperature could have detrimental effects to aquatic systems.	results are presented for 12 Delta locations for the months of June through November. The modeling results show that project operations would have little to no effect on Delta water temperatures.
568-135	[ATT 1:] Chapter 12- Table 12-0, AQUA-7, page 12-6. Text indicates entrainment results for the south Delta [Sacramento-San Joaquin Delta] and the North Bay Aqueduct were combined. The facilities' entrainment results should not be combined. They are located far apart in the Project Area and are likely influenced by different hydrologic factors. CDFW requests that the EIR separate entrainment results for south Delta and North Bay Aqueduct facilities.	Results for south Delta and North Bay Aqueduct facilities have been separated as requested in the tables mentioned as well as similar tables for delta smelt in Chapter 12, Fish and Aquatic Resources, and relevant tables in Appendix 12B, Bay-Delta Methods and Results, and 12C, Fish and Aquatic Resources 2040 Analysis. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-136	[ATT 1:] Chapter 12-12.1 Environmental Setting, page 12-7. The DEIR does not discuss upstream (upstream of the Delta [Sacramento-San Joaquin Delta]) environmental setting or stressors. Since the Project will impact aquatic resources, such as anadromous fish species, a discussion of the upstream	Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for information about the analysis of aquatic species in upstream waterways. Because there would be no substantial effects on aquatic species upstream of the north Delta intakes, the study area in Chapter 12, Fish and Aquatic Resources, does not include this area and therefore this area does not need to be

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	habitat is critical to understand the impacts of the Project and impacts associated with upstream conditions. CDFW recommends that the EIR include a section on upstream habitat (upstream of the Delta) within the Environmental Setting section to provide context for the analysis of impacts associated with upstream operations.	included within the Environmental Setting section of Chapter 12. Note, however, that background information on upstream areas is available in Appendix 12A, Environmental Setting Background Information, in the section titled Other Areas Considered for Potential Impacts on Fish and Aquatic Resources.
568-137	[ATT 1:] Chapter 12- Table 12-1, page 12-8. Tule Perch, Pacific Herring, and Prickly Sculpin are species that produce young that rear in the Delta [Sacramento-San Joaquin Delta] or Suisun Bay/Marsh and may be impacted by the Proposed Project construction and operations. These species are not currently included in Table 12-1 Fish and Aquatic Species of Management Concern Potentially Affected by the Project Alternatives. CDFW recommends the EIR include Tule Perch, Pacific Herring, and Prickly Sculpin in Table 12-1, and include these species in its impact analysis.	As described in Chapter 12, Fish and Aquatic Resources, California Species of Special Concern included in the table titled Fish and Aquatic Species of Management Concern Potentially Affected by the Project Alternatives include those with critical, high, or moderate status for concern; tule perch and prickly sculpin have low status for concern and therefore were not included. Recent studies have shown a long-term increase in survey catch per effort for these species (Mahardja et al. 2017, as cited in Chapter 12). As the comment notes, these species occur within the Delta and could be subject to the types of construction effects noted in Impact AQUA-1, with effects limited by mitigation measures and environmental commitments as described therein. Operational effects would also be limited in these littoral species because entrainment for such species is not correlated with broad-scale hydrodynamics caused by effects on channel flows from diversions (Grimaldo et al. 2009 as cited in Chapter 12) and entrainment risk at the north Delta intakes is spatially a small portion of the species' overall distribution within the Delta. With respect to Pacific herring, the species generally occurs within San Francisco Bay, with some occurrence in Suisun Bay (Fleming 1999), and therefore would not be subject to construction effects described for the alternatives in Impact AQUA-1. There is no statistically significant relationship of Pacific herring abundance index with Delta outflow (Kimmerer et al. 2009 as cited in Chapter 12), indicating there would not be the potential for effects from operations of the alternatives.

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568-138	[ATT 1:] Chapter 12-12.1.4.2, Delta, Aquatic Habitat, page 12-10. The DEIR states water temperatures in summer approach or exceed the upper thermal tolerances (e.g., 20°C to 25°C) for cold water fish species such as salmonids and Delta [Sacramento-San Joaquin Delta] -dependent species such as Delta smelt. Longfin smelt also experience thermal stress at 20°C and should be included in any subsequent analysis and discussion. CDFW recommends including Longfin Smelt to the examples of "delta-dependent species- and adding reference to Jeffries et al. (2016).	The reference as recommended for citation in the comment is cited in the longfin smelt discussion in Appendix 12A, Environmental Setting Background Information, where more species-specific information is elaborated on.
568-139	[ATT 1:] Chapter 12- 12.1.4.2, Delta, Aquatic Habitat, page 12-10. Current language in the DEIR leaves out Suisun and North Delta [Sacramento-San Joaquin Delta] conditions when referencing high water temperatures contributing to low Delta smelt survival. High water temperatures in these regions may negatively impact the species and should be considered. CDFW recommends including the recent FLOAT report as a reference. As temperature is increasingly becoming an estuary-wide issue subsequent analysis should consider Suisun and North Delta and not just the south Delta and San Joaquin River when assessing potential impacts.	Although the Draft EIR did not explicitly reference Suisun and north Delta as mentioned in the comment, these areas were implicitly included in the sentence following explicit mention of the south Delta and San Joaquin River (i.e., “Halverson et al. (2022) found that thermally unsuitable habitat for delta smelt, indicated by annual maximum water surface temperatures exceeding the critical thermal maximum temperature, increased by 1.5 square kilometers per year from 1985 to 2019, with unsuitable conditions for delta smelt observed in large portions of the Delta in 2017 (see also Flow Alteration - Management, Analysis, and Synthesis Team 2020:232)”), which references the recent FLOAT report as suggested by the commenter. Consistent with the commenter’s suggestion to assess potential temperature impacts not just in the south Delta and San Joaquin River, the EIR includes analyses in the Sacramento River, illustrating minimal effects from operations of the alternatives (see Impact AQUA-2 in Chapter 12, Fish and Aquatic Resources).
568-140	[ATT 1:] Chapter 12- 12.1.4.2, Delta, Aquatic Habitat, page 12-11.	The comment expresses concern about the citation of one particular peer-reviewed publication. This paper has been cited because it is one of a variety of publications on this topic, i.e., the response of delta smelt to low

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	CDFW is concerned about the conclusions drawn from the reference Murphy and Weiland (2019) and would like to continue to work with DWR [Department of Water Resources] to better understand the importance of including this material, in this context. Much of the delta smelt population occupies the low salinity zone during the fall, with some individuals occurring in fresher habitats and some in more saline habitats (Hobbs et al. 2019; Eakin et al. 2020). The fact that some fish occur in fresher or more saline habitats (outside the LSZ) does not lessen, nor negate the need to continue to focus on habitat suitability within the Low Salinity Zone during the summer and fall. CDFW recommends including Eakin et al. (2020) and Hobbs et al. (2019) to this discussion of fall X2 and juvenile Delta Smelt abundance/survival.	salinity zone conditions. Consideration of low salinity zone habitat as the comment suggests was included in the Draft EIR (see analysis in the section titled Summer-Fall Low Salinity Habitat Extent and Related Factors in Impact AQUA-6 in Chapter 12, Fish and Aquatic Resources). Additional references, including Hobbs et al. (2019) as recommended by the comment, are cited in the discussion of delta smelt in Appendix 12A, Environmental Setting Background Information.
568-141	[ATT 1:] Chapter 12- 12.1.4.2, Delta, Turbidity, page 12-14. The DEIR states "Recent modeling examining future climate scenarios, however, predicts significant increases in large flow events and sediment loading to the Delta [Sacramento-San Joaquin Delta] from the Sacramento River over the next century for two representative greenhouse gas concentration pathways, which could increase turbidity"(p.11). The sentence seems to indicate that the predicted significant increases in large flow events and sediment loading that resulted from two representative greenhouse gas concentration pathways would increase turbidity. Is this meant to indicate that increased turbidity from climate change effects on flow and sediment loading would offset impacts to turbidity from the Proposed Project?	As the comment notes, the recent modeling by Stern et al. (2020) suggests the potential for long-term increase in turbidity. Presentation of this information in the environmental setting at the location in the chapter noted by the comment is providing information on turbidity and not providing any analysis of offsetting effects from the project alternatives as queried in the comment. Consistent with the comment's recommendation, the EIR clearly states in the CEQA conclusion for Impact AQUA-6 in Chapter 12, Fish and Aquatic Resources, that the relatively low percentage of sediment estimated to have the potential to be entrained by the north Delta intakes is not concluded to be a significant impact. DWR includes Environmental Commitment EC-15 to address the issue of sediment entrainment (see Appendix 3B, Environmental Commitments and Best Management Practices); see also response to comment 568-53 regarding sediment removal.

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	CDFW recommends the EIR clarify if this statement is intended to indicate that increased turbidity associated with high flow events would offset impacts to turbidity because of the Proposed Project. In its impacts analysis, CDFW recommends that the EIR clearly explain whether the Proposed Project's impacts related to turbidity are significant.	
568-142	[ATT 1:] Chapter 12- 12.1.4.2, Delta, Turbidity, page 12-14. The DEIR states that 3550 cubic yards per day of sediment releases were needed to increase turbidity by 10 nephelometric turbidity units (NTU) between Emmaton and Mallard Island during May through September (p.14). However, it is unclear if the study concluded that sediment supplementation is feasible. Additionally, there is no information as to how many days of sediment releases would be needed to reach 10 NTU. Furthermore, the current language does not describe how the volume would compare to the to the expected volume settling in basins adjacent to the proposed North Delta [Sacramento-San Joaquin Delta] export intake structures, nor does it include the volume of the drying lagoons in this section. Feasibility of turbidity supplementation in other regions has also not been addressed. CDFW recommends the EIR: 1) include information on the number of days of sediment releases that would be needed to reach 10 NTU, 2) clarify how this volume compares to expected volume settling in the basins adjacent to proposed North Delta export intake structures, 3) include the volume provided by the drying lagoons described in Chapter 3, and 4) provide	The study cited in the comment is presented in the environmental setting section to provide context for the issue of turbidity and how it was specifically addressed as part of the Delta Smelt Resiliency Strategy. The cited study did not specifically conclude feasibility but demonstrated that turbidity could be increased if sediment was introduced in the manner modeled. The study illustrated that after around 1 month of sediment supplementation a turbidity increase of 10 NTU was modeled to have occurred. The comment provides several recommendations specific to tying the information from the cited study to the specifics of the proposed alternatives. Such a link is not warranted because the EIR does not conclude there is a significant impact as a result of sediment entrainment (see Impact AQUA-6 in Chapter 12, Fish and Aquatic Resources) and sediment reintroduction is not proposed under the alternatives, although it could potentially be considered as part of an adaptive management approach as described in Environmental Commitment EC-15 to address unanticipated sediment entrainment issues (Appendix 3B, Environmental Commitments and Best Management Practices), should it be determined necessary after operations commence. Please also see responses to comments 568-53 and 568-141 regarding sediment removal and reintroduction.

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	discussion whether turbidity supplementation in other regions is feasible.	
568-143	[ATT 1: Chapter 12- 12.1.4.2, Delta, Contaminants, page 12-16. The DEIR does not address risks to diving ducks, sturgeon, and splittail due to biomagnification of selenium before consuming Potamocorbula. CDFW recommends that the EIR state that diving ducks, sturgeon, and Sacramento splittail are at greatest risk of selenium toxicity due to both selenium presence in nonnative benthic bivalves and biomagnification of selenium by Potamocorbula.]	The EIR's reference to risk for the aquatic species mentioned in the comment as a function of selenium present in the benthic bivalves is part of the Chapter 12, Fish and Aquatic Resources, environmental setting and implicitly includes the process of biomagnification by Potamocorbula, which is one of the nonnative benthic bivalves that is being referred to. Chapter 13, Terrestrial Biological Resources, includes an analysis of selenium effects on bird species and acknowledges that birds that consume prey with high levels of selenium have a higher risk of selenium toxicity.
568-144	[ATT 1:] Chapter 12- 12.1.4.2, Delta and North Delta [Sacramento-San Joaquin Delta] Fish Passage and Entrainment, page 12-17. The DEIR does not indicate whether there will be changes to Barker Slough operations as part of the Proposed Project. Changes to Barker Slough operations could result in impacts to aquatic resources. CDFW recommends that the EIR analyze impacts associated with any anticipated changes to Barker Slough operations as part of the Proposed Project.	There are no changes in Barker Slough operations criteria proposed by the alternatives; any small differences in modeled operations are reflected in DSM2-PTM results; see response to comment 568-135 regarding provision of particle tracking modeling results for the North Bay Aqueduct/Barker Slough Pumping Plant.
568-145	[ATT 1:] Chapter 12- 12.1.4.2 Habitat Conditions and Environmental Stressors in Delta and Suisun Bay/Marsh, page 12-17. The DEIR states "Consequently, reduced Sacramento River inflow increases the frequency of reverse flows at this junction, thereby increasing the proportion of fish that are entrained	The citation mentioned in the comment uses the exact language used in the original source paper (Perry et al. 2015 as cited in Chapter 12, Fish and Aquatic Resources), so the exact meaning is only known to the authors of that paper; however, judging by the context of the paper, wherein magnitude and duration are also described as being affected by Sacramento River inflow (and these factors were also cited in the Draft EIR, in the sentence prior to the one noted in the comment), it is likely the

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	into the interior Delta, where mortality is high" (p.17). In the statement, it is unclear if "frequency" is referring to the number of flow reversals or the magnitude and duration. CDFW requests the EIR clarify the meaning of "frequency" discussed in this sentence. Specifically, does "frequency" refer to the number of flow reversals or the magnitude and duration of flow? This detail impacts how the information is interpreted for development of mitigation measures.	authors were speaking generally to these three factors being affected by Sacramento River inflow. The analyses included in the EIR related to this subject account for all of these factors in estimating the effects to the proportion of fish entering the interior Delta and the resulting mitigation needs (see, e.g., Impact AQUA-2 for winter-run Chinook salmon).
568-146	[ATT 1:] Chapter 12- 12.1.4.2, Delta, Fish Passage, and Entrainment, Central and South Delta Fish Passage and Entrainment, page 12-18. The text used in this sentence may downplay the effect of filling Clifton Court Forebay (CCF) during flood tides on Delta [Sacramento-San Joaquin Delta] hydrology and may leave readers with the impression that fish may not be drawn toward Project facilities. Specifically, the SWP [State Water Project] harnesses the power of flood tides to fill CCF. While it is true that tidal fluctuation causes reverse flows across the Delta, the SWP exacerbates this effect via filling of CCF on the flood tides. CDFW recommends emphasizing a stronger effect on Delta hydrology than what is conveyed here (i.e., changing language to "which draws fish" rather than "some fish").	The description is intended to convey that not all fish are drawn toward the facilities. As such, revisions to the existing text are not warranted.
568-147	[ATT 1:] Chapter 12- 12.1.4.2 Habitat Conditions and Environmental Stressors in Delta and Suisun Bay, Central and South Delta [Sacramento-San Joaquin Delta] Fish Passage and Entrainment, page 12-22. The habitat information provided in Section 12.1.4 of the DEIR provides supporting evidence primarily for federally and state	The section within Chapter 12, Fish and Aquatic Resources, cited by the commenter includes information applicable not only to listed fish species but also non-listed fish species; additional information for all species is provided in Appendix 12A, Environmental Setting Background Information.

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	endangered and threatened species and does not provide sufficient habitat information relevant to non-endangered or threatened species. CDFW recommends that the EIR include research and supporting evidence of non-endangered or threatened species to fully understand baseline habitat conditions for all aquatic species analyzed in the EIR.	
568-148	[ATT 1:] Chapter 12- Table 12-2, Aquatic Habitat Sampling Platform: Platform Utility and Delta Implementation Studies, page 12-32. CDFW notes that the Sampling Platform can sample without "handling" the fish if the cameras are on, and the trailing net is open to allow fish to pass through. However, the act of guiding fish into a narrowing channel to be photographed can still have an impact. CDFW recommends that the EIR acknowledge that the act of funneling fish into a narrow channel could still cause impacts to fish.	The referenced information regarding the Aquatic Habitat Sampling Platform is solely for general setting information regarding Interagency Ecological Program work plan activities funded by DWR and uses language provided by the Interagency Ecological Program. With respect to the potential for impacts to fish, the language provided by the Interagency Ecological Program does so by acknowledging there may be minimal take of sensitive species.
568-149	[ATT 1:] Chapter 12- 12.1.4.2, Yolo Bypass, Aquatic Habitat, page 12-35. The DEIR does not include a discussion about the frequency and duration of Yolo Bypass inundation, or at what river stage the Sacramento River is required to overtop Fremont Weir. CDFW recommends including information on the frequency in which the Yolo Bypass is inundated, the average duration of inundation, and the river stage of the Sacramento River required to overtop Fremont Weir.	Language discussing the recommended factors was added to the Final EIR. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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568-150	[ATT 1:], Chapter 12- Table 12-3. Methods for Analysis of Potential Effects on Fish and Aquatic Resources, page 12-41. The DEIR analysis for fish and aquatic resources focuses on the analysis of smelt and salmonids. It only includes X2-abundance regression, underwater construction noise, and salvage-density analyses for other special-status fish and aquatic species. CDFW recommends that the EIR include species specific analyses to identify Project operational impacts and fully analyze Project impacts to non-special- status fish and aquatic species. Specifically, analyses should identify migratory, entrainment, and indirect impacts (water quality, water temperature) to non-smelt and salmonid species.	Based on the table titled Methods for Analysis of Potential Effects on Fish and Aquatic Resources in Chapter 12, Fish and Aquatic Resources, the comment suggests that the focus of the analysis is on smelt and salmonids and that analyses are limited for other special-status fish and aquatic species. Note that the table summarizes the main quantitative methods and there is additional qualitative analysis of the types of factors mentioned in the comment that are not captured in the table. For example, other special-status species have analyses pertaining to factors such as entrainment of early life stages at the north Delta intakes (see in particular white sturgeon, striped bass, and American shad in Impacts AQUA-9, AQUA-14, and AQUA-15) and water quality selenium and methylmercury considerations for green and white sturgeon in Impacts AQUA-8 and AQUA-9.
568-151	[ATT 1:] Chapter 12- 12.3.3.1, predictable actions by others, page12-47. The DEIR discussion in section 12.3.3.1 excludes consideration of interactions between the locations chosen for water diversions and operation effects. Intakes located within protected embayment might be proximal to important spawning or larval rearing habitat(s); similarly, intakes located at the convergence of two currents would be more likely to encounter more eggs and larvae than if located elsewhere. CDFW recommends the EIR include a discussion of how intake location may affect operation effects so that these effects can be fully analyzed, and minimization approaches considered.	The comment provides examples of factors potentially resulting in effects on aquatic life from operation of intakes and recommends further discussion of these factors in the EIR. The EIR acknowledges the potential for operations effects such as entrainment or impingement of fish and aquatic species during water diversions for desalination and notes that mitigation as provision of habitat would likely be used to offset potential entrainment and impingement losses if found to be significant; assessment of the potential significance of impacts and mitigation in such cases involves consideration of the types of factors mentioned in the comment (e.g., area from which early life stages are transported to the vicinity of the intake via prevailing currents). It is not possible to provide further details of potential impacts or mitigation/minimization approaches given that such projects are unspecified and uncertain; see discussion in this regard in Common Response 4, No Project Alternative Description and Analysis.
568-152	[ATT 1]: Chapter 12-12.3.3.2 Impacts of the Project Alternatives on Fish and Aquatic Resources, Impact Aqua, page-1 12-48. Impact Aqua-1 does not fully explore the sources of impacts to	Effects on fish and aquatic resources, including the species mentioned in the comment, are analyzed in Impact AQUA-1 in Chapter 12, Fish and Aquatic Resources, with respect to construction effects, with a number of environmental commitments to limit effects (see Appendix 3B,

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	starry flounder, CA bay shrimp, and Central CA roach. Starry flounder might be directly impacted by the Proposed Project because some juveniles migrate to and upstream of the Proposed NDD [North Delta Diversions] and have been caught in the sport fishery at Miller Park. Starry flounder and CA bay shrimp also have a known outflow-abundance relationship (Kimmer 2002) and thus would be expected to be impacted by the Proposed Project because of reduced Delta [Sacramento-San Joaquin Delta] outflows. CDFW recommends that the EIR fully explain, with citations, the Project impacts to starry flounder, CA bay shrimp, and Central CA roach.	Environmental Commitments and Best Management Practices) and Mitigation Measures AQUA-1a, AQUA-1b, AQUA-1c, and the CMP to reduce effects to less-than-significant levels. Potential Delta outflow-related effects of the project alternatives on starry flounder and California bay shrimp, as noted in the comment, are assessed in Impacts AQUA-12 and AQUA-18. Central California roach is one of the native minnows included in operations- and maintenance-related impacts discussed in Impact AQUA-11.
568-153	[ATT 1:] Chapter 12-12.3.3.2 Impacts of the Project Alternatives on Fish and Aquatic Resources, Tables 12-6 Through 12-9, page 12-51. Tables 12-6 through 12-9 separate acoustic impacts by intake and are difficult to compare between DEIR alternatives, because each alternative includes multiple intakes. CDFW recommends that the EIR include a discussion that considers total impacts associated with each alternative, then compares each alternative to the others to better illustrate large scale differences among alternatives in addition to the discussion of impacts related to individual intakes.	The comment essentially recommends comparison of the intakes in a single table; such a summary is provided in the table titled Comparison of Impacts on Fish and Aquatic Resources by Alternative in Chapter 12, Fish and Aquatic Resources.
568-154	[ATT 1]: Chapter 12- Impact AQUA-1: Effects of Construction of Water Conveyance Facilities on Fish and Aquatic Species, Construction, page 12-56. The impacts of methylation of mercury, as sediment is disturbed, is not included in the DEIR as a construction impact.	Impact AQUA-1 includes consideration of sediment disturbance including contaminants such as metals, thereby covering the potential effect recommended for discussion in the comment.

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	CDFW recommends that the EIR include the methylation of mercury within Impact AQUA-1 and assess the potential impacts from the methylation of mercury.	
568-155	[ATT 1:] Chapter 12- Impact AQUA-1: Effects of Construction of Water Conveyance Facilities on Fish and Aquatic Species, Construction, page 12-57. Depending on the timing of withdrawals, changes to surface waters because of construction, may impact native fish. CDFW recommends that the EIR evaluate the timing of withdrawals of surface water for construction to identify whether the EIR alternatives will impact native fish.	The level of information for detailed analysis recommended in the comment is not available for analysis in the EIR. As noted in the EIR, at most construction sites, there would be no changes to surface waters related to construction water supplies. Any use of diversions will be screened, as appropriate, and additional authorizations addressed following development of detailed construction engineering, so at the limited number of sites that could use existing surface water rights, entrainment of fish would be low based on low numbers of fish entrained at similar small intakes.
568-156	[ATT 1:] Chapter 12- Impact AQUA-1: Effects of Construction of Water Conveyance Facilities on Fish and Aquatic Species, Construction, page 12-58. The increased water temperature section does not discuss whether removed trees will be restored postconstruction. Large riparian vegetation provide shade and help reduce water temperatures along channel margins. CDFW requests that the EIR include a discussion or reference for restoration of riparian habitats postconstruction within this section.	The conclusion to Impact AQUA-1 in Chapter 12, Fish and Aquatic Resources, notes a significant impact from construction before mitigation and describes restoration of channel margin habitat (Mitigation Measure CMP, specifically CMP-24), which, as described in Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, would be constructed ahead of project impacts and would include overhead cover.
568-157	[ATT 1:] Chapter 12- Impact AQUA-1: Effects of Construction of Water Conveyance Facilities on Fish and Aquatic Species, Construction, page 12-59. It is unclear what is meant by "temporary" channel margin impacts. In the above section on increased water temperature,	The definition of temporary impacts is provided in the footnote at first mention. Please see also response to comment 568-156 regarding the timeline for mitigation construction relative to project impacts.

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	there is discussion about the removal of riparian habitat. This would not be considered "temporary" as the riparian habitat is unlikely to restore itself once construction is completed, and even if restored, will take some time to achieve pre-Project conditions. CDFW requests that the EIR clarify what would be considered "temporary" in this context.	
568-158	[ATT 1: Chapter 12- Impact AQUA-1: Effects of Construction of Water Conveyance Facilities on Fish and Aquatic Species, page 12-62. The conclusion presented for Impact AQUA-1 provides insufficient detail to ascertain how it relates to the thresholds of significance, the specific impact mechanisms, and to "focal" species. Additionally, it is difficult to tell how impacts differ between the alternatives. CDFW recommends that the EIR include a chart or other means to better disclose for the reader the scale or scope of the construction impacts of the Project, under the different alternatives.]	The comment recommends that the EIR include a means to compare construction impacts (Impact AQUA-1) for the alternatives. The table titled Comparison of Impacts on Fish and Aquatic Resources by Alternative in Chapter 12, Fish and Aquatic Resources, provides this function, showing the alternatives side by side for areal or linear extent of temporary and permanent habitat impacts, areal extent of acoustic effects from pile driving, areal extent of the suspended sediment plume downstream of each intake, number of barge trips, and number of days of dredging for riprap.
568-159	[ATT 1:] Chapter 12- Impact AQUA-1: Effects of Construction of Water Conveyance Facilities and Fish and Aquatic Species, CEQA [California Environmental Quality Act] Conclusion, page 12-62. The DEIR states "The in-water work period varies depending on location/activity but is generally from June to October" (p.62). This in-water work window does not sufficiently address Chinook salmon races occurring in the Sacramento River Basin. Fall-run Chinook adults occur in the Sacramento River starting	The comment expresses concern that the in-water work window does not sufficiently address potential impacts to Chinook salmon. The EIR acknowledges the potential for temporal overlap with salmonids, citing in particular steelhead, but Chinook salmon races are also included as part of the considerations (see the same page in Chapter 12, Fish and Aquatic Resources, as cited by the commenter). The impact assessment and mitigation reflect this potential overlap, and mitigation on top of a number of environmental commitments (see Appendix 3B, Environmental Commitments and Best Management Practices) were determined to result in a less-than-significant impact conclusion.

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	in July. Winter-run juveniles can emigrate through the lower Sacramento River generally starting in October, but as early as September. CDFW recommends that the EIR acknowledge the potential for impacts to Chinook salmon races within the in-water work window and provide an analysis and mitigation plan for those potential impacts.	
568-160	[ATT 1:] Chapter 12- Mitigation Measure AQUA-1a: Develop and Implement an Underwater Sound Control and Abatement Plan, page 12-63. The definitions for sound pressure level thresholds vary through the DEIR and some of the terms are not well described for the reviewer. CDFW recommends that the sound pressure level thresholds be consistent throughout the EIR and explained in detail.	The comment suggests there are inconsistencies in terms of defining sound pressure level thresholds. These thresholds are initially defined in the Acoustic Effects section of Impact AQUA-1 in Chapter 12, Fish and Aquatic Resources, with consistent reference subsequently provided in Mitigation Measure AQUA-1a. A typographical error for SELcumulative has been corrected in the description of Mitigation Measure AQUA-1a. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-161	[ATT 1:] Chapter 12- Mitigation Measure AQUA-1a: Develop and Implement an Underwater Sound Control and Abatement Plan, page 12-63. The DEIR defers the development of specific enforceable minimization measures to decrease pile driving impacts to a later date. As a result, it is unclear how protective these actions will be. CDFW recommends that the EIR include specific enforceable measures to ensure the Project will not have significant impacts to special-state species. CDFW recommends including the following measures (1) specifying that the monitoring will be conducted by a NMFS/USFWS/CDFW approved fisheries	As described in Mitigation Measure AQUA-1a, development and implementation of the underwater sound control and abatement plan will be done as design project elements are defined. The EIR uses initial assumptions (see the table titled Assumptions and Estimates of Impact Pile Driving Distance and Area of Acoustic Effect at Each Intake for Construction of Cofferdams and Training Walls) that are conservative. As stated in Mitigation Measure AQUA-1a, the plan will be provided to the fish and wildlife agencies (including CDFW) for review and approval. With respect to the specific measures that are recommended in the comment, these are included in Mitigation Measure AQUA-1a (see in particular points 4 and 6); the in-water work window to minimize the potential for effects is specified in Environmental Commitment EC-14 (see Appendix 3B, Environmental Commitments and Best Management Practices) and there will be coordination with the fish and wildlife agencies (including CDFW) to restrict

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	monitor that is trained in fish behavior/biology/presence and timing concerns. If distress or injury result, CDFW suggests that the incident be reported to CDFW; (2) scheduling work for seasonal periods to avoid more sensitive life stages (i.e., eggs, larvae, and downstream migrating juveniles) that have no or limited capacity to avoid work areas; and (3) conduct monitoring that will detect signs of distress for fish.	pile driving activities to specific times of the day and specific duration.
568-162	[ATT 1:] Chapter 12- Mitigation Measure AQUA-1b: Develop and Implement a Barge Operations Plan, page 12-64. The DEIR defers the development of specific enforceable minimization measures to decrease barge impacts to a later date, making it unclear how protective these actions will be. CDFW recommends that the EIR includes specific enforceable measures to ensure the Project will not have significant impacts to special-status species. CDFW recommends the EIR include the following measures (1) daily inspection and cleaning of barges to prevent the spread of invasive aquatic species; (2) if invasive aquatic vegetation is established near the construction site, DWR [Department of Water Resources] shall implement invasive plant control methods to prevent the spread of invasive aquatic plants during construction; (3) implementation of a process and timeline to avoid blockage if barges breakdown.	As stated in Mitigation Measure AQUA-1b, development and implementation of a barge operations plan will be done by the construction contractor, including the points discussed in Mitigation Measure AQUA-1b, and will be approved by NMFS, USFWS, and CDFW. With respect to the specific points raised in the comments, as stated in Mitigation Measure AQUA-1b, state laws regarding monitoring and control of invasive species will be observed when introducing new watercraft to the Delta; barge operations will be done in a manner where disturbance of any vegetation is minimized, but invasive aquatic vegetation is already widespread in the Delta and barge activities would have minimal impacts on spread of invasive aquatic vegetation. With respect to the recommendation related to blockages if barges break down, the comprehensive traffic control plan described in Mitigation Measure AQUA-1b will be developed in coordination with the U.S. Coast Guard for large channels which could address emergency procedures; note that the barges used during the last phases of intake construction would only be traveling in the large channels of the Sacramento and San Joaquin rivers.
568-163	[ATT 1:] Chapter 12- Mitigation Measure AQUA-1b: Develop and Implement a Barge Operations Plan, All Project Alternatives, Performance Measures, Bank Erosion and Riparian Vegetation Loss, page 12-67. The DEIR indicates that barge work may cause erosion to the streambank and potentially significant impacts to the	The comment suggests that barge operations may cause erosion to the streambank and potentially significant impacts to streambank and riparian habitat, without mitigation to reduce the impact to less than significant. With respect to the recommendation to fully analyze potential impacts, these are described in Impact AQUA-1 in Chapter 12, Fish and Aquatic Resources, and the conclusion of a potentially significant impact drove the inclusion of Mitigation Measure AQUA-1b. Specific quantification of

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	streambank and riparian habitat; however, the DEIR does not propose mitigation to decrease the impact to less than significant. CDFW recommends that the EIR fully analyze the potential impacts and propose appropriate mitigation of those impacts, if found to be significant.	impacts is not possible given that barge operations have not yet occurred but Mitigation Measure AQUA-1b includes performance standards for which to assess the effects and outlines the process for assessing the need for compensatory mitigation should effects occur. As with all aspects of the barge operations plan, the plan and its implementation will be subject to approval by the fish and wildlife agencies, including CDFW.
568-164	[ATT 1:] Chapter 12- Mitigation Measure AQUA-1c: Develop and Implement a Fish Rescue and Salvage Plan, Seining and Dip netting, page 12-70. The DEIR does not discuss development of site specific plans with appropriate techniques to remove fish from work areas prior to seining and dip netting. CDFW requests that prior to conducting seining and dip netting, that DWR [Department of Water Resources] develop a site-specific plan in consultation with CDFW and federal fisheries agencies to identify appropriate techniques to remove fish from work areas.	The comment requests that a site-specific plan be developed in consultation with CDFW and federal fisheries agencies to identify appropriate techniques to remove fish from work areas. This is consistent with Mitigation Measure AQUA-1c, which includes submittal of a draft plan to the fish and wildlife agencies for review and approval, with authorization letter from CDFW and the federal fisheries agencies being required before in-water construction activities with the potential for stranding fish can proceed.
568-165	[ATT 1:] Chapter 12- Mitigation Measure AQUA-1c: Develop and Implement a Fish Rescue and Salvage Plan, Electrofishing, page 12-70. The DEIR Mitigation Measure AQUA-1c does not commit to developing a dewatering and contingency plan minimization measures to protect aquatic resources during dewatering and fish rescue and salvage operations. CDFW recommends the EIR include a dewatering and contingency plan that addresses measures to protect aquatic resources during dewatering and fish rescue and salvage	Mitigation Measure AQUA-1c does include these elements. See also response to comment 568-164 regarding submittal, approval, and authorization by CDFW and the federal fisheries agencies. With respect to the comment's recommendation for having a designated fisheries biologist onsite, that is consistent with the description of qualifications of fish rescue personnel and prior text described in Mitigation Measure AQUA-1c; the onsite designated fisheries biologist will be approved by CDFW and the federal fisheries agencies. It is expected that the specifications for fish screens during temporary water diversions will be consistent with those mentioned in the comment and will be finalized during project permitting.

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	operations. Measures should include having a designed fisheries biologist onsite and installing a fish screen, not to exceed 3/32 inches measured diagonally, around temporary water diversion pumps, consistent with NMFS (2017) and NMFS (2022) criteria for screen openings.	
568-166	[ATT 1:] Chapter 12- Impact AQUA-1: Effects of Construction of Water Conveyance Facilities on Fish and Aquatic Species, Mitigation Impacts, Compensatory Mitigation, page 12-72. Mitigation Measure AQUA-1, compensatory mitigation impact summary does not include riparian and marshland habitat. CDFW recommends that the EIR Mitigation Measure AQUA-1, compensatory mitigation summary include a discussion of the riparian and marshland habitat that is being proposed as mitigation for construction impacts.	The comment suggests that the compensatory mitigation impact summary does not include riparian and marshland habitat. As described in the section titled Channel Margin Habitat Mitigation Approach in Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, channel margin habitat mitigation would be anticipated to include these habitat types.
568-167	[ATT 1:] Chapter 12- Impact AQUA-1: Effects of Construction of Water Conveyance Facilities on Fish and Aquatic Species, Mitigation Impacts, Compensatory Mitigation, page 12-73. The DEIR does not provide information regarding potential mitigation sites or types of sites that will be selected to implement the proposed mitigation. CDFW recommends that the EIR include information regarding potential sites or types of sites selected for the proposed mitigation. This is important to providing an understanding of the feasibility of proposed mitigation measures.	The requested information is provided in Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources.
568-168	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Near-Field Effects, page 12-74. The DEIR lacks information regarding near-field effects of	The comment recommends including analyses of near-field effects related to increased in-water structures and biofouling/debris loading. Near-field predation effects on in-water structure are discussed in the Predation section of the near-field analysis (see Impact AQUA-2 in Chapter 12, Fish

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	operations of the NDD [North Delta Diversions] on biofouling/debris loading as well as increased in-water structures (screens, refugia habitat, debris booms and pilings, increased artificial lighting, and increased SAV and FAV), all of which can increase predation risk by providing predator holding habitat. CDFW recommends the EIR include analyses of the near-field effects of operations of the North Delta [Sacramento-San Joaquin Delta] Diversion on biofouling/debris loading as well as increased in-water structures to better account for increased predation risk.]	and Aquatic Resources). Debris removal is discussed in the Maintenance Effects section (see Impact AQUA-2 in Chapter 12).
568-169	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Near-Field Effects, North Delta Exports, page 12-74. The DEIR does not fully consider variation in the number of migrating individuals that would be passing the north Delta [Sacramento-San Joaquin Delta] intakes. In 30-40% of years, when the Yolo Bypass is not inundated, the entire juvenile migrating winter-run Chinook salmon population would pass the NDD [North Delta Diversions]. It is likely that under climate change conditions, a larger proportion of the population of juveniles will be exposed to the NDD due to a reduction in Yolo Bypass inundation. CDFW recommends the EIR clearly state the exposure risk of juvenile Chinook salmon at the NDD in terms of the proportion of the population exposed each year. CDFW recommends the EIR provide adequate mitigation for the migration of juvenile winter-run Chinook Salmon that remain in the mainstem of the Sacramento River and pass by the North Delta intakes.]	The comment suggests that the analysis does not consider variation in the number of migrating juvenile winter-run Chinook salmon passing the north Delta intakes because of Yolo Bypass. This information is included in Chapter 12, Fish and Aquatic Resources, in the discussion of the potential near-field effects; see the discussion of north Delta exports in Impact AQUA-2. The comment suggests that it is likely that a larger proportion of juveniles will be exposed under climate change conditions. Please see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, related to discussion of CEQA environmental baseline, which gives context as to why comparisons were at 2020 climate and not with climate change. Although not required under CEQA, the analyses provided in Appendix 12C, Fish and Aquatic Resources 2040 Analysis, illustrate the relative difference between the No Project Alternative and project alternatives at 2040 conditions. Of the analyses included for winter-run Chinook salmon in Appendix 12C, the Delta Passage Model accounts for differences in Yolo Bypass inundation and shows generally similar patterns at 2040 compared to 2020, except slightly larger differences in dry years. As recommended by the comment, Mitigation Measure CMP (specifically CMP-23, CMP-24, CMP-25, and CMP-26) provides mitigation for migrating juvenile winter-run Chinook salmon that

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568-170	[ATT 1: Chapter 12-12.3.3.2, Impact AQUA-2; Near-Field Effects, page 12-74. The DEIR does not include a discussion of potential changes in predator abundances and rates of predation on native fish populations as a part of the near-field effects of the NDD [North Delta Diversions]. CDFW recommends the EIR include an analysis of increased predator abundance and rates of predation on native fishes near the NDD, and that predation risk be considered when refining operational criteria and NDD intake design to minimize near-field effects of the NDD.]	remain in the mainstem of the Sacramento River and pass by the north Delta intakes The comment recommends inclusion of analysis of increased predator abundance and rates of predation on native fishes near the north Delta diversions. Such analyses are included in Chapter 12, Fish and Aquatic Resources, in the EIR and consider relevant available studies; see, for example, the Predation discussion related to north Delta exports in Impact AQUA-2 and the Upstream Migration Effects and Predation discussion related to north Delta exports in Impact AQUA-6. As described therein, there is uncertainty given available studies for assessment, so fisheries studies would be undertaken to provide information on predatory fish and predation rate at the north Delta intakes once they are operational to inform the potential refinement of future operations and adaptive management (see the section Adaptive Management and Monitoring Program in Chapter 3, Description of the Proposed Project and Alternatives).
568-171	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Near-Field Effects; Tables 12-14 through Table 12-16, pages 12-75 12-76. The DEIR does not include sufficient discussion to enable the reader to understand the implications of the results in Tables 12-14 through 12-16. It is not clear how to interpret results in relation to water surface elevation. For example, does Table 12-15 imply that when flows exceed 50% of the average (50% column), the screens will be in the upper water column 100% of the time (each month)? Is the idea that during higher flows, fish will be even higher than the screens and therefore less impacted by screen exposure? Table 12-16 is also difficult to interpret. For example, why can the screen at Intake C be in the lower position more frequently than at Intakes A or B? CDFW recommends providing more information on how to	With respect to the commenter's suggestion that there is insufficient discussion of the results provided in the three Chapter 12, Fish and Aquatic Resources, tables mentioned by the comment, further examples were added to the table footnotes to clarify the information. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. With respect to the comment's first question about the chapter 12 table titled Water Column Position (U = Upper 50%; L = Lower 50%) of Top of Cylindrical Tee Screens at Intake B During Various Monthly Water Surface Elevation Exceedance Percentiles, 50% in the column header indicates that 50% of the time top of the screen would be in the Upper (U) portion of the water column; the footnote provides other examples. With respect to the comment's second question about the same table, the table does not state that fish would be even higher than the screens based on the available information (although this could happen if fish were relatively

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	interpret the results from Tables 12-14 through 12-16 so that CDFW and other users of the EIR can better understand the Proposed Project NDD [North Delta Diversions] intake configurations and consequent impacts.]	close to the surface); the analysis described in the text associated with this table is just noting that the screens would be in the upper half of the water column much of the time and that therefore there is the potential for frequent exposure given that the fish tend to be in the upper half of the water column based on available information. With respect to the comment's query regarding the relative depths of water at Intakes B and C, as shown in the table titled Elevation of North Delta Diversion Intakes, the elevation of the screens is the same for Intakes B and C. Given that the water column is shallower at Intake C, the intakes are relatively deeper in the water column than at Intake B; additional text was added to the section explaining this.
568-172	[ATT 1: Chapter 12-12.3.3.2, Impact AQUA-2; Near-Field Effects, page 12-78. The DEIR does not clarify the relationship between sweeping velocity and the critical streakline concept. It is unclear whether a fish that is on the intake side of the streakline would be able to navigate to the other side, or whether the approach velocity would be stronger than the sweeping velocity due to the flow of water being towards the intakes. CDFW recommends that the EIR include more discussion of the relationship between sweeping velocity and the critical streakline concept. Additional detail should be provided to explain whether it is possible for a fish that is on the intake side of the streakline to be able to navigate to the other side.]	With respect the comment stating that it is unclear whether the approach velocity would be stronger than the sweeping velocity due to the flow of water being toward the intakes, the EIR text states that the sweeping velocity would be at least double the approach velocity. With respect to the comment suggesting that it is unclear whether a fish would be able to navigate to the other side (presumably of the river channel), reference to the study of Hance et al. (2020) was added as context for movement relative to the critical streakline; the critical streakline analysis was provided as a conservative level of context for potential near-field intake exposure based on hydrodynamic influence of the north Delta intakes on water passing the intakes. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-173	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Near-Field Effects, page 12-78. The DEIR potentially underestimates screen exposure time for juvenile Chinook salmon. Estimated fish exposure totaling 37.5 minutes should be considered with caution given that this	The comment suggests that the Draft EIR underestimates screen exposure time because of an assumption of fish moving downstream with flow. However, in addition to this estimate, the Draft EIR also included quantitative analysis of screen passage time based on the same laboratory study (Swanson et al. 2004) that the comment recommended be included (see the Chapter 12, Fish and Aquatic Resources, table titled Estimated

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	assumes fish move downstream with flow (e.g., do not resist flow). This assumption does not apply well to juvenile Chinook salmon, which are known to resist downstream movement by facing into the direction of flow (Swanson et al. 2004). This behavior can result in a longer transit time than downstream flow, meaning that the estimated 37.5 minutes might be an underestimate of fish exposure. CDFW recommends that the EIR, when discussing screen passage time, consider the direction which juvenile Chinook salmon swim when migrating. Fish exposure totaling 37.5 minutes should be considered as potentially underestimating passage time.]	Screen Passage Time (minutes) of Juvenile Chinook Salmon for Screen Lengths of 30 Feet, 450 Feet, and 900 Feet at 0.2-Feet-per-Second Approach Velocity Based on Laboratory Studies of Swanson et al. (2004), at Temperature of 12 Degrees Celsius).
568-174	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Near-Field Effects; Table 12-17, page 12-79. Table 12-17 includes several confusing elements: 1) The "Diversion Flow by Intake (cfs)" column does not clearly identify total maximum diversions under the intake combinations identified. For example, instead of saying 6,000 cfs for B&C combined, it says 3,000 cfs for B&C. This wording could confuse readers not familiar with the Project, implying total diversions only add up to 3,000 cfs. 2) The "Notes" column does not reflect the diversion rate modeled under the associated Freeport Flow. 3) Information regarding the differences between assumptions for the model runs 5B, 5C, and 5D is important context, but is not provided. CDFW recommends splitting the column "Diversion Flow by Intake (cfs)" in Table 12-17 to show intakes B and C each with means of 3,000 cfs (or 1,000 cfs) for each intake, for a total of 6,000 cfs (or 2,000 cfs) diversion flow. CDFW also recommends	Additional information has been added to the table notes to address the comments. The model runs undertaken as part of the EIR are adequate for the purposes of a planning-level analysis given the range of conditions modeled, with additional runs possible if determined to be necessary during project permitting.

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	including the differences between the modeling scenarios 5B, 5C, and 5D and discussing why they were not modeled at different diversion rates like the other Freeport Flow scenarios. Finally, CDFW recommends including additional model results for tidally varying flows to better understand how tides influence operations at the NDD [North Delta Diversions].]	
568-175	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Near-Field Effects; Tables 12-18 through 12-22, pages 12-80 through 12-86. The DEIR does not provide sufficient information to interpret the results found in Tables 12-18 through 12- 22. Table 12-22 implies that the greatest frequency of NDD [North Delta Diversions] operations would occur during low Freeport flow conditions. Table 12-22 also shows different NDD diversion scenarios under different Freeport flows and has a scenario of 0 cfs for NDD diversion. CDFW recommends that the EIR provide more information to support Tables 12-18 through 12-22, including a discussion on how to interpret the data presented. Results presented in Table 12-22 could be interpreted to imply that the Proposed Project will operate more frequently under low flow conditions, which is inconsistent with other information in the DEIR about planned operations. It is unclear why under higher Freeport flow conditions, the NDD rarely operate, even during summer months. CDFW requests additional explanation to interpret these results considering the description of operations in Chapter 3 that states the NDD will divert in the winter months during excess conditions. Additionally, CDFW requests that the EIR include a discussion of when the NDD would be expected to divert no more than 0 cfs.]	With respect to the portion of the comment that the table suggests the greatest frequency of north Delta diversions operations would be during low Freeport flows in the Chapter 12, Fish and Aquatic Resources, table titled Percentage of Months with North Delta Diversions Within 1,000-cfs Ranges, Categorized by Sacramento River at Freeport Flow, Alternative 5, Based on CalSim Modeling, please note that the table summarizes the frequency of diversions by month for given levels of Freeport flow, not the volume of exports, so relatively frequent diversions do not necessarily equate to greater volumes of diversion during lower flow years, for example. The values in the table reflect the relative frequency of both Freeport flow conditions as well as relative diversion rates; thus, high flows in the summer months would be expected to be rare because of seasonality, for example, so these percentages are low. A footnote was added to each of the five tables mentioned by the comment showing Sacramento River at Freeport flow to clarify the meaning of each cell, along with a row at the bottom of each river flow category in order to show the percentage of months within each flow category. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. With respect to the comment's suggestion that there is inconsistency with description of operations in Chapter 3, Description of the Proposed Project and Alternatives, please note that Chapter 3 does not state that the north Delta diversions will only divert in the winter months during excess conditions as the comment seems to imply; this is part of the general strategy described in Chapter 3, with operational constraints such as

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		bypass flows employed to limit potential effects to fish. With respect to situations with no more than 0 cfs being diverted, Chapter 3 provides additional information, and as cited in the EIR (footnote 18) there is further discussion in Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, in the section titled North Delta Diversion Operational Criteria, and Appendix 5A, Section C, One Dimensional Delta Hydrodynamics and Water Quality Modeling Results, in the section titled North Delta Diversion Intakes Operation.
568-176	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Operations and Maintenance - All Project Alternatives, Near-Field Effects, North Delta Exports, page 12-89. The DEIR states "Fisheries studies would be undertaken to provide information on predatory fish and predation rate at the north Delta [Sacramento-San Joaquin Delta] intakes once they are operational, to inform the refinement of future operations and adaptive management (p. 89)." However, baseline conditions also need to be evaluated prior to construction as well as post construction (prior to operations and with operations). CDFW recommends that the EIR include an evaluation of baseline conditions or commitment to establishing baseline prior to construction and post construction (prior to operations) in addition to post construction (with operations).]	Comparison to baseline conditions as recommended by the comment is an element of the fisheries studies included in proposed adaptive management and monitoring for the north Delta intakes and will be finalized in association with CDFW and the federal fisheries agencies during project permitting.
568-177	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Operations and Maintenance - All Project Alternatives, Near-Field Effects, North Delta Exports, Entrainment, and Impingement, page 12-90. The DEIR is missing an analysis on bow wave effects; a potential hydrologic effect caused by the displacement of some	The comment states that the EIR is missing an analysis of bow wave effects and recommends such an analysis be included. However, there is qualitative discussion of a potential bow wave effect on the page referenced by the commenter.

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	water around cylindrical tee screens, as diversions pull water into the intakes. CDFW recommends the EIR include an analysis on the bow wave effect during proposed operations to better understand the hydrodynamic effect of the proposed NDD [North Delta Diversions] intake structures.]	
568-178	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Operations and Maintenance - All Project Alternatives, Near-Field Effects, North Delta Exports, Predation, page 12-91. The DEIR references Demetras et al. (2013) when discussing potential juvenile salmonid predators in the Sacramento River near the proposed intake locations. However, the maximum diversion capacities of the two facilities in Demetras et al. (2013) are 70 and 100 cfs, much lower than the proposed 3,000-7,500 cfs NDD [North Delta Diversions]. Additionally, the environmental characteristics in the study differ (e.g., water depth and predator type) from those of the Proposed Project. The proposed NDD have higher water temperatures than the locations studied under Demetras et al. (2013). As water temperatures increase, the metabolic rate and activity level of predators increase, which can increase the level of predation at a site. Based on these factors, the analysis in the DEIR appears to underestimate the potential for predatory fish to gather near in-water manmade structures by comparing the NDD to smaller scale diversions. CDFW recommends including a more thorough discussion of the differences between the NDD and the two facilities studied in Demetras et al. (2013), as these differences should be considered when applying them to the NDD.CDFW	The comment recommends including more information regarding the differences between the sites studied by Demetras et al. (2013) and the north Delta diversion. The site differences were provided in a footnote and the final paragraph of this section in Chapter 12, Fish and Aquatic Resources, acknowledges uncertainty given that this and other studies were not of long cylindrical tee fish screen structures in the north Delta; additional acknowledgement of differences was added to the Final EIR text, consistent with the commenter's recommendation. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. As recommended by the commenter, the EIR states at the end of this section that fisheries studies would be undertaken to provide information on predatory fish and predation rate at the north Delta intakes once they are operational, to inform the potential refinement of future operations and adaptive management. See response to comment 568-176 regarding comparison to baseline conditions (i.e., pre-construction) as part of these studies.

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	recommends the EIR commit to conducting pre- and postconstruction studies near the intakes to assess the abundance of predatory fish near the in-water manmade structures. There is no diversion of comparable scale and size in the Delta[Sacramento-San Joaquin Delta]. Thus, a study of the effect of large diversions on predator attraction is warranted.]	
568-179	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Operations and Maintenance - All Project Alternatives, Near-Field Effects, South Delta Exports, Juvenile Entrainment, page 12-93.] The DEIR states "The risk of winter-run Chinook salmon entrainment under existing conditions and all alternatives would be minimized by the inclusion of the various regulatory requirements from the existing permits noted above (e.g., take limits for number of winter-run Chinook salmon lost to entrainment at the south Delta [Sacramento-San Joaquin Delta] export facilities) (p. 93)". However, it is unclear how these existing regulations will minimize future Project impacts currently shown as they were designed to minimize impacts from other projects. CDFW recommends providing additional information to explain how existing regulatory requirements that were designed in the context of south Delta facility operations without the NDD [North Delta Diversions] will minimize potential Project impacts. It is unclear from the current analysis how measures at the south Delta [Sacramento-San Joaquin Delta] will minimize the additional impacts that could occur due to the addition of the NDD. The EIR should consider means to minimize NDD entrainment of Chinook Salmon.	With respect to the commenter's recommendation to provide additional information to explain how existing regulatory requirements that were designed in the context of south Delta facility operations without the north Delta diversions will minimize potential project impacts, the example provided in the text (take limits for number of winter-run Chinook salmon lost) does so because south Delta operations would be adjusted consistent with these take limits; this would occur whether there are north Delta operations occurring or not and would reflect the prevailing evidence for potential exceedance of the take limits as currently applied. (The project does not seek permits for south Delta operations and so then-existing restrictions from prevailing permits would apply and be protective of listed fish.) With respect to the EIR considering means to minimize north Delta diversions entrainment of Chinook salmon, this is assured by the screen size of the north Delta intake screens meeting agency screening criteria (see analysis in the Entrainment and Impingement discussion of the north Delta exports analysis for Impact AQUA-2 in Chapter 12, Fish and Aquatic Resources). In addition to operational criteria such as bypass flows and pulse protection measures, Mitigation Measure CMP, specifically CMP-25, addresses the significant effect of north Delta intakes affecting the routing into the interior Delta, from which there is greater risk of entrainment at the south Delta export facilities.

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568-180	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Operations and Maintenance Far- Field Effects, Indirect Mortality Within the Delta, Hydrodynamic Effects; Table 12-28, page 12-96.] The DEIR is missing discussion regarding the results in Table 12-28 Mean Channel Velocity (feet per second) in the Sacramento River Downstream of Intake C. CDFW recommends including a discussion of the results shown in Table 12-28 to help the reader interpret them. For example, why is the velocity in April not impacted to the extent that the rest of the months are by Proposed Project operations?	As recommended in the comment, the EIR includes discussion of the types of factors resulting in velocity patterns shown in the table titled Mean Channel Velocity (feet per second) in the Sacramento River Downstream of Intake C, noting that months with smaller differences such as April reflect other operational constraints on overall Delta water operations, such as meeting the longfin smelt spring outflow requirements from the CDFW ITP (see text in Impact AQUA-2 and preceding the aforementioned table in Chapter 12, Fish and Aquatic Resources).
568-181	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA- 2; Operations and Maintenance, Indirect Mortality Within the Delta, Through-Delta Survival, Table 12-30, and Table 12-31, pages 12-101 through 12-104.] Based on the results presented in Table 12-30 and Table 12-31 it is unclear if juvenile routing was separated for Sutter and Steamboat Sloughs or if these two paths were assigned as one route. Perry et al. (2018) shows that as Sacramento River flows increase, a greater proportion of fish enter the sloughs. There is a higher likelihood that fish will enter Sutter Slough because it is north of Steamboat Slough. However, as flows decrease Sutter Slough has overall lower survival compared to Sacramento River and Steamboat Slough (Perry et al. 2018). Results from Perry et al. (2018) are particularly interesting in the context of Condition of Approval 8.9.2 of the 2020 SWP [State Water Project] ITP [Incidental Take Permit] that requires investigations into the use of guidance structures to help entrain juveniles into Sutter and Steamboat Sloughs.	With respect to the specific assumptions of Perry et al. (2018) as recommended in the comment, those are provided in the published paper and include separate survival in each of Sutter and Steamboat Sloughs. Consistent with Perry et al. (2018), the EIR analysis considers Sutter and Steamboat Sloughs separately, as also recommended in the comment. Results for the analysis of flow into junctions also include separate consideration of Sutter and Steamboat Sloughs (see Appendix 12B, Bay-Delta Methods and Results).

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	CDFW recommends the EIR thoroughly explain the assumptions included in the Perry et al. (2018) model. Specifically, please explain the assumptions regarding survival rates through Steamboat and Sutter Sloughs. CDFW also requests that EIR include separate analysis of these sloughs to better understand how juvenile routing and survival would be impacted from reduced outflow because of Project operations.	
568-182	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Operations and Maintenance, Indirect Mortality Within the Delta, Through-Delta Survival, Tables 12- 30, and Table 12-31, pages 12-101 through 12-104.] The DEIR is missing a discussion of the modeling results from Tables 12-30 and 12-31. Specifically, it is not clear what is driving minimum changes in through-Delta [Sacramento-San Joaquin Delta] survival in the months of April and May. CDFW recommends the EIR include a clear discussion of how Proposed Project operations are dictating minimum changes in through-Delta survival in April and May.	Consistent with the comment’s recommendation, text has been added to provide examples of factors affecting operations and affecting the patterns in April and May. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-183	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Operations and Maintenance, Indirect Mortality Within the Delta, Through-Delta Survival, Table 12-32, page 12-105.] Table 12-32 is missing Delta Passage Model results presented by month and water year type. This presentation is needed to understand how juvenile through-Delta survival is expected to change during peak presence in the Delta [Sacramento-San Joaquin Delta]. This comment also applies to Appendix 12C, Table 12C-10.	The comment recommends including providing Delta Passage Model results by month and water-year type; however, monthly output is not available from this model, which includes juvenile Chinook salmon entry into Delta weightings (see Appendix 12B, Bay-Delta Methods and Results, for entry distribution) to provide outputs at the annual scale.

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	CDFW recommends the EIR include results of the Delta Passage Model (both for 2020 and 2040 scenarios) by month in addition to water year type to be consistent with how results are presented throughout the section "Through-Delta Survival."	
568-184	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Operations and Maintenance Far- Field Effects, Habitat Suitability, Riparian and Wetland Bench Inundation, Table 12-33 Mean Riparian and Wetland Bench inundation Index by Geographical Group, Season, and Water Year Type, pages 12-108 through 12-114.] The DEIR is missing a thorough discussion of modeling results. Specifically, why are there more frequent events of increased wetland bench inundation than riparian? Are increased diversions expected to make these areas more suitable by increasing the area with lower inundation? If so, this result is not intuitive given that the benefits are also incurred in drier water years when less flow would likely cause a more substantial negative impact (i.e., make the area less suitable). CDFW recommends the EIR expand the discussion on modeling results presented in Table 12-33 Mean Riparian and Wetland Bench inundation Index by Geographical Group, Season, and Water Year Type. Specifically, text should address why there are more frequent events of increased wetland bench inundation than riparian.	The comment provides several questions regarding riparian bench inundation and recommends further discussion. With respect to more frequent increases in bench inundation for wetland area and the associated question, the footnote included in the analysis explains the reason for the pattern, which is consistent with the explanation surmised by the comment. With respect to results not being intuitive to the commenter, given there are differences in drier years, there is very little difference evident in drier years (when north Delta diversions would be reduced), with differences between scenarios and existing conditions generally close to or equal to 0%.
568-185	[ATT 1:] Chapter 12- 12.3.3.2, Impact AQUA-2; Operations and Maintenance Far- Field Effects, Habitat Suitability, Water Temperature, page 12-115. The DEIR is missing discussion in context of the effects of various climate change scenarios on water temperature in the Sacramento-San Joaquin Delta.	Please refer to Common Response 6, Climate Resilience and Adaptation, regarding the climate change analyses contained in the EIR and the requirements of CEQA related to climate change. Chapter 12, Fish and Aquatic Resources, acknowledges that climate change and sea level rise may drive potential substantial changes in future conditions (see discussion of Future Fish and Aquatic Resources Conditions in Chapter 12). See Chapter 30, Climate Change, for consideration of climate change. Note also

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	CDFW recommends framing this analysis in the context of the effects of various climate change scenarios on water temperature in the Sacramento- San Joaquin Delta. Multiple studies suggest water temperatures will rise in the Delta leading to an increase in high mortality days for listed species and a decrease in successful adult maturation and spawning.	that the comparison of the No Project Alternative at 2040 climate to existing conditions (2020 climate) in Impact AQUA-2 also provides context on effects of climate change, but that the relative difference in water temperature between the project alternatives and either existing conditions (at 2020 climate, shown in Chapter 12) or the No Project Alternative (at 2040 climate, shown in Appendix 12C, Fish and Aquatic Resources 2040 Analysis) is minimal, consistent with the very limited effect of operations on Delta water temperature. While available information does not suggest an increase in water temperatures due to climate change would substantially exacerbate potential effects of the project, the Operations Adaptive Management and Monitoring Plan provides DWR with a tool to monitor and respond to unanticipated effects due to climate change.
568-186	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Adult Straying, page 12-120.] The statement that "hatchery fall-run Chinook salmon straying rates of fish returning to the Sacramento River are always low" (p. 120), does not accurately capture the findings of Marston et al. (2012). The study found that while average stray rates for Sacramento Basin fish released upstream from the Delta is <1%, the range was between 0% - 6%. While it is true that this is comparatively lower than for the San Joaquin Basin (average of 18%; range of 0% - 70%), the range indicates that there are some years in which stray rates are higher than others in the Sacramento River. It is also important to note that the stray rates used in this study do not account for the altered hydrology in the Delta [Sacramento-San Joaquin Delta] due to the Proposed Project. Therefore, it is inappropriate to use this study to conclude that Sacramento Basin stray rates would remain relatively low given that the north Delta exports will reduce Delta inflow from the Sacramento River. Furthermore,	The comment suggests that the EIR does not accurately capture the findings of Marston et al. (2012) because the range of straying to the Sacramento River was between 0% and 6%; however, per the discussion by Marston et al. (2012:18), such a range is consistent with what has been found to be normal stray rates. The comment suggests that it is inappropriate to use Marston et al. (2012) to conclude that stray rates would remain relatively low given that the north Delta exports will reduce Delta inflow from the Sacramento River. The EIR uses Marston et al. (2012) and considers it to be appropriate because the range of hydrological conditions is broad and does not show effects of hydrological conditions on straying rate for the Sacramento River, thereby allowing the inference that there is relatively little influence of flows within the range of likely hydrological conditions and therefore no likely difference between the project alternatives and existing conditions for potential straying of adult winter-run Chinook salmon. Please see also response to comment 568-37 regarding straying. The comment notes that Marston et al. (2012) clearly shows that San Joaquin River stray rates are negatively correlated with pulse flow magnitude and positively correlated with Delta exports, so that reduced flow is the primary factor resulting in increased stray rates. This is

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	the study clearly shows that San Joaquin River stray rates are negatively correlated with pulse flow magnitude and positively correlated with Delta exports. In other words, reduced flow is the primary factor resulting in increased stray rates. CDFW recommends that the EIR revise the text to reflect the conclusions in Marston et al. (2012) pertaining to Sacramento River Chinook salmon straying rates and the influence of reduced flows on increased stray rates. The EIR should also include a discussion of how returning adult salmonids find their way back to spawning grounds using a combination of olfactory and velocity/discharge cues (Keefer et al. 2006). It should also note that reduced flows in the Sacramento River because of the Project could be associated with a reduction of these cues, and subsequently increased straying. CDFW requests that the EIR include a flow change analysis for Sacramento River flows at Freeport during the period of adult upstream migration to better understand potential straying rates for adult salmon. Additionally, the EIR should include a discussion on the potential for increased straying into the Yolo Bypass because of the Project. It is hypothesized that tidal action provides attraction flows into the Yolo Bypass during non-flood periods, and that low Sacramento River flows amplify this by decreasing attraction to the main stem Sacramento River for adults passing through the North Delta (Gahan et al. 2016).	correct and is why the EIR includes consideration of this for San Joaquin River salmonids (Impact AQUA-4). Flow from the San Joaquin River is of considerably lower magnitude than flow from the Sacramento River, which presumably explains the San Joaquin River and south Delta export correlations with straying found by Marston et al. (2012); the Sacramento River straying levels are low across a broad range of hydrological conditions. From the results from Marston et al. (2012) for the Sacramento River, there is no basis for adding discussion of the cues suggested by the comment; operations of the north Delta intakes are constrained by operational criteria, thereby limiting effects on Sacramento River flow passing downstream. The comment suggests inclusion of discussion of the potential for increased straying into the Yolo Bypass because of hypothesized increases in tidal action increasing attraction into the Yolo Bypass during non-flood periods, citing the hypothesis by Gahan et al. (2016). Gahan et al. (2016) consider only “below average” Sacramento River conditions and there is no comparison to rates of straying during higher Sacramento River flow from which to make comparisons in order to assess the extent to which Sacramento River flows could have affected conditions. As noted above, operations of the north Delta intakes are constrained by operational criteria, thereby limiting effects on Sacramento River flow passing downstream. Gahan et al. (2016) also suggest that other factors affect straying into the Yolo Bypass during non-flood period, in particular operations of the Knights Landing Outfall Gates; such factors would not be affected by operations of the north Delta intakes.
568-187	[ATT 1:] Chapter 12- 12.3.3.2, Impact AQUA-2; Riparian and Wetland Bench Inundation, page 12-106. The DEIR does not provide a clear description of whether there is other “unrestored” (e.g., natural) juvenile rearing habitat that would be impacted by the Project. CDFW requests that the EIR describe whether there is	Consideration of potential effects to all juvenile salmon rearing habitat in the Delta and its resulting effects on salmonid population performance is provided in the Final EIR with the Sacramento River Winter-Run Chinook Salmon Life Cycle Model (see additional information in Sacramento River Winter-Run Chinook Salmon Life Cycle Model Description and Results, a new attachment to Appendix 12B, Bay-Delta Methods and Results, in the Final EIR).

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	additional juvenile rearing habitat (other than restored benches) that would be impacted by the Proposed Project. If so, additional analyses should be conducted, so that potential impacts to all juvenile rearing habitat are assessed.	
568-188	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA- 2; Riparian and Wetland Bench Inundation, page 12-106.] In the DEIR's bench inundation analysis, the suitability of bench habitat is based entirely off the suitable depth criteria for juvenile winter-run Chinook salmon from USFWS (2005). Typically, approximation of suitable juvenile rearing habitat includes a velocity component as well. If water depth is suitable but velocities are too high, juveniles are unable to utilize the habitat for rearing. Additionally, the analysis represents bench habitat in only one dimension (length). Juvenile rearing habitat should be quantified as an area, given that fish will theoretically utilize the habitat along its entire length and width, as long as it meets whatever criteria you have specified (in this case, suitable depth). CDFW recommends that the EIR either justify the exclusion or include the use of a suitable velocity criteria in the calculation of bench inundation indices. Additionally, the EIR should either justify why using length only (and not width as well) is appropriate for this analysis or include a width dimension for the calculation of bench habitat indices and mitigation calculations.	With respect to the comment recommending inclusion of velocity information, velocity outputs were not available for this analysis. Consideration of the benches as a linear measurement is consistent with previous application of the method. Mention of these factors has been added to Appendix 12B, Bay-Delta Methods and Results. It is expected that bench width would be further considered during refinement of Mitigation Measure CMP (see Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, specifically CMP-26); for reference, the benches included in the analysis ranged from less than 10 feet wide to approximately 60 feet wide. Note that velocity is a criterion in the Sacramento River Winter-Run Chinook Salmon Life Cycle Model, for which further information has been included as an attachment to Appendix 12B; the Life Cycle Model also includes consideration of areal extent of rearing habitat, consistent with the comment. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-189	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Riparian and Wetland Bench Inundation, Table 12-34, pages 12-106; 12-115.] The text in the DEIR provides percent differences relative to	Percentage change has been added to the results as requested in the comment. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	existing conditions for changes in bench inundation, but Table 12-34 only provides changes in linear feet. It is difficult to understand where the greatest percent change in bench inundation is located without having data presented as percent change. CDFW requests that the EIR express the difference from existing conditions of bench lengths provided in Table 12-34 as percent differences.	
568-190	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Operations and Maintenance, Life Cycle Modeling, Table 12-43. OBAN Winter-Run Chinook Salmon Escapement Results, page 12-123.] It is unclear how to interpret the OBAN modeling results in Table 12-43, as the DEIR mentions median abundance in the discussion but shows mean escapement in the tables. CDFW recommends including discussion to help the reader interpret OBAN modeling results in Table 12- 43. Additionally, CDFW recommends including results broken down by water years to serve as a comparison with the IOS results. CDFW also recommends including OBAN results for egg to juvenile survival for comparison with the IOS results provided.	With respect to the comment regarding the table cited by the comment (titled OBAN Winter-Run Chinook Salmon Escapement Results: Mean Difference (Project Alternatives Minus Existing Conditions, Based on Annual Median Escapement) and Mean Probability of Greater Escapement under Project Alternatives Compared to Existing Conditions) showing mean escapement, this is actually showing mean difference in median escapement; the table caption has been clarified to discuss this. With respect to provision of results by water year and egg to fry survival, there is further discussion provided in Appendix 12B, Attachment 12B.1, Draft Results of OBAN Analysis of Delta Conveyance Project Alternatives 2020, with generally similar results between the project alternatives and existing conditions, consistent with the other life cycle models.
568-191	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-2; Operations and Maintenance, Maintenance Effects, page 12-125.] The DEIR is missing an analysis of impacts because of woody debris removal at each intake for long-term maintenance and associated mitigation. Removal of woody debris may impact species by eliminating cover, potentially increasing localized water temperatures, and or decreasing food sources.	Removal of woody debris for maintenance as mentioned in the comment means freeing of the debris for it to continue moving downstream, as opposed to removal from the waterbody as implied by the comment. Therefore, there would not be less woody debris as a result of maintenance.

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	CDFW recommends including analysis of impacts because of woody debris removal at each intake and mitigation for those impacts.	
568-192	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-3; Operations and Maintenance, page 12-132.] The DEIR is missing a thorough discussion and/or analysis of the risks of impingement and increased predation for spring-run Chinook salmon at the NDD [North Delta Diversions]. Although spring-run size distribution may be larger than winter-run Chinook salmon, there is still a risk of impingement and predation [at] the NDDs. CDFW recommends including a thorough discussion and analysis of risks of impingement and increased predation for spring-run Chinook salmon at the NDD.	As recommended in the comment, additional discussion has been added for risk of impingement and predation, consistent with the winter-run Chinook salmon analysis. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-193	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-3; Operations and Maintenance, page 12-132.] Table 12-48 should display data by month and water year type as opposed to total average for the water year only. Assessment of the results by water year type and month will provide greater clarity on potential impacts to spring-run Chinook salmon survival. Specifically, it is not clear why only Alternatives 2b and 4b show variation in the change of through-Delta [Sacramento-San Joaquin Delta] survival in wet and below normal water year types when all other year types and Alternatives show the same change in survival irrespective of diversion capacity. Through-Delta survival is generally understood to be strongly influenced by flow through the Delta and the insensitivity of these results to variation in diversion rates is difficult to understand (Singer et al. 2020; Cordoleani et	The comment recommends inclusion of results broken down by water year type and month. With respect to the Chapter 12 table mentioned in the comment titled Through-Delta Survival of Juvenile Spring-Run Chinook Salmon, Averaged by Water Year Type, Based on the Delta Passage Model, please see response to comment 568-183; the same response applies to the Chapter 12 table titled Through-Delta Survival of Juvenile Spring-Run Chinook Salmon from the San Joaquin River Basin, Averaged by Water Year Type, Based on the Structured Decision Model Routing Application, for which additional discussion explaining the results was added, consistent with the recommendation. With respect to the table titled Entrainment Loss of Juvenile Spring-Run Chinook Salmon at SWP Banks Pumping Plant, Averaged by Water Year Type, Based on the Salvage-Density Method and the table titled Entrainment Loss of Juvenile Spring-Run Chinook Salmon at CVP Jones Pumping Plant, Averaged by Water Year Type, Based on the Salvage-Density Method, results broken down by water year type and month are provided in Appendix 12B, Bay-Delta Methods and Results, of

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	al. 2018). Additionally, modeling results and model uncertainty are not thoroughly discussed making it hard for the reader to understand what is driving some of these results. CDFW recommends including results broken down by month and water year, consistent with results provided for winter-run Chinook salmon. This comment applies to Tables 12-48, 12-49, 12-50, and 12-51. CDFW also recommends including a thorough discussion of modeling results to help readers understand what is driving the results presented.	the Final EIR, consistent with the recommendation.
568-194	[ATT 1: Chapter 12- 12.3.3.2, Impact AQUA-3; Operations and Maintenance; Table 12-51, page 12-134.] Table 12-51 shows changes in through-Delta [Sacramento-San Joaquin Delta] survival of spring-run Chinook salmon originating in the San Joaquin River, where survival is historically very low. Slight changes in the San Joaquin survival rate (as noted in the table with the same absolute values but different percent change values) can impact through-Delta survival to a much greater extent. It would be helpful to see more decimal places and results broken down by month and water year type. CDFW recommends the EIR display through-Delta survival results with a greater number of significant digits so that small, yet potentially biologically significant, impacts can be identified and mitigated.	The comment recommends displaying a greater number of decimal places. Such a display is not warranted given that the tabular summary already shows three decimal places; this reflects the very low values under any scenario. See responses to comments 568-183 and 568-193 and regarding presentation of results by month and water year type.
568-195	[ATT 1:] Chapter 12- General comment on non-CESA [California Endangered Species Act]- listed species impacts, Multiple pages. The DEIR states that operation and maintenance effects will be	The comment recommends that far-field effects be analyzed for non-CESA/ESA-listed special-status species and suggests that the EIR does not analyze far-field impacts on these species. To the extent that quantitative information is available to inform potential far-field effects, that information has been used. For example, relationships between X2 and

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	less than significant for non-CESA/ESA [Federal Endangered Species Act]-listed special status species. However, the DEIR only utilizes the Salvage-Density Method to determine whether operations and maintenance activities will impact non-ESA/ESA listed special status species and does not analyze far-field impacts (e.g., aquatic weed establishment, decreased riparian habitat, decreased stream width) to non-CESA/ESA listed special status species. CDFW recommends that the EIR analyze far-field effects to non-CESA/ESA listed special status species and develop specific enforceable measures to decrease all significant impacts to less than significant.	survival or abundance are included for a number of species (starry flounder, California bay shrimp, striped bass, and American shad). Mitigation undertaken for listed species would be expected to also lessen the potential for effects on unlisted species, in particular Mitigation Measure CMP (in particular CMP-25, CMP-26, CMP-27, and CMP-28). With respect to aquatic weeds, factors affecting the distribution of invasive aquatic macrophytes include light and carbon dioxide, temperature, hydrology, and salinity (Christman et al. 2023). Of these, the project alternatives would entrain sediment but, as described for delta smelt in Chapter 12, Fish and Aquatic Resources, Impact AQUA-6, such effects are not concluded to be significant related to turbidity and would be addressed with Environmental Commitment EC-15. With respect to hydrology, which includes factors such as water velocity, the north Delta intakes operational criteria would limit the potential for negative effects and, as discussed in Impact WQ-14 in Chapter 9, Water Quality, there would be limited effects on water velocity as a result of operations of the project alternatives. As also discussed in Impact WQ-5, the effects of the project alternatives on salinity (electrical conductivity) are concluded to be less than significant. As such, there are not expected to be effects on aquatic weeds and would not change the less-than-significant conclusions for aquatic species.
568-196	[ATT 1:] Chapter 12-12.3.3.2, Impact AQUA-6, Operations and Maintenance - All Project Alternatives, North Delta Exports, page 12-155. The DEIR states "The low population abundance of Delta smelt in recent years suggest that few Delta smelt would be exposed to potential near-field effects of the north Delta diversion intakes, including entrainment, impingement, predation, and upstream passage restriction" (p. 155). This species' extremely low abundance warrants very careful consideration of potential Project impacts. In addition, the discussion provided in this section has not addressed if the trend will continue after	The comment recommends incorporation of an analysis which establishes assumptions of delta smelt supplementation. The EIR includes qualitative discussion of supplementation in the section cited by the commenter, i.e., "although absolute population abundance could increase because of hatchery supplementation (U.S. Fish and Wildlife Service 2019:153), for example, the proportion of the delta smelt population exposed to the north Delta intakes would be low." This is appropriate given that hatchery supplementation details will likely change in the future and because of the location of the north Delta intakes, the proportion of the population exposed would remain low. Also see response to comment 568-39 regarding experimental releases of delta smelt.

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	ongoing experimental releases of cultured Delta smelt. CDFW recommends incorporating an analysis which establishes assumptions of Delta Smelt supplementation into the EIR to better address impacts of the Proposed Project on Delta smelt population abundance with hatchery supplementation.	
568-197	[ATT 1:] Chapter 12- 12.3.3.2, Impact AQUA-6, Operations and Maintenance - All Project Alternatives, North Delta Exports, Upstream Migration effects and Predation, pages 12-156, 12-157. The DEIR states "...the cylindrical tee fish screens and their associated manifolds, as well as the support piles for the log boom structure may provide velocity refuge for upstream migrating adult Delta smelt occurring near the intakes, thereby reducing the extent of the potential negative effect" (p.12-156,157). This language conflicts with the description of a bow wave effect stated on pg. 12-90; no explanation is provided addressing why bow waves would deter salmonids but provide a refuge for Delta smelt. CDFW requests that the EIR clarify whether the hydraulic effects will provide refuge, or deter fish, and provide further analysis of the effect in Appendix 12B.11.	The text suggested to be conflicting in the comment is attributable to juvenile salmonids migrating downstream, versus adult delta smelt migrating upstream; therefore, there is no conflict as suggested by the comment. The referenced text does not mention bow waves specifically; bow waves are created by the physical structure changing the flow fields, with the intake structure including features such as the manifolds possibly providing velocity refuge for fish migrating upstream, as mentioned in the text.
568-198	[ATT 1:] Chapter 12- 12.3.3.2, Impact AQUA-6, Operations and Maintenance - All Project Alternatives, North Delta Exports, Entrainment, and Impingement, page 12-159. Smelt eggs are demersal and adhesive, but their risk of entrainment depends upon what substrate they were spawned over. If spawned over a fixed substrate, then the risk of entrainment for eggs is zero, as long as they were not	The comment recommends inclusion of language that acknowledges that eggs may have reduced entrainment risk relative to other life stages, but they are still at risk of entrainment. Such text is provided in the footnote within the section cited by the commenter.

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	mechanically displaced (e.g., scoured off by high flows). If spawned on a sand substrate, they might be subject to suspension at higher flows. Smelt larva are demersal but swim into the water column to feed, and thus would be vulnerable to entrainment if hatched upstream on the same side of the river as the diversions (or were transported by flow to the same side as the diversions). CDFW recommends that the EIR include language that acknowledges that eggs may have reduced entrainment risk relative to other life stages, but are still at risk of entrainment, depending on the substrate over which they are spawned.	
568-199	[ATT 1:] Chapter 12- 12.3.3.2, Impact AQUA-6, Operations and Maintenance - All Project Alternatives, North Delta Exports, Entrainment, and Impingement, page 12-160. In discussing Entrainment and Impingement risk (Impact Aqua-6) the DEIR estimates the overall Delta smelt population exposed to the North Delta Diversion. The DEIR should recognize that climate change will likely result in rising sea level and salinity intrusion, which could expose a greater proportion of the Delta smelt population to the effects of the NDD [North Delta Diversions] in the future if X2 is shifted east. CDFW recommends that the EIR acknowledge that rising sea level and salinity intrusion may affect the number Delta smelt that could be exposed to the effects of the NDD.	The comment recommends that the EIR acknowledge that rising sea level and salinity intrusion may affect the number of delta smelt that could be exposed to the effects of the north Delta diversions. Although salinity may increase long-term, the project alternatives would be operated to maintain salinity objectives, therefore limiting the extent of potential changes. For example, the percentage of years with X2 less than 85 km at 2020 climate as discussed in Chapter 12, Fish and Aquatic Resources, is not greatly different from 2040 climate, as shown in Appendix 12C, Fish and Aquatic Resources 2040 Analysis. Changing tidal influence from sea level rise would not be expected to greatly change the need for delta smelt to undergo active swimming to migrate upstream in the north Delta intake vicinity, as presumably occurs under existing conditions.
568-200	[ATT 1:] Chapter 12- 12.3.3.2, Impact AQUA-6, Operations and Maintenance - All Project Alternatives, North Delta Exports, Entrainment and Impingement, Table 12-88, page 12-160. The data presented in Table 12-88 is difficult to interpret. It is	The comment recommends including a table with the minimum percentiles for each month; this is provided in the table cited in the comment. More information has been provided in the notes at the bottom of the table to aid interpretation of the information conveyed in the table. None of the revisions described in the EIR resulted in a new significant environmental

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	unclear how "minimum percent" is defined, and subsequently, how it defines the additional percentiles listed. CDFW recommends that the EIR include a table listing the minimum percentiles for each month.	impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-201	[ATT 1:] Chapter 12- 12.3.3.2, Impact AQUA-6, Operations and Maintenance - All Project Alternatives, Habitat Effects, Food Availability, page 12-167. The DEIR does not explain why less outflow is needed for meeting Delta [Sacramento-San Joaquin Delta] salinity requirements under the Project alternatives. It is CDFW's understanding that south Delta exports would not be reduced to compensate for increased diversions from the north. CDFW recommends that the EIR clarify whether the south Delta exports will or will not be reduced to compensate for increased diversions from the north. If south Delta exports will not be reduced CDFW recommends that the EIR explain why less outflow would be needed for meeting Delta salinity requirements under the Project alternatives.	Example modeling outputs illustrating lower south Delta exports in the months discussed in the section cited by the commenter are provided in the figure titled SWP and CVP South Delta Exports Monthly Volumes (SouthDelExports), Probability of Exceedance for Existing Conditions, April to September, found in Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, Attachment 3, CalSim 3 Model Results for Existing Condition and Alternatives at 2020. Cross-reference to the discussion of the factors affecting changes in flow, including Delta outflow needed for salinity requirements, in Chapter 6, Water Supply, has been added to the section cited by the commenter. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. In addition, please refer to Common Response 3, Alternatives Development and Description, for additional explanations of how seasonal shifting from the south to the north Delta diversions would provide additional flexibility of SWP operations to meet water quality requirements from late spring to early fall.
568-202	[ATT 1:] Chapter 12- 12.3.3.2, Impact AQUA-6, Operations and Maintenance - All Project Alternatives, CEQA [California Environmental Quality Act] Conclusions, page 12-179. While the north Delta [Sacramento-San Joaquin Delta] intakes could result in a low percent reduction in sediment entering the Delta, even this small change could be impactful because sediment increases turbidity which is an important Delta smelt	The comment notes that sediment increases turbidity, which is an important habitat attribute and recommends further discussion on resuspension of sediment and effects of habitat on delta smelt. Such discussion is provided earlier in in Chapter 12, Fish and Aquatic Resources, Impact AQUA-6 (see the sediment entrainment analysis of the Habitat Effects section).

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	habitat attribute. CDFW recommends further discussion on resuspension of sediment and the effect of available habitat for Delta smelt.	
568-203	[ATT 1:] Chapter 12- 12.3.3.2, Impact AQUA-7, Operations and Maintenance - All Project Alternatives, South Delta Exports, page 12-189. The DEIR notes that overestimates of Longfin smelt entrainment loss are only likely to occur in very wet years. However, Longfin smelt entrainment loss would likely be underestimated in dry years, as most fish are in Suisun and upstream regions and not in the bay. Impacts from the underestimate of Longfin smelt entrainment are further compounded by poor survival in drier years. Additionally, the DEIR did not include an analysis describing variation in downstream habitat suitability with changes in flow caused by Project operations. There is the potential for the Project to reduce downstream habitat suitability by reducing Delta [Sacramento-San Joaquin Delta] outflow and thereby increasing salinity above levels that larval Longfin smelt can tolerate. CDFW recommends that the EIR include language acknowledging that Longfin smelt entrainment loss is likely underestimated in drier years. Additionally, the EIR should include a detailed analysis assessing variation in downstream habitat suitability with changes in flow caused by Project operations.	The comment recommends inclusion of language acknowledging that longfin smelt entrainment loss is likely underestimated in drier years. Whereas overestimation of entrainment may occur in very wet years, as mentioned in the comment and acknowledged in the EIR, it is unclear why there would be underestimation in dry years, as suggested by the comment; this would imply that longfin smelt had gone upstream of the area covered by the sampling programs describing the population's distribution, for which the comment provides no supporting evidence. A peer-reviewed study published since publication of the Draft EIR also did not suggest there was underestimation of larval distribution at low salinity and concluded that larval entrainment loss was too low to measurably influence population dynamics (Kimmerer and Gross 2022). With respect to the further recommendation in the comment to include an analysis assessing variation in downstream habitat suitability with changes in flow caused by Project operations because of increases in salinity above levels that larval longfin smelt can tolerate, operations-related effects on salinity-based habitat and their population-level outcomes are inherently represented by the Delta outflow-abundance index calculations provided in the EIR. In addition, the EIR found very little potential for negative effects on food availability as a result of differences in Delta outflow. Note that the EIR also concluded that the operations impacts of the project alternatives would be significant for longfin smelt and require mitigation to reduce effects to less than significant.
568-204	[ATT 1:] Chapter 12- 12.3.3.2, Impact AQUA-7, Habitat Effects, Delta Outflow - Abundance, page 12-195.	The comment suggests that the Nobriga and Rosenfield (2016) modeling approach is used, which is not the case; in fact, it is a different method, as described in Appendix 12B, Bay-Delta Methods and Results (see citation in

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	In 2019, CDFW considered DWR's [Department of Water Resources] application of the Nobriga and Rosenfield (2016) Longfin Smelt flow abundance model (Rosenfield 2020). The same model approach is used here in the DEIR. The model used in the DEIR, presents violin plots which include the variability of all factors that affect Longfin Smelt abundance (in addition to Delta [Sacramento-San Joaquin Delta] outflow) and, as a result, do not provide a true comparison of flow scenarios. Additionally, changes in flow result in disproportionate changes in the modeled indices. Thus, the application of this model is not appropriate as prediction error is high, and the model consistently underestimates the FMWT index. CDFW requests that the EIR address previous critiques of the model application by comparing alternatives for each run rather than all runs for each alternative. Additionally, results should be presented as a proportion of change in modeled indices for each run and should provide a full discussion of the uncertainty associated with the results.	the section cited in the comment), developed as a result of comments suggesting the Nobriga and Rosenfield (2016) model was not appropriate. Incorporation of model uncertainty as illustrated by 95% intervals for individual years across the time series is appropriate given that outflow is not the only correlate of trends in abundance, and such presentation is consistent with recommendations for representation of model uncertainty (Simenstad et al. 2016:50). Summary of annual proportional change in modeled indices as suggested in the comment is not an appropriate use of modeling results based on the CalSim model, given factors such as antecedent conditions. Provision of tables of differences in means, as done in the EIR (see the table in Chapter 12, Fish and Aquatic Resources, titled Predicted Mean Longfin Smelt Fall Midwater Trawl Index Averaged by Water Year Type, Based on Delta Outflow-Abundance Index Method), provides focus on differences in mean indices, which is analogous to the "true comparison of flow scenarios" that the comment suggests is not provided in the analysis. Uncertainty in the results, as recommended in the comment, is provided by illustration of the 95% prediction intervals in the plot of fall midwater trawl index by scenario (text has been added to the Final EIR noting the plot represents the prediction intervals) and the discussion of the probability of project alternatives being less than existing conditions. Note that the EIR concluded that the operations impacts of the project alternatives would be significant for longfin smelt and require mitigation to reduce effects to less than significant.
568-205	[ATT 1:] Chapter 12- Impact AQUA-11: Effects of Operations and Maintenance on Water Conveyance Facilities on Native Minnows (Sacramento Hitch, Sacramento Splittail, Hardhead, and Central California Roach), page 12-214. The statement made in the DEIR is true, but only in wet years. Additionally, the contribution of reproduction in the Sutter Bypass can be sizable (Feyrer et al. 2005) and reproduction above the north Delta [Sacramento-San Joaquin Delta] intakes	The comment suggests that the statement made on Draft EIR p. 12-214 is not true; given the remainder of the comment, this is presumably referring to the sentence beginning: "The bulk of Sacramento splittail reproduction occurs on inundated floodplains ..." The statement is correct at the level of the species, as most reproduction does occur on floodplains when considering all years (wet and dry), but the comment interprets the statement as only being applicable in wet years. The text in Chapter 12, Fish and Aquatic Resources, has been updated to include the word "generally." This revision does not result in a change in impact

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	is sizable as well, particularly as water levels decline in spring (Feyrer et al. 2005). Although young-of-the-year are recognized to move downstream at 25-50 mm, this may be a function of gear selectivity; larvae are also dispersed from floodplains (Baxter et al.1996) in the 7-12 mm range (Baxter unpublished). Also, historical USFWS beach seining shows substantial age-0 densities (the bulk of the catch) upstream of proposed north Delta intakes in 3 of 6 years investigated and these fish only represent those ≥ 25 mm (Sommer et al. 1997), even though splittail < 25 mm are caught (historically, records of some < 25 mm splittail remain in the USFWS database; a 25 mm minimum size was implemented in the 1990s to speed field and lab identification). Splittail of all ages tend to be edge oriented, which would put them in proximity to shoreline or nearshore intakes (Baxter unpublished). CDFW recommends revising splittail effects to include the likelihood of periodic events where larval and small juvenile splittail are encountering the proposed north Delta intakes. If screen porosity and approach velocities are as specified, entrainment and impingement should not have large effects.	determination or require additional mitigation measures that DWR is unwilling to commit to. The comment recommends revising splittail effects to include the likelihood of periodic events where larval and small juvenile splittail are encountering the proposed north Delta intakes. This is done later on in this section, for example, discussing the limited north Delta diversions during the larval period (note that the reference to the percentage of flow diverted in Impact AQUA-6 has been corrected). As the comment notes and consistent with the information in Impact AQUA-11, entrainment and impingement should not have large effects on Sacramento splittail given the specifications of the proposed fish screens at the north Delta intakes.
568-206	[ATT 1:] Chapter 12- Impact Aqua-13: Effects of Operations and Maintenance of Water Conveyance Facilities on Northern Anchovy, page 12-222. Northern anchovy distribution in the upper estuary will likely be affected by reduced food availability (see Kimmerer 2006) in some water year types as noted in Table 12-0. CDFW recommends that the EIR acknowledge and analyze this potential impact.	The comment recommends acknowledging and analyzing the potential effect of reduced food availability under the project alternatives, citing Kimmerer (2006). Kimmerer (2006) shows that the distribution of northern anchovy under existing conditions is limited in the upper estuary because of food limitation caused by invasive clams, so distribution of the population would in any case be downstream, thereby limiting potential effects of the project alternatives. As noted in the EIR, neither indices of northern anchovy abundance nor indices of northern anchovy habitat extent are related to X2, which is an index of Delta outflow and its effects; this indicates that operations-related effects on food such as mentioned in the Chapter 12, Fish and Aquatic Resources, table titled Comparison of

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		Impacts on Fish and Aquatic Resources by Alternative (Table 12-0 as cited in the comment) would not have significant effects.
568-207	[ATT 1:] Chapter 12- Impact Aqua-13: Effects of Operations and Maintenance of Water Conveyance Facilities on Northern Anchovy, page 12-222. Citation should be Fleming 1999 rather than Baxter 1999. CDFW requests that the EIR revise the citation.	The citation has been revised as suggested. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-208	[ATT 1:] Chapter 12- Impact Aqua-14: Effects of Operations and Maintenance of Water Conveyance Facilities on Striped Bass Impact Aqua-14: page 12-224. To be consistent with previous text (e.g., salvage density results pg. 12-223, lines 39-40), this sentence should acknowledge that results indicate similar or negative effects on survival and abundance for all alternatives. CDFW recommends that the EIR revise the text for consistency and cumulative effects.	The text has been revised consistent with the recommendation. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-209	[ATT 1:] Chapter 12- Impact Aqua-14: Effects of Operations and Maintenance of Water Conveyance Facilities on Striped Bass, page 12-227. The conclusions presented in AQUA-14, generally acknowledge lower entrainment under Project alternatives. However, the conclusions do not acknowledge that the results also show generally lower survival or abundance. CDFW recommends acknowledging lower survival and abundance for consistency and cumulative effects.	See response to comment 568-208 regarding Chapter 12, Fish and Aquatic Resources, Impact AQUA-14 conclusions; the text has been revised to indicate the patterns are general. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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568-210	[ATT 1:] Chapter 12- Impact AQUA-15: Effects of Operations and Maintenance of Water Conveyance Facilities on American Shad, page 12-230. American shad are broadcast spawners so their larvae have a high chance of being entrained through the fish screens and removed from the Sacramento River, which would have impacts to the system and the species. CDFW recommends that the EIR more thoroughly analyze American shad larval impacts.	The comment recommends additional analysis of American shad larval impacts. However, the analysis included in the EIR already analyzes potential effects to early life stages and notes limited entrainment risk because of seasonality of risk relative to north Delta intake operations.
568-211	[ATT 1:] Chapter 12- Impact Aqua-15: Effects of Operations and Maintenance of Water Conveyance Facilities on American Shad, page12-231. The conclusions presented in AQUA-15, correctly acknowledge little difference in abundance between Project alternatives and existing conditions, but do not acknowledge that all those differences are negative. CDFW recommends revising the EIR conclusions presented in AQUA-15 to point out consistently negative differences in abundance indices between existing conditions and project alternatives.	The conclusion has been updated consistent with the recommendation. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-212	[ATT 1: Chapter 12- Impact AQUA-16: Effects of Operations and Maintenance of Water Conveyance Facilities on Threadfin Shad, page 12-235. Threadfin larvae could potentially be entrained in Project intakes, which could adversely impact juvenile salmonids, as they are a food source.	Examination of available literature (Ganssle 1966; Sasaki 1966; Kjelson et al. 1982; Sommer et al. 2001; MacFarlane and Norton 2002) does not indicate threadfin shad are a major food item of juvenile salmonids, therefore any effects from entrainment in the manner suggested in the comment would be limited. Furthermore, as noted in the analysis for Impact AQUA-16 in Chapter 12, Fish and Aquatic Resources, there would be limited effects of the project alternatives on threadfin shad because of the geographic location of the north Delta intakes relative to preferred

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	CDFW recommends that the EIR discuss and analyze the potential for threadfin larvae entrainment into the Project intakes, as this could impact juvenile salmonids.]	habitat of threadfin shad.
568-213	[ATT 1:] Appendix 12A- 12A.1 Fish and Aquatic Resources, page 12A-1. The DEIR states that the rationale to include species for description is that they were dealt with in previous env. Documents. This seems like a citation/source of information, not a rationale for inclusion. CDFW recommends revising the EIR to include species for description because of one or more of the following rationale: 1) survival or abundance of one or more life stages is linked to a measure of flow, 2) one or more life stages is known to be entrained or anticipated to be entrained in planned or current export facilities, or 3) species that are listed or candidate for Threatened or Endangered Species status.	The comment suggests that the cited page provides a rationale for species inclusion in the EIR based on inclusion in previous documents. The cited page in fact states that the descriptions were adapted and updated from recent documents. The rationale for species inclusion is provided in Chapter 12, Fish and Aquatic Resources, and includes the types of factors recommended in the comment (see the section titled Fish and Aquatic Species of Management Concern).
568-214	[ATT 1:] Appendix 12A- 12A.1.1 Delta Smelt, page 12A-2. To this point in the section there has been no mention that Delta smelt are batch spawners capable of repeatedly spawning in a single spawning season, nor what proportion of females achieve spawning size through the spawning season. CDFW recommends the EIR include: 1. additional text describing batch spawning and the potential for Delta smelt to spawn repeatedly during the spawning season if water temperatures remain in the range of about 9-18°C.; 2. that a sizable portion of the population achieves spawning size prior to the start of spawning, usually February; most achieve spawning size by March and all by April; 3. some mention	The text in the cited section has been augmented with additional information as supported by the reference suggested in the comment's recommendation. However, mention of all delta smelt likely spawning successfully at least once is not stated by the cited reference in the recommendation and so this portion of the recommendation has not been added. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	should be made that females spawning in February could be prepared to spawn again in March or April. That all females achieve spawning size by April indicates that all are likely to spawn successfully at least once (Damon et al. 2016).	
568-215	[ATT 1:] Appendix 12A- 12A.1.1 Delta Smelt, page 12A-2. Spring Kodiak Trawl begins in December to document Delta smelt distribution prior to high winter flows, smelt pre-spawning movements, and high exports which could increase risk of entrainment. CDFW recommends that the text in the EIR be corrected to state that Spring Kodiak Trawl begins in December.	The text has been left as is because examination of available information such as the Spring Kodiak Trawl website still states January as the first month of sampling; the timing of the start of the survey does not affect the EIR's conclusions regarding potential impacts on delta smelt.
568-216	[ATT 1:] Appendix 12A- 12A.1.1 Delta Smelt, page 12A-3. Bennett et al. (2002) is a better citation for larval and juvenile depth distribution. CDFW recommends using Bennett et al. (2002) as a reference.	The EIR includes the recommended citation. The recommendation does not indicate that the cited studies in the EIR contradict the information in the recommended reference.
568-217	[ATT 1:] Appendix 12A- 12A.1.1 Delta Smelt, page 12A-3. The text does not begin by explaining the primary reason for the high frequency of zeros. CDFW recommends stating that a large number of zero catches occurs primarily because Delta smelt aggregate into relatively tight schools located in large areas of open water (Polansky et al. 2018).	The recommended concept was added to the Final EIR text. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-218	[ATT 1:] Appendix 12A- 12A.1.1 Delta Smelt, page 12A-6. The DEIR states "Delta smelt are most vulnerable to entrainment at the SWP [State Water Project] and CVP [Central	The text has been revised consistent with the recommendations. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which

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	Valley Project] pumps when, as adults, they move from upstream into the central/southern Delta [Sacramento-San Joaquin Delta] or as larvae, when they move from fresh water in the southern and central Delta downstream into the west Delta and Suisun Bay/Marsh" (p.12A-6). This is not quite the correct description for Delta smelt entrainment. CDFW recommends: 1. Remove the 1st "from" in line 25, to read: "...they move upstream into the central/southern Delta...". 2. Revise the text to note that as larvae, Delta Smelt are most at risk as soon as they hatch until they successfully migrate west, not just during the movement.	DWR was unwilling to commit.
568-219	[ATT 1:] Appendix 12A- 12A.1.1 Delta Smelt, page 12A-8. Unpublished gear comparisons from the 1990s onward and more recent gear evaluation work confirm primary, not exclusive, surface orientation of Delta smelt from about 30 mm (see Mitchell et al. 2017). Juvenile, sub-adult and adult fish move laterally (and vertically) with the tides to reposition or maintain position longitudinally in the estuary (Bennett and Burau 2015). CDFW recommends changing the language to reflect results in published research, with associated citations.	The language has been changed consistent with the recommendation. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-220	[ATT 1:] Appendix 12A- 12A.1.2 Longfin Smelt, page 12A-21. Catchability may be a minor issue, because for most of the estuary light penetration is limited to the upper 2-3 m, particularly when longfin smelt are present. Rosenfield and Baxter (2007) do not mention any biases. Differences in catches between Mid Water Trawl (MWT) and Otter Trawl (OT) reflect differences in fish distribution and net deployment	The section has been revised consistent with the recommendation in the comment by removing the statements associated with the two references cited in the comment. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	(MWT doesn't get to channel bottom or remain there long; OT does on both accounts). Lastly, CDFW does not understand what is meant by the DEIR stating "...used in surveys that suffer from mismatches in location and timing with the longfin smelt spawning season (Mahardja et al. 2017)" or this statement's relation to detection bias. CDFW recommends that this section be revised as the implication is that the surveys are doing a poor job of capturing Longfin smelt due to a mismatch in locations and timing. CDFW does not believe Mahardja et al. 2017 supports this statement. CDFW recommends elaborating on this statement in the EIR or consider removing it.	
568-221	[ATT 1: Appendix 12A- 12A.1.3 - Winter-Run Chinook Salmon - Sacramento River ESU, Figure 12A-6, page12A-22.] Data from 2019 and 2020 was included in Figure 12A- 6 in the DEIR, but not data from 2021. CDFW recommends that the EIR include data from 2021 in Figure 12A-6.	The figure has been updated as recommended. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-222	[ATT 1: Appendix 12A- 12A.1.3 - Winter-Run Chinook Salmon - Sacramento River ESU, page12A-22.] The quoted sentence implies that predation is the leading cause of mortality for juvenile salmonids in the Delta [Sacramento-San Joaquin Delta]. CDFW recommends that the EIR include a more comprehensive description of the factors that lead to increased mortality in the Delta, alongside analyses (e.g., acoustic telemetry) that	It is unclear which quoted sentence on p. 12A-22 the comment is referring to. The section describes examples of key research into predation mortality. The type of information recommended for inclusion in the comment is found later in the same section, for example, discussion of juvenile migration corridors.

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	identify through-Delta survival across different environmental conditions.	
568-223	[ATT 1: Appendix 12A- 12A.1.3 - Winter-Run Chinook Salmon - Sacramento River ESU, page 12A-23.] The DEIR misrepresents the timing of when juvenile winter-run Chinook salmon enter the Delta [Sacramento-San Joaquin Delta]. Rotary screw trap (RST) data at Knights Landing has shown that juvenile winter-run Chinook salmon begin entering the Delta as early as August. CDFW recommends that the EIR be revised to show that juvenile winter-run Chinook salmon have been documented entering the Delta as early as August, as shown by RST data at Knights Landing.	The footnote included in the table describing temporal occurrence of Sacramento River winter-run Chinook salmon by life stage in the Sacramento River acknowledges that the patterns are generalized and reflect sampling periods, which can vary (e.g., Knights Landing sampling with rotary screw traps has not always covered August/September); there is a cross-reference provided to annual summaries in Attachment 12A.1, Juvenile Salmonid Monitoring, Sampling, and Salvage Timing Summary from SacPAS, from which the reader can view details. The prevailing patterns are evident therein. Note that although the commenter suggests that Knights Landing data indicate entry into the Delta, fish at this location need not have entered the Delta and could instead have reared upstream of the Delta but downstream of Knights Landing, for example, in the Feather River or American River as suggested in the otolith microchemistry data from Phillis et al. (2018) as cited in the same section; winter-run Chinook salmon were not collected during August in sampling within the Delta (Attachment 12A.1; Brandes et al. 2021).
568-224	[ATT 1: Appendix 12A- 12A.1.3 - Winter-Run Chinook Salmon - Sacramento River ESU, page 12A-25.] The DEIR only mentions water temperatures impacting winter-run embryo incubation. However, high water temperatures in the Sacramento River are a stressor for all life stages of winter-run Chinook salmon. CDFW recommends that the EIR include language acknowledging that high water temperatures affect all life stages of winter-run Chinook in the Sacramento River.	The reference included in the EIR section mentioned in the comment focuses on the very high stressors identified in the NMFS recovery plan; this source does not mention high water temperatures affecting all life stages as a very high stressor, as noted in the comment and its recommendation.
568-225	[ATT 1: Appendix 12A- 12A.1.3 - Winter-Run Chinook Salmon - Sacramento River ESU, page 12A-26.]	The comment recommends that additional language be added regarding superimposition being related to temperature and flow but does not provide a source to cite in this regard; the source study cited in this section

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	The DEIR does not fully characterize the primary factors that contribute to redd superimposition and predation in the upper Sacramento River. Redd superimposition is associated with reduced availability of suitable spawning habitat (due to temperature and flow). Increased predation is associated with increased temperatures (Nobriga et al. 2021) and increased SAV/in-stream structures. CDFW recommends that the EIR include language acknowledging that superimposition is associated with reduced availability of suitable spawning habitat (due to temperature and flow), and increased predation is associated with increased temperatures (Nobriga et al. 2021) and increased SAV/in-stream structures.	of Appendix 12A, Environmental Setting Background Information, (i.e., Dudley 2018) does not provide this link. With respect to the recommendation regarding temperature and predation, the suggested source provided in the recommendation pertains to smolt migration in the Delta, whereas the section being commented on pertains to upstream predation on fry; the recommendation also does not provide a source relevant to increased SAV/in-stream structures on upstream fry predation.
568-226	[ATT 1: Appendix 12A- 12A.1.3 - Winter-Run Chinook Salmon - Sacramento River ESU, page 12A-26.] Dudley (2018) indicates that flow varies on a daily basis, and this can obscure its effect on juvenile stranding on an annual basis. Daily analysis shows that the risk of stranding increases as flow decreases. Dudley (2019) indicates that higher flow rates increased the out-migrant count. Dudley (2019) does indicate high flows can open more shallow pools that would not normally be inundated. However, it is important to note that flows in the Sacramento River are highly managed and shallow pools can become stranding pools when flow releases from Shasta Reservoir are reduced. Dudley (2019) also indicates that the density of outmigrants may impact the relationship with flow (low densities - strong effect of flow).	The text included in the EIR is consistent with the information mentioned in the comment and was carefully prepared to be consistent with the source cited (Dudley 2019). For example, while the comment says that higher flow increases the outmigration count, that is not inconsistent with the text included, although the word “positive” was added to clarify the nature of the relationship. (Dudley 2019 stated: Despite the many, and sometimes strong relationships between flow and other response variables mentioned above, there was only a small response in out-migrant count with increased flow.) None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	CDFW recommends revising section 12A.1.3 for clarity and to ensure that the citations provided (e.g., Dudley 2019) fully support the information being conveyed.	
568-227	[ATT 1: Appendix 12A- 12A.1.3 - Winter-Run Chinook Salmon - Sacramento River, page ESU 12A-26.] The statement "flow increases velocity, increasing spawner energy expenditure and thereby reducing the time spent guarding the redd, allowing other spawners to make redds on top of the existing redds" p.12A-26) is not validated by field observations. Additionally, this sentence mischaracterizes the occurrence of superimposition. Regardless of how long a female guards its redd (1 day vs 7 days), there is always the opportunity for redd superimposition due to limited available (and suitable) habitat. CDFW recommends revising the EIR to acknowledge that there is always the chance for superimposition of redds, as available and suitable spawning habitat is severely reduced.	The EIR acknowledges that the statement mentioned in the comment has not been validated by field-based surveys. The comment does not provide a source for the recommendation to include the information that there is always the chance for superimposition of redds.
568-228	[ATT 1: Appendix 12A- 12A.1.3 - Winter-Run Chinook Salmon - Sacramento River ESU, Table 12A-2, page 12A-27.] Table 12A-2 presents the temporal occurrence of Sacramento winter-run Chinook salmon by life stage in the Sacramento River. Data in the table only reflects the temporal occurrence of winter-run Chinook salmon based on when monitoring programs are operational. This likely does not capture the full range of winter-run Chinook salmon occurrence, as sampling is often limited in the summer months (June- August) due to elevated temperatures and the need to reduce handling of species exposed to those conditions. Lack of sampling does not indicate no presence. When Knights Landing Rotary Screw Trap	With respect to the issue of timing related to sampling months, please see response to comment 568-223. With respect to the comment and recommendation to update values in the table, the table represents a generalized pattern summarized by National Marine Fisheries Service and Attachment 12A.1, Juvenile Salmonid Monitoring, Sampling, and Salvage Timing Summary from SacPAS, provides all of the data for the reader to be able to see patterns.

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	sampling has occurred in August, juvenile winter-run Chinook salmon were captured. CDFW recommends that Table 12A-2 be updated to show that some of these monitoring locations are not able to be surveyed each month, but that this does not indicate that there is no winter-run Chinook presence during these months. For example, when Knights Landing rotary screw trap sampling has occurred in August, juvenile winter-run Chinook were captured. Additionally, the table should be updated to reflect recent changes to catch data at the sampling sites shown in the table. Specifically, September and October (and possibly November) at Red Bluff Diversion Dam should be changed to "High" based on the catch data, while a "Low" classification in August and September for Knights Landing should be shown in the table. As analyses included in Chapter 12 rely on the timing of species presence to understand impacts, it's important to update these tables to accurately depict exposure time.	
568-229	[ATT 1:] Appendix 12A- 12A.1.12 Sacramento Splittail, page 12A-63. Developmentally, the young-of-the-year present in April (and many in May) are all larvae. CDFW recommends adding "Larvae" to considerations of this section in addition to juveniles. Because larvae are small and shore oriented, they will be vulnerable to entrainment and impingement at NDDs [North Delta Diversions]. The addition of larvae will recognize that very small fish will be migrating too, at least in the April and May period.	More information on the spatial distribution of larval/juvenile splittail was added based on reference to Sommer et al. (2002), consistent with the recommendation. The analysis in Chapter 12, Fish and Aquatic Resources, includes consideration of north Delta intake effects on splittail such as entrainment, consistent with the recommendation. Please also see response to comment 568-205 regarding Sacramento splittail. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-230	[ATT 1:] Appendix 12A- 12A.1.12 Sacramento Splittail, page 12A-63. The citation for this Sommer et al. 2007 is not present in the	The associated full reference has been added to Appendix 12B, Bay-Delta Methods and Results, per the recommendation, although note that the suffix of the new reference is actually "b" based on the order of citation. None of the revisions described in the EIR resulted in a new significant

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	literature cited. This citation will need to include an "a" to separate it from one that discusses the Pelagic Organism Decline. CDFW recommends including the associated full reference.	environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-231	[ATT 1:] Appendix 12A- 12A.1.20.2 Smallmouth Bass, page 12A-73. Section-12A.1.20.1 is missing information that is important to characterizing the role of smallmouth bass in the environmental setting: Introduced species (Dill and Cordone 1997). No distribution in the system: lower portions of main rivers (Moyle 2002). Distribution in Delta [Sacramento-San Joaquin Delta] and lower rivers (see Brown 2000, Brown and Michniuk 2007, Seesholtz et al. 2004, May and Brown 2002). Citations not already present in "References (as applicable)" column. CDFW recommends including the topics listed, along with their associated citations: 1) Introduced species (Dill and Cordone 1997). 2) No distribution in the system: lower portions of main rivers (Moyle 2002). 3) Distribution in Delta and lower rivers (see Brown 2000, Brown and Michniuk 2007, Seesholtz et al. 2004, May and Brown 2002). Citations not already present in doc listed column L. [sic]	References consistent with the recommendation have been added to the smallmouth bass species account in Appendix 12B, Bay-Delta Methods and Results. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-232	[ATT 1:] Appendix 12A- 12A.1.21 California Bay Shrimp, page 12A-74. Commercial trawling is not allowed in Suisun Bay nor the Delta [Sacramento-San Joaquin Delta]. From title 14 section 119 of California Code of Regulations: "Trawl nets may be used only in the portions of Districts 2 and 3 lying westerly of a projected	The description has been updated consistent with the recommendation. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	straight line beginning at Point Edith on the south and extending through Buoy "6" to the shoreline on the north." CDFW recommends revising statement to clarify that trawling is limited to Carquinez Strait west of Buoy 6.	
568-233	[ATT 1:] Appendix 12A- 12A.2.2.2.2, Habitat Conditions and Environmental Stressors in Sacramento River Area, page 12A-82. The DEIR does not clarify whether floodplains are accessible from Red Bluff to Chico Landing. Additionally, no discussion is provided regarding Project impacts to weirs and the Sutter Bypass. CDFW suggests including discussion of weirs and Sutter Bypass.	An examination of CalSim flow outputs for the Sacramento River above Bend Bridge and at Wilkins Slough (see Appendix 5A, Modeling Technical Appendix, Section B, Hydrology and Systems Operations Modeling, Attachment 3, CalSim 3 Model Results for Existing Condition and Alternatives at 2020, and Attachment 5, CalSim 3 Model Results for No Project Alternative) indicates that there would be very little difference between the baseline and the project alternatives. Therefore, there would be very little difference between the baseline and the project alternatives in access to floodplains from Red Bluff to Chico Landing and spills into Sutter Bypass from Tisdale and Colusa Weirs. As a result, there would be minimal impacts on fish and wildlife in these areas. Please refer to Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for more information about the commitment by DWR to not change operational criteria in upstream reservoir, which leads to minimal differences in modeled flows.
568-234	[ATT 1: Appendix 12B- 12B.1- Juvenile Chinook Salmon Screen Passage Duration, page 12B-2.] The DEIR states "Water temperature was assumed to be 12° Celsius, consistent with "winter and spring" conditions noted by Swanson et al. (2004)" (p. 12B-2). Results for a range of temperature values are necessary to determine if temperature influences screen passage time. CDFW recommends that the EIR include an analysis and discussion of how different temperature ranges may impact	Consistent with the recommendation, an analysis was included at the other water temperature (19 degrees Celsius) undertaken in the foundational laboratory study cited in the comment. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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568-235	screen passage time for juvenile Chinook salmon so that potential impacts can be disclosed and mitigated as necessary. [ATT 1: Appendix 12B- 12B.2 Salvage- Density Method, Table 12B-2, page 12B-4.] The DEIR is unclear on why the Salvage-Density Method shows increased juvenile Chinook salmon entrainment at CVP [Central Valley Project] under Project alternatives. Increases in entrainment under this modeling approach are attributed to increases in exports. CDFW recommends that the EIR include a more thorough discussion regarding the results of the Salvage-Density Method. It would be beneficial for the reviewer to understand why the Proposed Project results in entrainment increases at CVP in the spring.	Discussion has been added as recommended within Impact AQUA-2 in Chapter 12, Fish and Aquatic Resources, of the Final EIR. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-236	[ATT 1: Appendix 12B- 12B.3 Juvenile Winter-Run Chinook Salmon Salvage Based on Zeug and Cavallo (2014), page12B-51.] The DEIR is unclear regarding whether the Zeug and Cavallo (2014) models only salvage or if both entrainment and salvage are being modeled. This is important as entrainment and salvage are two different things. CDFW recommends updating the text of the EIR to clarify if only salvage is being quantified in the model or if both entrainment and salvage are being modeled.	Consistent with the recommendation, the text in Appendix 12B, Bay-Delta Methods and Results, has been edited to remove reference to entrainment, as the method estimates salvage. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-237	[ATT 1: Appendix 12B- 12B.3 Juvenile Winter-Run Chinook Salmon Salvage Based on Zeug and Cavallo (2014), page 12B-52.]	The comment suggests that fish are released to coincide with high flow events and suggests this could be a bias in the model. The range of flows included in the modeling is stated in Appendix 12B, Bay-Delta Methods and Results, and is not solely limited to high flow events. The comment

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	Fish are released to coincide with high flow events, which is known to increase survival probability. Based on the description in the DEIR it is unclear on whether this timing is reflected in the model. The presented findings seem to result from larger fish surviving outmigration and the salvage process. This model does not account for far-field effects to determine if fish are observed in salvage under other conditions, nor does it consider or explain the effects of exports particularly during low flows. Additionally, it is unclear if operation of the Delta [Sacramento-San Joaquin Delta] Cross Channel Gates is closely correlated to this parameter. CDFW recommends that the EIR include a more thorough discussion of the predictor variable in the selected model. For example, fish are released to coincide with high flow events, which is known to increase survival probability. It is unclear if this potential bias is reflected in the model. Additionally, the model does not account for far-field effects to determine if fish make it to salvage under other flow conditions, nor does it consider or explain the effects of exports, particularly during low flows. These issues should be addressed in the EIR. Lastly, CDFW requests that the EIR state whether operation of the Delta Cross Channel Gates is closely correlated to this parameter.	suggests that south Delta exports are not considered or explained in the model, but in fact exports were included, as described in the cited section. The comment recommends discussion of correlation between Delta Cross Channel (DCC) gate operation and “this parameter,” without specifying which parameter was being referred to. The original published paper by Zeug and Cavallo (2014) only included predictors (including DCC gate position) that had relatively low correlations, implying that DCC gate correlation is not closely correlated to whichever parameter is being referred to in the comment.
568-238	[ATT 1: Appendix 12B- 12B.3 Juvenile Winter-Run Chinook Salmon Salvage Based on Zeug and Cavallo (2014), Figure 12B-2, page 12B-54.] Figure 12B-2 is difficult to visually interpret, as the box plots for each water year type are too small to discern differences between the alternatives.	The recommended addition of figures for each water year type has been made in Appendix 12B, Bay-Delta Methods and Results, of the Final EIR. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	CDFW recommends that the EIR provide separate figures for each water year type and make each box plot much larger.	
568-239	[Att 1:] Appendix 12B- 12B.4 Hydrodynamic Effects Based on DSM2-HYDRO Data, Figure 12B-3 through Figure 12B-42, page 12B-56. Issue: Figures 12B-2 through 12B-42, presented in Appendix 12B, are incomprehensible to people who are red/green color blind. Recommendation: CDFW recommends that these figures be updated, in the EIR, with changes shown along a different color scale (for example blue/red or blue/yellow or grey scale) to meet ADA compliance.	As suggested in the commenter, DWR revised the color scale to blue/red for Figures 12B-2 through 12B-42. Please also see response to comment 568-240 regarding plots by month. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. However, all figures in the EIR, including the ones mentioned by the commenter are ADA-compliant as published in the Draft EIR. Chapter 39, Description of Figures, presents text descriptions for all figures presented in the EIR. This description meets ADA requirements and allow those with visual impairments to understand the content of the figures.
568-240	[ATT 1:] Appendix 12B- 12B.4 Hydrodynamic Effects Based on DSM2-HYDRO Data, Figure 12B-13 through Figure 12B-31, pages 12B-61 through 12B-65. The DEIR does not explain why modeled DSM2- Hydro Velocity results are grouped as averages across a three-month increment. Based on the entrainment and loss tables included earlier in Appendix 12B, it would be helpful to have velocity results for December, January, and February separated out, as the earlier modeling results show little difference in December, only slight differences in January, and more frequently a difference in February. Combining all of these months together could make it difficult for the reviewer to understand the magnitude of potential changes to specific time periods during juvenile salmonid migration. Additionally, it is difficult to understand the magnitude of the change observed and the direction of the change in the figures.	As suggested in the comment, results have been broken out by month in Appendix 12B, Bay-Delta Methods and Results, of the Final EIR. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	CDFW requests that the EIR describe how the months for these averaging periods were chosen and suggests breaking the months out separately, as the magnitude of the potential changes to specific time periods during juvenile migration is harder to understand when the months are grouped, potentially leading readers to misunderstand the results. Additionally, CDFW recommends that the EIR include tables or other graphical presentation to accompany the figures presented in this section.	
568-241	[ATT 1:] Appendix 12B- 12B.4 Hydrodynamic Effects Based on DSM2-HYDRO Data, Figure 12B-28 through Figure 12B-32, pages 12B-68 through 12B-70. DSM2-Hydro velocity modeling results presented in Figures 12B-28 through 12B-32 appear to conflict with entrainment results (Salvage-Density Methods). The model results show little to no change in velocities in the south Delta [Sacramento-San Joaquin Delta] between March and May across all water year types and Project alternatives. However, Salvage-Density Method results showed up to an 8% increase in winter-run and up to a 9% increase in spring-run Chinook salmon entrainment/loss at the CVP [Central Valley Project] as compared to Existing Conditions. CDFW requests that the EIR add a discussion that links velocity results to the entrainment modeling results. The velocity modeling results in the south Delta show no changes, however the Salvage- Density Method showed increase salvage at CVP. Clarification needs to be provided to explain how the results should be interpreted when considered together.	The comment suggests that results of south Delta velocity modeling appear to conflict with entrainment results. Although there are some differences suggested in the entrainment results as noted in the comment, the differences are not large and so modest differences apparent in tabular form are not necessarily as discernible in graphical form. See also the summary of Old and Middle River flows in Impact AQUA-6 in Chapter 12, Fish and Aquatic Resources, illustrating limited differences. As requested by the comment, additional discussion was added linking velocity results to entrainment results in Chapter 12. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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568-242	[ATT 1:] Appendix 12B- 12B.4.2- Flow into Junctions, Figure 12B-44, page 12B-78. The results presented in Figure 12B-44 box plots for each water year type would be easier to interpret if accompanied by tabulated data. CDFW recommends presenting results from this section in a table to assist in the interpretation of the data.	Consistent with the comment's recommendation, a table of results has been added to Appendix 12B, Bay-Delta Methods and Results, in the Final EIR. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-243	[ATT 1: Appendix 12B- 12B.5 Delta Passage Model, page 12B-96.] The DEIR discussion of the Delta Passage Model does not clearly identify which position the Delta Cross Channel Gates were modeled (i.e., open or closed). CDFW recommends that the EIR include a discussion describing what position the Delta Cross Channel Gates were modeled in for the Delta Passage Model.	It is unclear whether the comment is referring to the development of the statistical relationships upon which the Delta Passage Model is based, or the application of the Delta Passage Model to the modeled data for existing conditions and the project alternatives. Regardless, both the statistical relationships upon which the Delta Passage Model is based as well as the application to the modeled data for existing conditions and the project alternatives includes Delta Cross Channel gates open and closed; for the former, see for example Appendix 5A, Modeling Technical Appendix, Section C, One Dimensional Delta Hydrodynamics and Water Quality Modeling Results, and for the latter, see for example the figure depicting the mean entrainment probability being diverted into Reach Geo/DCC as a function of fraction of discharge entering reach Geo/DCC in Appendix 12B, Bay-Delta Methods and Results (the figure is titled Figure from Perry (2010) Depicting the Mean Entrainment Probability (Proportion of Fish Being Diverted into Reach Geo/DCC) as a Function of Fraction of Discharge (Proportion of Flow Entering Reach Geo/DCC)).
568-244	[ATT 1: Appendix 12B- 12B.5 Delta Passage Model, page 12B-102.] The DEIR is unclear whether the Delta Passage Model includes salvage (trucking) as an emigration pathway, and if so, whether it assumes 100% fish survival with handling.	Clarification of the representation of salvage in the Delta Passage Model has been added to Appendix 12B, Bay-Delta Methods and Results, in the discussion of export-dependent survival. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	CDFW requests that the EIR include detailed modeled documentation on the Delta Passage Model clarifying if salvage (trucking) is an emigration pathway and if 100% fish survival with handling is assumed under this pathway.	
568-245	[ATT 1: Appendix 12B- 12B.7 Interactive Object-Oriented Simulation, Figure 12B-81 and Figure 12B-82, pages 12B- 127, 12B-128.] The DEIR's IOS modeling results lack a thorough discussion of the flow management changes that will occur to increase egg and fry survival under the Proposed Project in critical water years. It is unclear from the Project Description what features of the Proposed Project would cause such results. CDFW requests that the EIR include a discussion of the IOS modeling results to better explain increased survival under the Proposed Project during critical water years.	A discussion of survival differences relative to upstream flow and temperature differences is provided in the Life Cycle Modeling section of Impact AQUA-2 in Chapter 12, Fish and Aquatic Resources.
568-246	[ATT 1: Appendix 12B- 12B.9 San Joaquin River Juvenile Chinook Salmon Through-Delta Survival (Structured Decision Model Routing Application), pages 12B-137.] CDFW is concerned with the assumptions made in the Structured Decision Model Routing Application. The model assumes a positive relationship between survival and exports, which is based on research that suggests juvenile salmon entering the south Delta have higher survival if they are captured in the CVP [Central Valley Project] salvage facility and re-released more seaward than those remaining in the Delta [Sacramento-San Joaquin Delta] (Buchanan et al. 2013; Windell et al. 2017). However, little information exists to support this hypothesis, and data on post-release survival of salvaged fish is scarce (Allison et al. 2020). Only a subset of entrained fish is	The comment suggests that the model assumes a positive relationship between survival and exports reflecting a hypothesis. To clarify, the model reflects statistical relationships established through analysis of data, as opposed to an assumption based on a hypothesis. Higher survival through the salvage process as opposed to through the south Delta is consistent with the relatively low survival observed in the south Delta, as the comment notes.

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	salvaged, and an even smaller subset of these fish survive the salvage process. Mortality rates prior to salvage can be high due to predation or poor water quality conditions, and handling can cause stress and injuries that reduce both short and long-term survival. The suggestion that survival is higher through the salvage process highlights the extremely poor survival rate of juveniles in the south Delta, which is hypothesized to result from poor rearing conditions (e.g., low refuge habitat and food availability) and high predation risk (Windell et al. 2017). CDFW requests that the EIR include a detailed explanation to support the validity of the assumption that a positive relationship exists between juvenile survival and exports in the context of survival through the salvage process and after release and describe the potential uncertainties underlying this assumption.	
568-247	[ATT 1: Appendix 12B- 12B.11, Delta Smelt Upstream Migration Past North Delta Diversions, pages 12B-143.] The method chosen implies a speculative assumption - that Delta smelt are strong enough swimmers to swim past the screen. This assumption is inconsistent with the current conceptual model of Delta smelt swimming behavior as weak swimmers due to behavioral limitations on their ability to maintain steady swimming rates in lab studies (Swanson et al. 1998). CDFW recommends including an analysis with two scenarios: one where Delta smelt are assumed to be stronger swimmers than previously described, and one where they display	The method chosen is based on measured critical swimming velocity for delta smelt and reflects the best available information to estimate potential effects of the proposed screens and velocity fields present at the river-fish screen interface. Please see response to comment 568-38 regarding details on delta smelt analysis and upstream passage.

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	characteristically weaker swimming consistent with the current conceptual model of Delta smelt swimming behavior.	
568-248	[ATT 1: Appendix 12C- 12C.2 Impact Analysis Impact AQUA-2: Effects of Operations and Maintenance of Water Conveyance Facilities on Sacramento River Winter-Run Chinook Salmon, page 12C-2.] The DEIR states "Throughout this appendix, similar is generally taken to mean differences within a few percentage points (i.e., relative percentage difference between the project alternatives and No Project Alternative in 2040 compared to relative percentage difference between the project alternatives and existing conditions at 2020), although this is not necessarily applied in situations where small changes to low absolute differences may give relatively large relative changes" (p.12C-2). The statement is unclear on what range of percentages "similar" covers. It is also not clear why small changes in absolute values resulting in relatively large relative changes would be deemphasized. CDFW requests that the EIR define the range of percentages in which "similar" covers when referring to the differences between the 2020 and the 2040 scenarios for winter-run Chinook salmon (and all other runs and species). CDFW also requests that the DEIR not devalue instances where large changes in relative values result from small absolute differences. A small change in absolute abundance when species are at historic low levels could result in a large relative difference and would have large biological implications.	With respect to the request regarding definition of similar, this has been added to the footnote being referenced in the comment. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. With respect to the suggestion that large relative values may be deemphasized or devalued if absolute values were small, the need to consider absolute values in addition to relative values was justified given that some variables may have large relative differences because the absolute values are low, for example, longfin smelt larval entrainment or entry into the south Delta in Impact AQUA-7; these factors were summarized in the first table of each impact in Appendix 12C, Fish and Aquatic Resources 2040 Analysis.
568-249	[ATT 1: Appendix 12C- 12C.2 Impact Analysis Impact AQUA-2: Effects of Operations and Maintenance of Water Conveyance Facilities on Sacramento River Winter-Run Chinook Salmon,	Consistent with the recommendation, text has been added to the Appendix 12C, Fish and Aquatic Resources 2040 Analysis, table titled Summary of Winter-Run Chinook Salmon Quantitative Analyses and Differences at 2040

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	Table 12C-3 and Table 12C-5, pages 12C-3; 12C-5.] The DEIR provides no explanation as to why there will be an anticipated increase in salvage, as presented in the Salvage-Density Method results in Table 12C-3, at the CVP [Central Valley Project] facilities for below normal and dry years, given that the project description indicates that there will be no changes to CVP operations. There is also no discussion provided for Table 12C-5 to explain why entrainment loss at CVP increases much more in March of below normal and dry years, when compared with other months. CDFW recommends that the EIR include a detailed discussion of the modeling results that address this issue.	Relative to 2020 to summarize factors driving this pattern, together with cross-reference to additional description in Chapter 12, Fish and Aquatic Resources. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. Please also see discussion of upstream reservoir storage and operations in Common Response 3, Alternatives Development and Description.
568-250	[ATT 1: Appendix 12C- 12C.2 Impact Analysis Impact AQUA-2: Effects of Operations and Maintenance of Water Conveyance Facilities on Sacramento River Winter-Run Chinook Salmon, Table 12C-6, page 12C-7.] Table 12C-6 shows that juvenile winter-run Chinook salmon entrainment at the south Delta [Sacramento-San Joaquin Delta] export facilities will decrease by a factor of 18% under the Proposed Project in wet years. The DEIR does not provide a discussion of what flow management will lead to a reduction in salvage in wet years. CDFW recommends that the EIR include a detailed discussion of the modeling results that address this issue. Such a discussion is needed to help the reader to understand the DEIR's conclusions, as this result is not intuitive based on the Project Description.	The reason for the differences is generally lower south Delta exports, as described in Chapter 12's discussion of the same modeling result. The text in Appendix 12C, Fish and Aquatic Resources 2040 Analysis, cross-references the impact discussion in Chapter 12.

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568-251	[ATT 1: Appendix 12C- 12C.2 Impact Analysis Impact AQUA-2: Effects of Operations and Maintenance of Water Conveyance Facilities on Sacramento River Winter-Run Chinook Salmon, Table 12C-7, page 12C-7.] The DEIR does not describe how there will be an increase in flows in February, March, and April of wet years under the Proposed Project according to the DSM2 modeling results. Additionally, no description is provided to explain what is driving positive velocity changes in May and June. CDFW recommends that the EIR include a detailed discussion of the modeling results that address this issue. Such a discussion is needed to help the reader to understand the DEIR's conclusions, as this result is not intuitive based on the Project Description.	Most of the changes noted in the comment are very small (1%), so are likely due to the minor random variation that always is present in CalSim and resulting DSM2 results. The differences in May of dry years are larger (4%–6%) and reflect operational changes in two timesteps because occasionally the D-1641 outflow requirement at Roe Island was triggered under the No Project Alternative but was not triggered under the project alternatives. This less frequent triggering was caused by north Delta diversions operations. In both cases the prior change in the Roe trigger caused operational shifts which led to higher flows at Hood. In one case, Folsom spilled under the project alternatives and not under the No Project Alternative because of having higher storage from not having to release for the Roe standard in a prior month. In the other case, the outflow requirement to meet the salinity standard at Rock Slough was higher in May due to higher salinity in the Delta due to less outflow due to the Roe standard not triggered in the alternative in the prior month. Overall, the limited nature of these differences was not felt to warrant additional explanation in the text.
568-252	[ATT 1: Appendix 12C- 12C.2 Impact Analysis Impact AQUA-2: Effects of Operations and Maintenance of Water Conveyance Facilities on Sacramento River Winter-Run Chinook Salmon, Table 12C-8, page 12C-9.] The DEIR does not provide an explanation of what is driving the increase in hours with reverse flows in some months. For example, Table 12C-7 shows increases in flow downstream of the intakes in February, March, and April of wet years under Alternative 5. However, Table 12C-8 shows an increase in reverse flows during that same time frame when flows are anticipated to be greater than the No Project Alternative. CDFW's understanding is that reverse flows can increase in November and January, because of shifting from south Delta [Sacramento-San Joaquin Delta] to north Delta export	The comment suggests that the EIR does not provide an explanation for increases in reverse flows in some months; this is discussed generally in Chapter 12, Fish and Aquatic Resources, as being the result of north Delta intake diversions (see discussion of Hydrodynamic Effects related to Indirect Mortality within the Delta in Impact AQUA-2). With respect to the comment noting that mean velocity (see the Appendix 12C, Fish and Aquatic Resources 2040 Analysis, table titled Mean Channel Velocity (feet per second) in the Sacramento River Downstream of Intake C) may be greater under the project alternatives than the No Action Alternatives in the same time frame as reverse flows being greater under the project alternatives (see the Appendix 12C table titled Number of Hours within Each Month with Reversing Flow in the Sacramento River Downstream of Georgiana Slough (DSM2 Channel 423)), see response to comment 568-251 describing mechanisms behind the mean velocity differences in the Appendix 12C table titled Mean Channel Velocity (feet per second) in the

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	operations to pull from excess flows. Additionally, it would be helpful to also have summary results from Appendix 12C (2040 scenario) compared to summary results for the 2020 scenario. CDFW recommends the EIR include an explanation that addresses whether excess flows under the climate change scenario are anticipated to increase in the other months listed (September, February, and May). Such a discussion is needed to help the reader to understand the DEIR's conclusions, as this result is not intuitive based on the Project Description. Additionally, CDFW recommends that the EIR include a summary table that compares the 2020 to the 2040 scenario for reverse flows in the Sacramento River analysis.	Sacramento River Downstream of Intake C; given that the summary of reverse flows is mean number of hours with reverse flow, it is possible for this metric to be greater under the project alternatives because it is dependent on the absolute flow velocity relative to the velocity at which reverse flows occur. With respect to the comment's recommendation that it would be useful to have summary results from Appendix 12C (which presents 2040 results) compared to summary results for 2020, this is done qualitatively in the Appendix 12C table titled Summary of Winter-Run Chinook Salmon Quantitative Analyses and Differences at 2040 Relative to 2020, which cross-references the relevant tables in Appendix 12C and Chapter 12 to compare the relative difference between the project alternatives and No Project Alternative at 2040 with the project alternatives and existing conditions at 2020. With respect to CDFW's understanding that reverse flows can increase because of shifting from south Delta to north Delta export operations, this is not consistent with the description of operations provided in the Chapter 3, Description of the Proposed Project and Alternatives, discussion of integration of north Delta intakes with south Delta facilities. With respect to the recommendation that explanation for excess flows in other months be included, this is not necessary because regardless of whether excess flows occur, operations would be done based on operational criteria reflective of the prevailing hydrology. Please refer to Common Response 3, Alternatives Development and Description, for further clarification of operations during excess flow conditions (primarily in winter and spring) and potential seasonal shifting of diversions from the south to the proposed north Delta facilities in summer and fall, primarily determined by salinity conditions in the southern Delta.
568-253	[ATT 1: Appendix 12C- 12C.2 Impact Analysis Impact AQUA-2: Effects of Operations and Maintenance of Water Conveyance Facilities on Sacramento River Winter-Run Chinook Salmon, Table 12C-9, page 12C-11.]	The comment requests that the EIR include the through-Delta survival analysis based on Perry et al. (2018) as done for 2020. This was not considered necessary because the 2020 analysis showed that the relative difference between project alternatives and existing conditions was the same regardless of the Georgiana Slough entry assumption. As summarized

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	The DEIR includes the Perry et al. (2018) through-Delta survival analysis for both the 2020 and 2040 scenario, but only includes the assumption that Georgiana Slough BAFF reduces entry into Georgiana Slough by 50% for the 2020 scenario. It is unclear why the assumption that the BAFF will reduce entrainment was not modeled for the 2040 scenario. CDFW requests that the DEIR include the through-Delta survival analysis based on Perry et al. (2018) with the assumption that the Georgiana BAFF reduces entry into Georgiana Slough by 50% for the 2040 scenario.	in Impact AQUA-2 in Appendix 12C, Fish and Aquatic Resources 2040 Analysis, results of this analysis at 2040 were generally similar to those at 2020.
568-254	[ATT 1: Appendix 12C- 12C.2 Impact Analysis Impact AQUA-2: Effects of Operations and Maintenance of Water Conveyance Facilities on Sacramento River Winter-Run Chinook Salmon, Table 12C-13, page 12C-21.] The DEIR provides no explanation of why modeling results do not predict temperature changes associated with flows downstream of the Sacramento River, as compared to 2020, given that more flow will move down the river earlier in the season as precipitation instead of snow melt later in the season. Additionally, the benched habitat analysis shows potential increases in suitable bench habitat because of climate change; however, it is unclear how drought conditions associated with climate change impact habitat availability and water temperatures, or even if drought conditions were included in the model. CDFW requests that the EIR explain why it anticipates that there will be no differences in temperature changes associated with flows immediately downstream of Intake C, Sacramento River at Rio Vista, and San Joaquin River at Jersey Point for all	With respect to the request that the EIR explain why there would not be temperature differences associated with flows, this is discussed in the Water Temperature section of the Habitat Suitability discussion for Far-Field Effects in Impact AQUA-2 of Chapter 12, Fish and Aquatic Resources, which notes that operations-based flow-related effects on Delta water temperature are expected to be minor, as illustrated by the DSM2-QUAL modeling results summarized in that section and in the Appendix 12C, Fish and Aquatic Resources 2040 Analysis, section mentioned in the comment. With respect to the benched habitat analysis, the results reflect the assumptions related to suitability of water depth for juvenile Chinook salmon coupled with DSM2-HYDRO 15-minute flow data, as described in Appendix 12B, Bay-Delta Methods and Results. The 2040 flow data reflect historical hydrology adjusted for climate change and include periods of drought such as the late 1920s/early 1930s, mid-late 1970s, and 2012-2015 (see Appendix 5A, Modeling Technical Appendix, Section A, Modeling Overview, for discussion of the period simulated in the hydrological modeling and the discussion of 2040 assumptions provided in Appendix 5A, Section B, Hydrology and Systems Operations Modeling, Attachment 4, Climate Change Development for Delta Conveyance Project. Comparison of existing conditions to project alternatives under the 2040 scenario, as also requested in the comment, is not appropriate because it would conflate

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	alternatives in the 2020 and the 2040 scenarios. Additionally, CDFW requests that the EIR include an analysis that compares existing conditions to all alternatives under the 2040 scenario.	effects of the project alternatives with effects caused by factors such as climate change-related differences in hydrology between 2020 and 2040.
568-255	[ATT 1: Appendix 12C- 12C.2 Impact Analysis Impact AQUA-2: Effects of Operations and Maintenance of Water Conveyance Facilities on Sacramento River Winter-Run Chinook Salmon, Table 12C-14 and 12C-15, pages 12C-23, 12C-24.] The DEIR does not explain why modeled temperatures in the Sacramento River and San Joaquin River are unaffected by the Proposed Project. CDFW recommends conducting a sensitivity analysis to determine at what change in outflow (if any), water temperatures will differ on the Sacramento River and the San Joaquin River.	Please refer to response to comment 568-254 with respect to effects of the project alternatives on water temperature relative to the No Project Alternative. The analysis included in the EIR focuses on results based on modeled operations; it is not relevant to conduct a sensitivity analysis of operations or conditions that were not modeled to occur, as recommended in the comment.
568-256	[ATT 1: Appendix 12C- 12C.2 Impact AQUA-3: Effects of Operations and Maintenance of Water Conveyance Facilities on Central Valley Spring- Run Chinook Salmon, Table 12C-26, page 12C-31.] The DEIR does not include a clear discussion of Table 12C-26 explaining why the Proposed Project will lead to a decrease in loss of juvenile spring-run Chinook salmon in wet and below normal water year types in March and April. CDFW recommends that the EIR include a detailed discussion of the modeling results that address this issue with information regarding flow management.	Consistent with the recommendation, text has been added to the Appendix 12C, Fish and Aquatic Resources 2040 Analysis, table titled Entrainment Loss of Juvenile Spring-Run Chinook Salmon at SWP Banks Pumping Plant, Averaged by Water Year Type and Month, Based on the Salvage-Density Method cross-referencing the discussion of this issue provided in the Appendix 12C table titled Summary of Winter-Run Chinook Salmon Quantitative Analyses and Differences at 2040 Relative to 2020. See also response to comment 568-249 regarding revisions to table titled Summary of Winter-Run Chinook Salmon Quantitative Analyses and Differences at 2040 Relative to 2020.
568-257	[ATT 1: Appendix 12C- 12C.2 Impact AQUA- 3: Effects of Operations and Maintenance of Water Conveyance Facilities on Central Valley Spring- Run Chinook Salmon, Table 12C-27,	The results highlighted in the comment reflect the tendency for Jones exports in May to decrease by more in certain months in the simulation as the north Delta intake capacity increases, which is caused by CVP San Luis

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	page 12C-33.] The DEIR does not provide an explanation of Table 12C-27 results that show Alternatives 2a/4a have modeled less loss of juvenile spring-run Chinook salmon than Alternatives 2b/4b and Alternatives 2c/4C. Alternatives 2a/4a have a higher diversion rate than the other alternatives modeled, but also show lower juvenile spring-run Chinook salmon modeled loss. CDFW requests that the EIR provide an explanation for modeled loss of juvenile spring-run Chinook salmon under Alternatives 2a/4a regarding flow management.	Reservoir storage being fuller in April as the north Delta intake size increases. Exports in May tend to be lower if CVP San Luis Reservoir storage is higher entering the month because of less space in San Luis Reservoir or less need for upstream releases for exports. CVP San Luis Reservoir storage can be higher because of higher Jones exports in prior months because of the shift to E:I control (see, for example, text added to the table titled Summary of Winter-Run Chinook Salmon Quantitative Analyses and Differences at 2040 Relative to 2020 in response to comment 568-249). In addition, in Alternatives 2a and 4a the CVP has capacity in the north Delta intakes, which allows it to fill CVP San Luis Reservoir storage quicker prior to May. Although under Alternatives 2b and 4b (3,000-cfs north Delta intake capacity) and Alternatives 2c and 4c (4,500-cfs north Delta intake capacity) Jones exports do tend to increase in May because of shifts to E:I control in 1 or 2 years in the simulation, as the north Delta intake capacity increases to 6,000 cfs (Alternatives 1, 3, and 5) and then 7,500 cfs (Alternatives 2a and 4a), the other factors described above make CVP San Luis Reservoir storage fuller entering May, which leads to other months with larger decreases that cause the overall average difference in exports between the No Project Alternative and project alternatives during May in below normal years to go from positive to unchanged to negative. A brief summary explaining this concept was added to Appendix 12C, Fish and Aquatic Resources 2040 Analysis, table titled Summary of Spring-Run Chinook Salmon Quantitative Analyses and Differences at 2040 Relative to 2020, as recommended in the comment. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-258	[ATT 1:] Chapter 13- General Comment, Multiple pages. The DEIR does not address, or analyze, the potential conflict (under all alternatives) resulting from the project alignment across conserved lands, including the Cosumnes River	A detailed evaluation of project alignments is presented in the technical memoranda listed in response to comment 568-58. Proximity to conservation lands was one of the criteria included in the evaluation, and the technical memoranda identify facility location options that were not considered in detail due to potential impacts on conservation areas. The

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	Preserve, Woodbridge Ecological Preserve, and Bethany Reservoir Conservation Easement. The DEIR does not evaluate an alternative route for the Bethany Reservoir Aqueduct siting in a manner that could reduce impacts to the Bethany Reservoir Conservation Easement by following existing roadways and other highly disturbed areas and/or one that will avoid impacts to conserved lands similar to the alignments identified in the Delta Conveyance Project Final Draft Engineering Project Report (Delta Conveyance Design and Construction Authority 2022; Figure 10). A comprehensive evaluation of conservation lands impacted by the Proposed Project (both temporary and permanent impacts) and alternatives should be included in the EIR. The evaluation should include identification of the number of acres to be impacted by each alignment including access areas, the biological quality and value of those acres, and the property owner and/or other holders of conservation interests in the property if possible. Additionally, a discussion of the Project's potential to obtain in-kind mitigation for impacts to conserved lands should be included with appropriate lands identified.	Facilities Siting Study for the Bethany Reservoir Alternative Technical Memorandum includes Section 7, Selection of Bethany Reservoir Aqueduct Alignment (Route Study) and Attachment 3, the Bethany Reservoir Aqueduct Alignment Siting Study, which specifically evaluates alternatives that minimize effects on the Bethany Reservoir Conservation Easement (Delta Conveyance Design and Construction Authority 2022c). The results of this study indicated that the proposed alignment would have the fewest impacts on conservation easements, Mountain House School, utilities, and disruption to the hillside. Please also see response to comment 568-58 regarding the analysis of impacts on special-status species habitat in Chapter 13, Terrestrial Biological Resources; continued consultation with CDFW through other regulatory processes; and the range of feasible alternatives evaluated in the EIR.
568-259	[ATT 1:] Chapter 13- General Comment, Multiple pages. The DEIR includes mitigation measures to avoid and minimize impacts that include the language "to the extent feasible", for numerous species including some that are fully protected (e.g., sandhill cranes), when discussing Project activities. If a mitigation measure is caveated as "to the extent feasible" it is difficult to analyze the likely benefits of the associated measure, and mitigation measures generally should be proposed and relied on only if they are feasible. It should also be noted that take of sandhill crane, which is a fully protected	Mitigation measures have been revised to remove "where feasible" when a commitment can be made. Where there are instances that a measure will be implemented in all possible cases, but DWR cannot commit to the measure, performance standards have been added to identify what subsequent actions will be implemented to minimize impacts. Please also see Common Response 1, CEQA Process, General Approach to Analysis, and Other Environmental Review Issues, for a discussion of feasible mitigation measures under CEQA. Regarding the status of sandhill cranes, the EIR recognizes that the greater sandhill crane is a fully protected species under California Fish and Game

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	species under Fish and Game Code, section 3511, is prohibited. CDFW requests that the EIR commit to mitigation measures identified or clearly specify when a measure would not be met or maintained, so that CDFW and other users of the EIR can better understand the specific mitigation activities to which DWR [Department of Water Resources] is committing.	Code Section 3511; that take is prohibited; and that the lesser sandhill crane is a California species of special concern, as stated in Appendix 13B, Species Accounts. The avoidance and minimization measures described in Mitigation Measure BIO-33 are applicable to both subspecies of sandhill crane. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-260	[ATT 1: Chapter 13- General Comment, Multiple pages. The DEIR generally commits to installing exclusion fencing no more than 14 days prior to the start of construction activities (e.g., California tiger salamander and giant garter snake). CDFW recommends the EIR commit to a timeline for installation that is linked to and follows preconstruction surveys, to reduce the likelihood of species moving into the area after a survey has been conducted (i.e., within 24 hours of preconstruction surveys).]	Mitigation Measures BIO-22a and BIO-30 have been revised to require the final preconstruction clearance survey be conducted within 24 hours prior to exclusion fence installation. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-261	[ATT 1:] Chapter 13- 13.1.7.1 Habitat Conservation Plans Setting Overview, pages 13-44. The DEIR does not clarify whether the Study Area contains conserved lands such as conservation easements, mitigation banks, and Natural Community Conservation Plan lands. Without this information disclosed in the DEIR, it is unclear how the Proposed Project will impact existing land use designated for conservation value. CDFW recommends the EIR include whether the Study Area contains conserved lands and include figures detailing locations	Please see response to comment 568-58 regarding the evaluation of project alignments and proximity to conservation lands in the technical memoranda of the EPRs, the analysis of impacts on special-status species habitat in Chapter 13, Terrestrial Biological Resources, continued consultation with CDFW through other regulatory processes, and the range of feasible alternatives evaluated in the EIR.

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	of conserved lands and how they interact with the Proposed Project alignment. CDFW suggests including a section that discusses potential impacts associated with the Proposed Project activities to conserved lands. Any impacts to conserved lands could impact special status species, as these areas were designed to protect species and their habitat in perpetuity.	
568-262	[ATT 1:] Chapter 13- General Comment. Special-Status Plant Species, multiple pages. Issue: The DEIR commits to conducting special-status plant species surveys consistent with protocols outlined in CDFW (2018), or the most current protocols, specifically with respect to the timing the surveys in the appropriate season and at the appropriate level of ground coverage. The DEIR indicates that the extent of mitigation for direct loss and indirect impacts on special-status plants will be based on survey results but lacks commitment to conduct floristic surveys across multiple years before evaluation of a negative finding (Mitigation Measure BIO-2a). CDFW (2018) concludes that surveys over several years may be needed for annual or short-lived plants before a negative finding can be made. Surveys for rare annual plants need to consider compounding influences from low rainfall and rainfall timing conditions. Many annual species of 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 a previous year's surveys. Recommendation: CDFW requests that the EIR commit to rare	Mitigation Measure BIO-2a requires surveys to be consistent with USFWS and CDFW guidelines, and those guidelines address protocols required for “adverse conditions,” such as yearly weather patterns that may affect survey results from a single survey season. Consistent with the use of those agency guidelines, and required by Mitigation Measure BIO-2a, the surveys and survey reports would consider adverse conditions at the time the surveys are conducted, and additional surveys could be required to ensure that surveys are adequate.

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	plant surveys within the entire Proposed Project footprint where habitat is present, and over multiple growing seasons, before assuming that a species is not present within the Proposed Project footprint.	
568-263	[ATT 1: Chapter 13- 13.3.1.2, Methods Used to Assess Impacts on Special-Status Species, page 13-57.] The DEIR does not include non-riparian habitat in the impact analysis for elderberry longhorn beetles. Habitat for valley elderberry longhorn beetle includes both riparian and non-riparian areas where elderberry shrubs are present. Elderberry shrubs can be a common understory plant in non-riparian habitats. Riparian habitat provides more connectivity, because the elderberry is the sole host plant of the species, however, significant impacts to elderberry shrubs, at the individual shrub scale, can extirpate a local population in non-riparian habitats. CDFW recommends the EIR revise the impact analysis, for elderberry longhorn beetles, to include non-riparian habitats where elderberry shrubs are present.]	The valley elderberry longhorn beetle habitat suitability model includes riparian and other potential habitat (non-riparian) (Appendix 13B, Species Accounts). As described in Chapter 13, Terrestrial Biological Resources, in the section titled Evaluation of Construction Activities, only modeled riparian habitat was used to quantify construction impact acres on valley elderberry longhorn beetle. Other potential habitat was included in the habitat suitability model to identify areas where shrubs may occur to help focus preconstruction survey efforts and implementation of Mitigation Measure BIO-18 to avoid impacts on individual elderberry shrubs in non-riparian habitat. The species model uses high-resolution GIS data layers and specific information on the habitat requirements of a species to indicate whether a particular location has suitable habitat for that species. Prior to project construction, refinements such as on-the-ground habitat assessments and/or species surveys would be conducted in all work areas to evaluate the presence of suitable habitat and/or occupation by special-status species. Therefore, the EIR is sufficient in avoiding and minimizing impacts to valley elderberry longhorn beetle.
568-264	[ATT 1:] Chapter 13- 13.3.1.2, Methods Used to Assess Impacts on Special-Status Species, page 13-57.] The DEIR includes dates (September 15 through March 15) that are narrow for when sandhill cranes may be present in the study area. Sandhill cranes have shown up within the study area during the month of August and may remain into April. CDFW recommends the EIR includes additional language that states that sandhill cranes may arrive earlier and stay later than the specified dates. This is especially relevant in the	Language has been added to the impact discussion and mitigation measure for greater and lesser sandhill cranes in Chapter 13, Terrestrial Biological Resources, providing additional detail about how the September 15 through March 15 arrival and departure dates were determined. The impact discussion and mitigation measure have also been revised to acknowledge that due to the long-term nature of the project, sandhill cranes may arrive earlier and stay later than the dates specified in the EIR and that if CDFW develops guidance regarding sandhill crane surveys and work windows, DWR will adjust survey dates and dates included in mitigation measures to minimize potential impacts on sandhill cranes. These revisions do not change the adequacy of the mitigation measure as

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	context of changing climate conditions. Those dates are used throughout the chapter and should all be updated. Expanding Sandhill crane presence may impact minimization measures or mitigation required by the Project.	the subsequent components of Mitigation Measure BIO-33 would be implemented when cranes are present in the study area. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-265	[ATT 1:] Chapter 13- 13.3.3.3, Impact BIO-11, CEQA [California Environmental Quality Act] Conclusions - All Project Alternatives, Mitigation Measure BIO-2b, page 13-122. "Mitigation Measure BIO-2a" is possibly a typo throughout the document under the "Mitigation Measure BIO-2b: Avoid and Minimize Impacts on Terrestrial Biological Resources from Maintenance Activities" headers. CDFW recommends revising from "Mitigation Measure BIO-2a" to "Mitigation Measure BIO-2b" throughout the EIR when referencing Mitigation Measure BIO-2b.	Text that references Mitigation Measure 2a under Mitigation Measure 2b in Chapter 13, Terrestrial Biological Resources, has been revised to reference Mitigation Measure 2b throughout the EIR. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-266	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-21: Impacts of the Project on Crotch and Western Bumble Bees, page 13-167. Crotch and western bumble bee species are designated candidates for endangered status under CESA [California Endangered Species Act]. The Project is likely to impact areas overlapping with known ranges and suitable habitat for these species. However, the DEIR does not clearly state how many acres of habitat for these species would be impacted or how grasslands mitigation identified in the CMP will reduce the level of impacts to less than significant with mitigation, nor does it state if the protection of grasslands will be within the range of known populations of Crotch and western bumble bee.	Chapter 13, Terrestrial Biological Resources, contains an analysis of potential impacts on Crotch bumble bees from project alternatives. Chapter 13 has been updated to remove western bumble bee from the impact analysis because the current published range for Western bumble bee (California Department of Fish and Wildlife 2023) does not overlap with the study area. Please see the discussion of Impact BIO-21 in Chapter 13 for a description of potential impacts from all alternatives, a table summarizing impact acres on modeled Crotch bumble bee habitat, and mitigation measures and environmental commitments to reduce impacts. Please also see Appendix 13C, Impact Tables, for impact acres on modeled Crotch bumble bee habitat by alternative. The Compensatory Mitigation Plan (Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources, and Attachment 3F-

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	CDFW requests that the EIR include a clear description of potential impacts to, and planned mitigation for the loss of Crotch and western bumble bee modeled suitable habitat.]	1, Compensatory Mitigation Design Parameters) has been revised to include species-specific Compensatory Mitigation Design Parameters for loss of modeled Crotch bumble bee habitat. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-267	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-22: Impacts of the Project on California Tiger Salamander, Table 13-58, page 13-174. The DEIR should clarify why there are no identified permanent impacts on California tiger salamander aquatic habitat for Alternatives 1-4A given that permanent impacts are expected for vernal pool aquatic invertebrates. Vernal pools are a preferred breeding habitat for California tiger salamander. Based on the DEIR, is it unclear if these habitats are not currently occupied or deemed suitable for tiger salamander. CDFW recommends the EIR analyze and provide a detailed discussion on whether there will be permanent impacts to California tiger salamander resulting from the impacts to vernal pools occupied by aquatic invertebrates, and if necessary, include minimization and/or mitigation.]	The EIR provides an impact analysis of California tiger salamander raised by the comment. Vernal pools are included in the California tiger salamander habitat model (Appendix 13B, Species Accounts, in the section titled Additional Model Parameters). Modeled aquatic habitat does not overlap with the footprints of Alternatives 1–4a due to the geographic limits of the California tiger salamander habitat model described in Appendix 13B in the section under California Tiger Salamander titled Geographic Limits. The geographic limits of the California tiger salamander habitat model differ from those of the vernal pool aquatic invertebrate models (i.e., vernal pool fairy shrimp, described in Appendix 13B in the section under Vernal Pool Fairy Shrimp titled Geographic Limits). As shown in Chapter 13, Terrestrial Biological Resources, the analysis in the EIR concludes that significant impacts on California tiger salamander would less than significant after mitigation.
568-268	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-22: Impacts of the Project on California Tiger Salamander, Mitigation Measure BIO-22a, page 13-179. The DEIR does not include avoidance measures during maintenance operations, such as preconstruction surveys in suitable habitat and vehicle speed limits, for California tiger salamanders.	Mitigation Measure BIO-2b contains avoidance and minimization measures that would be in effect during maintenance activities, including preconstruction surveys and vehicle speed limits.

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	CDFW recommends the EIR includes avoidance measures for California tiger salamander during maintenance operations such as preconstruction surveys in suitable habitat and vehicle speed limits.]	
568-269	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-22: Impacts of the Project on California Tiger Salamander, Mitigation Measure BIO-22a, page 13-179. The DEIR does not include measures to mow vegetation to aid in preconstruction surveys, nor conduct burrow surveys and develop measures to collapse burrows if not occupied by California tiger salamander. CDFW recommends the EIR includes measures to mow vegetation to aide in preconstruction surveys. CDFW also recommends conducting burrow surveys and developing measures to collapse unoccupied burrows, if appropriate.]	Mitigation Measure BIO-22a contains a commitment to clear work areas of California tiger salamander by placing pitfall traps or by hand-excavating mammal burrows. In addition, Mitigation Measure BIO-22a has been revised to include mowing vegetation to aid the preconstruction surveys. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-270	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-22: Impacts of the Project on California Tiger Salamander, Mitigation Measure BIO-22a, page 13-179. Ground-disturbing activities may occur between April (May in wet years) through October 31. However, this period overlaps with the California tiger salamander breeding season. CDFW recommends the EIR includes measures to limit ground disturbance to the dry season (nonbreeding season for California tiger salamander), June 15 through October 15.]	As described in Appendix 13B, Species Accounts, in the section titled Seasonal Patterns, found in the section titled California Tiger Salamander, adult California tiger salamander typically migrate to ponds to breed from November to April and breeding generally occurs from December through March. Mitigation Measure BIO-22a commits to not conducting initial ground disturbing activities between November 1 and March 31 and includes a commitment to avoid initial ground disturbance during rainfall events between sunset and sunrise, which avoids an increased risk of impacts to the species in the event that rainfall occurs during the construction work window.
568-271	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-22: Impacts of the Project on California Tiger Salamander, Mitigation Measure BIO-22a, page 13-180.	Mitigation Measure BIO-22a includes a commitment to avoid initial ground disturbance during rainfall events between sunset and sunrise. Because California tiger salamander move at nighttime during rain events, this commitment avoids an increased risk of impacts to the species. The

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	The DEIR states that clearing habitat in California tiger salamander habitat could continue when rain is forecasted under supervision of a USFWS and CDFW approved biologist. CDFW does not support any ground disturbing activities occurring within suitable habitat during a rain event when California tiger salamanders are known to increase activity. CDFW requests removal of this language in the EIR and commit to no ground disturbing events within suitable habitat for California tiger salamanders during a rain event due to the increased risk of impacts.]	measure has been revised to remove “to the extent practicable” and commits to notifying and coordinating with CDFW and USFWS if the measure cannot be implemented as written. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-272	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-22: Impacts of the Project on California Tiger Salamander, Mitigation Measure BIO-22a, page 13-180. The text in the DEIR is unclear as to whether dewatering will only occur in aquatic habitats once USFWS and CDFW approve of the action. CDFW recommends limiting dewatering in aquatic habitats for California tiger salamander to occur only after USFWS and CDFW approve of the specific dewatering activity.]	Mitigation Measure BIO-22a has been revised to include a commitment to notify and coordinate with CDFW when work (which includes dewatering) within 300 feet of California tiger salamander aquatic habitat cannot be avoided to implement site-specific avoidance and minimization measures. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-273	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-22: Impacts of the Project on California Tiger Salamander, Mitigation Measure BIO-22a, page 13-181. The DEIR states the perimeter of construction sites within or adjacent to California tiger salamander habitat will be fenced with fencing material suitable for excluding amphibians by no more than 14 days prior to the start of construction activities. CDFW recommends the EIR commit to a deadline following	Mitigation Measure BIO-22a has been revised to require a final preconstruction clearance survey within 24 hours preceding exclusion barrier installation. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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	preconstruction surveys in which exclusion fencing must be installed to reduce the likelihood of California tiger salamanders moving into the area after a survey has been conducted (for example, within 24 hours of preconstruction surveys).]	
568-274	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-30: Impacts of the Project on Giant Garter Snake, Mitigation Measure BIO-30, pages 13-239. The period listed in the DEIR to install the exclusionary fence does not assure CDFW that the worksite has been cleared of giant garter snake and will remain clear until exclusion fencing is installed. CDFW recommends the EIR commit to a deadline following preconstruction surveys in which exclusion fencing must be installed to reduce the likelihood of giant garter snakes moving into the area after a survey has been conducted (for example, within 24 hours of preconstruction surveys). Additionally, the exclusion fencing should be placed between May 1 and September 1 in advance of giant garter snakes seeking overwintering refugia.]	Mitigation Measure BIO-30 has been revised to require a final preconstruction clearance survey within 24 hours preceding exclusion barrier installation. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. As described in Appendix 13B, Species Accounts, in the giant garter snake Seasonal Patterns section, snake brumation begins around October 1, and snakes emerge beginning as early as April 1, depending on annual conditions. In addition, Mitigation Measure BIO-30 contains a commitment to clear work sites within suitable giant garter snake habitat prior to September 15, notify CDFW in writing, and install exclusion fencing prior to work within the cleared area occurring between October 1 and May 1. This window is sufficient to ensure giant garter snakes are not within the cleared construction area.
568-275	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-30: Impacts of the Project on Giant Garter Snake, Mitigation Measure BIO-30, page 13-239. The DEIR does not include a buffer zone around the edge of the exclusion fencing to discourage giant garter snakes from using the vegetation along the fence.	Mitigation Measure BIO-30 contains commitments to install exclusion fencing in locations that would minimize the potential for giant garter snake to enter the construction work area, including consideration of nearby vegetation that could facilitate giant garter snake entering the exclusion area, conducting preconstruction clearance surveys within 24 hours prior to installing exclusion fencing, and conducting daily inspection of exclusion fencing. In addition, the mitigation measure commits to submitting a conceptual fencing plan to USFWS and CDFW prior to the start of construction. These actions would create a buffer zone by avoiding

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	CDFW recommends the EIR include maintaining a buffer zone around the edge of the exclusion fencing to discourage giant garter snakes from using vegetation along the fence.]	placing fencing in or adjacent to vegetation that would facilitate giant garter snake entering construction areas.
568-276	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-30: Impacts of the Project on Giant Garter Snake, Mitigation Measure BIO-30, page 13-239. The DEIR does not include surveying of all small mammal burrows within suitable habitat of giant garter snakes to determine occupancy. CDFW recommends the EIR include a measure to survey all small mammal burrows within suitable habitat to determine if they are occupied. If they are unoccupied, CDFW suggests collapsing the burrows as long as they are less than 3 ft long.]	Mitigation Measure BIO-30 was revised to require hand excavation of burrows within 200 feet of giant garter snake aquatic habitat if giant garter snake are found on-site. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-277	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-30: Impacts of the Project on Giant Garter Snake, Mitigation Measure BIO-30, page 13-240. The DEIR does not consider if giant garter snakes and California tiger salamanders may be present at the time ground clearing takes place with heavy machinery. CDFW recommends the EIR include a measure for a biological monitor to clear vegetation ahead of heavy machinery ground clearing or mowing. This measure would also benefit both giant garter snakes and California tiger salamanders in upland habitat.]	Mitigation Measures BIO-22 and BIO-30 include commitments for a biologist to conduct clearance surveys immediately prior to initiation of any vegetation clearing or ground-disturbing activities in areas with suitable giant garter snake or California tiger salamander habitat.
568-278	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-30: Impacts of the Project on Giant Garter Snake, page 13-240. The DEIR is missing a commitment to report giant garter snake	Environmental Commitment EC-14 (Appendix 3B, Environmental Commitments and Best Management Practices) describes construction best management practices and contains a commitment to submit CNDDB records for special-status species occurrences to CDFW no more than 90

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	observations to the CNDDDB within a specified timeframe or timely manner. CDFW recommends the EIR include a commitment to report GGS observations to CNDDDB in a specified timeframe.]	days after the last field visit to the proposed project site.
568-279	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-30: Impacts of the Project on Giant Garter Snake, Mitigation Measure BIO-30, page 13-240. The DEIR allows for the dewatering of suitable giant garter snake habitat in the inactive season of giant garter snake and does not require a CDFW-approved relocation plan. This is potentially problematic as giant garter snakes are more sensitive to impacts than on snake species because they overwinter in underground burrows. CDFW recommends the EIR include an analysis of the potential impacts of dewatering giant garter snake habitat during the inactive season (October 2 - April 30) and any other construction measures (ground disturbances) that will occur during the inactive season when giant garter snakes are overwintering in underground burrows. CDFW recommends mitigating for potential impacts by prohibiting dewatering during the inactive season and adhering to a CDFW-approved relocation plan, regardless of construction timing.]	Because dewatering of suitable giant garter snake aquatic habitat would not occur during the inactive season, the EIR does not require an analysis of the suggested impact. Mitigation Measure BIO-30 has been revised to require dewatering of suitable habitat to occur between May 1 and October 1 (giant garter snake active season) which would avoid impacts on giant garter snake during the inactive season. This revision does not result in a change in impact determination identified in Chapter 13, Terrestrial Biological Resources, result in a new significant environmental impact, or require additional mitigation measures to which DWR was unwilling to commit. Mitigation Measure BIO-30 includes a CDFW-approved relocation plan that would apply regardless of construction timing.
568-280	[ATT 1: Chapter 13- 13.3.3.4, Impact BIO-30: Impacts of the Project on Giant Garter Snake, Mitigation Measure BIO-30, page 13-240. The DEIR is missing a commitment to consult with a CDFW biologist prior to work being conducted outside of the giant garter snake active season.	Work outside the giant garter snake active season would occur only after aquatic habitat had been dewatered during the active season, as required by Mitigation Measure BIO-30. This mitigation measure already includes a requirement that any deviation will be done in coordination with and with approval from CDFW and USFWS. This mitigation measure has been revised to require dewatering to occur between May 1 and October 1 (giant garter snake active season) if work must occur during inactive season, which

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	CDFW recommends the EIR include a commitment to meet with a CDFW biologist when work is conducted outside of the active season.]	would avoid impacts to giant garter snake during the inactive season. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-281	[ATT 1:] Chapter 13- 13.3.3.4, Impact BIO-33: Impacts of the Project on Greater Sandhill Crane and Lesser Sandhill Crane, Construction, page 13-269. The included reference in the DEIR supports the claim that cranes exhibit high roost site fidelity, but does not support the statement that they, in some cases, may still use artificially lit sites due to roost site fidelity. CDFW recommends the EIR include a reference that supports the claim that cranes may still use artificially lit sites due to roost site fidelity.	Chapter 13, Terrestrial Biological Resources, includes the potential for artificially lit roost sites to be used, based on sandhill cranes strong site fidelity to their roost sites. However, the impact conclusion in BIO-33 is not based on the potential that the roost will continue to be used. The EIR acknowledges that cranes “may avoid roosting in areas where lighting is bright” and the analysis explains why this lighting impact would be less than significant after mitigation.
568-282	[ATT 1:] Chapter 13- 13.3.3.4, Impact BIO-33: Impacts of the Project on Greater Sandhill Crane and Lesser Sandhill Crane, Mitigation Measure BIO-33, page 13-275. The language in the DEIR is unclear as to the frequency of surveys for sandhill cranes. CDFW recommends the EIR includes measures for additional annual surveys of sandhill cranes. Surveys should be conducted annually, starting with the first winter prior to project implementation due to changing habitat conditions and the potential for sandhill cranes to use alternate sites.	Mitigation Measure BIO-33, as written, requires surveys to be conducted starting the winter prior to construction. Mitigation Measure BIO-33 has been revised to clarify that surveys will also be conducted annually for sandhill cranes to inform other portions of the mitigation measure (e.g., noise contour maps, identification of occupied habitat). None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-283	[ATT 1:] Chapter 13- 13.3.3.4, Impact BIO-39: Impacts of the Project on Swainson’s Hawk, Operations, page 13-335.	Mitigation Measure BIO-2c includes the commitment that DWR will work with the electric utilities who are responsible for project lines to ensure incorporation of bird and raptor-safe design consistent with Avian Power

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	The language in the DEIR is unclear if the proposed powerlines will be designed and constructed to follow APLIC guidelines. CDFW recommends the EIR uses APLIC guidelines to design and construct powerlines and to clearly state that these guidelines were used.	Line Interaction Committee guidelines or more current guidance if it becomes available. Mitigation Measure BIO-2c also includes a commitment from DWR to mark new above ground project lines and towers.
568-284	[ATT 1:] Chapter 13- 13.3.3.4, Impact BIO-39: Impacts of the Project on Swainson's Hawk, Mitigation Measure BIO-39, page 13-338. The DEIR states that construction may occur within 0.5 miles of an occupied Swainson's hawk nest tree. CDFW has concerns that increased disturbance near an occupied nest site may lead to adult hawks abandoning the nest and/or reduced fledging success. CDFW recommends the EIR include a measure to consult with CDFW prior to conducting construction work within 0.5 miles of a known Swainson's hawk nesting tree. CDFW also strongly recommends all construction activities wait until after the nesting season has ended (once young have fledged) when inside a nesting area.	Mitigation Measure BIO-39 requires that DWR limit construction activities within 0.5 mile of a known Swainson's hawk nest tree to outside of the breeding season to the extent practicable. As stated in Mitigation Measure BIO-39, DWR will provide survey results to CDFW prior to construction, including the location of nest trees within 0.5 mile of the construction footprint. Furthermore, if construction must occur within 0.5 mile of a known Swainson's hawk nest tree and cannot feasibly occur outside the breeding season or during the period of egg laying to post-fledging, DWR will submit plans to initiate construction activities to CDFW for written approval.
568-285	[ATT 1:] Chapter 13- 13.3.3.4, Impact BIO-39: Impacts of the Project on Swainson's Hawk, Mitigation Measure BIO-39, page 13-340. The DEIR allows the removal of suitable or known nesting trees for Swainson's hawk when deemed necessary. CDFW has concerns that removing known nest trees will reduce nesting success. CDFW requests the EIR include a measure to notify CDFW and	As required by Mitigation Measure BIO-39, if a known nest tree must be removed for construction activities, DWR will notify and obtain written approval from CDFW. DWR will avoid removal of known nest trees and suitable nest trees to the maximum extent practicable.

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	get CDFW permission before removing suitable or known nesting trees for Swainson's hawk.	
568-286	[ATT 1:] Chapter 13- 13.3.3.4, Impact BIO-44: Impacts of the Project on Tricolored Blackbird, CEQA [California Environmental Quality Act] Conclusion, pages 13-381- 13-382. The DEIR finds impacts of the Proposed Project to be less-than- significant with mitigation for tricolored blackbird. However, while the DEIR states the Compensatory Mitigation Plan (CMP) would be required to offset the impacts to nesting and foraging habitat, it states that no mitigation is specifically proposed for foraging habitat impacted by construction activities. While mitigation projects proposed to offset impacts to other resources may provide for suitable tricolored blackbird habitat, it is important to also include a commitment to tricolored blackbird foraging habitat mitigation given that habitat loss in the Delta [Sacramento-San Joaquin Delta] is a limiting factor for the species, particularly due to constant land use changes and deterioration of habitat. Reduced presence of tricolored blackbird in the Delta reflects the ongoing need to provide habitat protection and improvements. To avoid incurring significant project-specific and cumulative impacts to the species from habitat loss. CDFW recommends the EIR mitigate for both nonbreeding and breeding foraging habitat in addition to nonbreeding roosting habitat. CDFW suggest using the following ratios: 1:1 for breeding and nonbreeding foraging, 2:1 for roosting, and 3:1 for nesting. Mitigation should be applied to both temporary and permanent impacts caused by the Proposed Project.	Chapter 13, Terrestrial Biological Resources, Impact BIO-44; Appendix 3F, Compensatory Mitigation Plan for Special-Status Species and Aquatic Resources; and Attachment 3F.1, Compensatory Mitigation Design Parameters, have been modified to recognize breeding foraging habitat loss as a potential impact on tricolored blackbird and propose mitigation to compensate for this impact. Because many non-breeding foraging and roosting habitat types also serve as breeding foraging types, this change will also protect those habitat types. The revision to Attachment 3F.1 does not result in a change in impact determination for tricolored blackbird identified in Chapter 13 but adds additional mitigation to further reduce potential adverse effects on tricolored blackbird. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit. DWR maintains that the loss of non-breeding foraging and roosting habitat (where it does not overlap with breeding foraging habitat) is not a potentially significant impact because non-breeding foraging and roosting habitat for tricolored blackbirds (where it does not also overlap with breeding foraging habitat) is not limited on the landscape, overwintering tricolored blackbirds have greater foraging distances, and tricolored blackbirds are not as energetically limited to move about the landscape in search of food (as they are during the breeding season). In addition, mitigation for greater sandhill crane and Swainson's hawk foraging habitat will protect and enhance tricolored blackbird non-breeding foraging habitat.

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568-287	[ATT 1:] Chapter 13- 13.3.3.4, Impact BIO-44: Impacts of the Project on Tricolored Blackbird, Operations, page 13-383. The DEIR is missing a commitment to conduct surveys during the nonbreeding season of tricolored blackbird prior to construction to better understand roosting habitat use within the study area. CDFW recommends the EIR include measures to conduct surveys during the nonbreeding season of tricolored blackbird (August 1 - March 14) one year prior to the start of construction and the year of construction to establish use of roosting habitat. CDFW also recommends the EIR commit to 3 surveys within 15 days prior to construction and another survey 5 days prior to the state of construction. CDFW also recommends commitment to avoid roosting sites during construction with the use of a 300-ft no-activity buffer surround the roosting sites.	Mitigation Measure BIO-44 has been updated to include that surveys will be conducted during the nonbreeding season (August 1–March 14) 1 year prior to the start of construction and then the year of construction to establish use of roosting habitat. Mitigation Measure BIO-44 includes the commitment that three surveys will be conducted within 15 days prior to nighttime construction, with one of the surveys within 5 days prior to the start of nighttime construction and the establishment of a 300-foot non-disturbance buffer around occupied roost sites. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-288	[ATT 1:] Chapter 13- 13.3.3.4, Impact BIO- 44: Impacts of the Project on Tricolored Blackbird, Operations, page 13-385. The DEIR states that helicopters will not be used between 30 minutes before sunset to 30 minutes after sunrise to avoid disturbing tricolored blackbird roosting. While CDFW agrees, the restrictions should be expanded to include operational buffer zones (i.e., horizontal, and vertical feet) within which helicopters will not fly relative to a tricolored blackbird roosting site. CDFW recommends that the EIR include the exclusion of helicopters within 200 horizontal feet or 150 vertical feet of a tricolored blackbird roosting site.	Mitigation Measure BIO-44 has been updated to state that helicopters will not be used between 45 minutes before sunset to 45 minutes after sunrise to avoid the hours when tricolored blackbirds would be present at roosting sites. Because the helicopters would not operate when the roost sites were occupied, helicopters would not disturb tricolored blackbird roosting sites, therefore the proposed exclusion buffer would not offer any additional protections. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.

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568-289	[ATT 1:] Chapter 13 Appendix B-13B.58.5.3 Habitat Value Categories, Table 13B.58-1. Greater Sandhill Crane Habitat Values and Table 13B.59-1 Lesser Sandhill Crane Habitat Values, page 13B-379. The DEIR devalues freshwater emergent wetland habitat for greater and lesser Sandhill cranes by classifying it as high or moderate as opposed to very high, although roosting habitat in the Delta [Sacramento-San Joaquin Delta] is considered to be a priority for sandhill crane conservation. CDFW recommends the EIR increase the habitat value class for emergent wetlands to very high value for the greater sandhill crane, consistent with Shuford and Dybala (2017) and Littlefield and Ivey (2000).	In Appendix 13B, Species Accounts, the table titled Greater Sandhill Crane Foraging Habitat Value Classes and the table titled Lesser Sandhill Crane Foraging Habitat Value Classes present foraging habitat value classes for greater sandhill crane and lesser sandhill crane, respectively. Freshwater emergent wetlands provide important roosting habitat for both subspecies of cranes in the Delta. However, the relative foraging value of freshwater emergent wetlands when compared to other habitat types (e.g., corn and rice) is moderate for greater sandhill crane and lesser sandhill crane. The table titled Greater Sandhill Crane Foraging Habitat Value Classes has been revised from “Habitat Value” to “Foraging Habitat Value Classes” and additional language has been added to the text preceding the table for better clarity. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-290	[ATT 1:] Chapter 13 Appendix B- 13B.59.5.3 Habitat Value categories, Table 13B.59-1 Lesser Sandhill Crane Habitat Values, page 13B-390. The DEIR classifies freshwater emergent wetlands as "moderate" habitat value class, rather than "high," although roosting habitat in the Delta [Sacramento-San Joaquin Delta] is a priority for sandhill crane conservation. CDFW recommends the EIR increase the habitat value class for emergent wetlands to high value for the lesser sandhill crane, consistent with Shuford and Dybala (2017) and Littlefield and Ivey (2000).	Please see response to comment 568-289 regarding the classification of emergent wetlands related to sandhill cranes.
568-291	[ATT 1:] Chapter 13 Appendix B- 13B.72.2 Range and Distribution within the Study Area, page 13B-483.	The Swainson’s hawk population percentage and population estimate have been updated in the species account in Appendix 13B, Species Accounts, as recommended in the comment. None of the revisions described in the EIR

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	The DEIR states that over 75% of the statewide population of Swainson's hawk occurs within Yolo, Sacramento, Solano, and San Joaquin counties, but the reference included (Anderson et al. 2007) says 60%. CDFW recommends the EIR update the percentage of Swainson's hawks that occur within Yolo, Sacramento, Solano, and San Joaquin counties in the EIR. The percentage listed in the DEIR does not match the reference included. Additionally, consider updating these population numbers with more recent publications such as, Battistone et al. (2019) or Furnas et al. (2022).	resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-292	[ATT 1:] Chapter 13 Appendix B- 13B.72.3 Habitat Requirements, page 13B-4. The DEIR is missing a discussion on foraging patch size for the Swainson's hawk. CDFW recommends the EIR include a discussion on foraging patch size, as it helps the reader understand why modeled foraging habitat layers with patch sizes of at least 5 acres were chosen.	The Swainson's hawk species account in Appendix 13B, Species Accounts, has been updated to include a discussion on foraging patch size to provide supporting information for the minimum patch size requirement in the Swainson's hawk habitat model. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-293	[ATT 1:] Chapter 13 Appendix B- 13B.72.5.3 Habitat Value Categories, Table 13B.72-1. Swainson's Hawk Foraging Habitat Value Classes, page 13B-488. The DEIR updates Swainson's hawk foraging habitat values in Appendix 13B from the previous classification used in the California WaterFix EIR and ITP [Incidental Take Permit] Appendix 4 (HM Lands Criteria) by removing very high value and no value habitat and reclassifying some habitat types previously identified as high value as medium value. For	The Swainson's hawk foraging habitat value categories in Appendix 13B, Species Accounts, were initially simplified but have since been revised to include the very high, high, medium, and low categories that the commenter is referring to and that are consistent with the California WaterFix EIR and ITP habitat values. Because updated landcover and crop type GIS data were used for the Delta Conveyance Project, the names of some land cover and crop types are different than those that were used for California Water Fix. However, the habitat types and values that these represent are consistent with those

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	example, the habitat value class table in the DEIR does not include native pasture, mixed pasture, clover, miscellaneous grasses, non-irrigated native pasture and pasture, and native vegetation as High Value foraging habitat for the Swainson's Hawk. CDFW recommends the EIR increase the habitat values to be consistent with standard valuations or provide clear justification for why habitat values have decreased. CDFW recommends the EIR include native pasture, mixed pasture, clover, miscellaneous grasses, non-irrigated native pasture and pasture, and native vegetation as High Value foraging habitat types for Swainson's hawk and mitigate accordingly.	presented in the EIR and ITP for California Water Fix. “No Value” habitat was removed because habitat types in that category do not provide foraging habitat for Swainson’s hawk. Because these habitat types do not meet the definition of suitable habitat, they are not included in the suitable habitat model. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-294	[ATT 1:] Chapter 13 Appendix B- 13B.72.5.3 Habitat Value Categories, Table 13B.72-1. Swainson’s Hawk Foraging Habitat Value Classes, page 13B-488. In the DEIR, mixed pasture and miscellaneous grasses were classified as Medium Value foraging habitat for Swainson's Hawk. CDFW considers these habitat types to be high value. CDFW recommends the EIR classify mixed pasture and miscellaneous grasses as High Value foraging habitat for Swainson's hawk and mitigate accordingly.	The Swainson’s hawk foraging habitat value categories in Appendix 13B, Species Accounts, have been revised to classify mixed pasture and miscellaneous grasses as high-value foraging habitat. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-295	[ATT 1: Chapter 16- General Comment Multiple Pages. Chapter 16 of the DEIR currently does not include a discussion of impacts to recreational fishing because of the Proposed Project construction and operation. As the Proposed Project spans the Sacramento River through the Delta [Sacramento-San Joaquin Delta] and encompasses the south Delta, Proposed Project operations could impact recreational fishing	Recreational fishing and potential impacts on fisheries resources are discussed in Chapter 16, Recreation, and Chapter 17, Socioeconomics, specifically under ECON-5. Additionally, the findings in the Chapter 12, Fish and Aquatic Resources, section Impacts of the Project Alternatives on Fish and Aquatic Resources indicate that with mitigation the impacts on fish populations would be less than significant. This determination supports the recreation analysis that the project construction and operations would result in localized and minor possible effects on angling, as the

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	opportunities via impacts to recreationally important fish species, such as striped bass, fall-run Chinook salmon, late fall-run Chinook salmon, white sturgeon, black basses, and steelhead. CDFW recommends the EIR include an analysis and discussion of the potential impacts to recreational fishing opportunities and boating access from the Proposed Project and include minimization and mitigation as appropriate.]	opportunities for fishing are abundant and dispersed throughout the Delta. Based on the above, there is no indication that recreational fishing impacts would be any more than minor during construction and operations. Please refer to Chapter 12, specifically Impact AQUA-1, for further detail on the effects of the project on recreational fish species. Analysis of potential effects on boating access is also included in Chapter 16, Impact REC-1, which was determined to be less than significant.
568-296	[ATT 1:] Chapter 30-30.2.3.2. Climate Change Impacts in the Study Area Precipitation and Runoff 30-17. The DEIR states that Shasta Reservoir could be slightly more resilient to climate change due to its greater inflow of rain, rather than snowmelt. However, Shasta Reservoir is likely to be more resilient due to its uniquely high inflow of groundwater baseflow, not rainfall. The volcanic groundwater aquifers of the Shasta, McCloud and Pit Rivers provide years of additional storage, which creates resilience against extremes. Higher rainfall proportion does not increase resilience. CDFW recommends correcting this statement in the EIR and ensuring any assumption included in the analysis are adjusted as needed.	Text has been modified in Chapter 30, Climate Change, to characterize the Shasta Reservoir's resilience through a high inflow of groundwater baseflow. None of the revisions described in the EIR resulted in a new significant environmental impact or substantial increase in the severity of an environmental impact or required additional mitigation measures to which DWR was unwilling to commit.
568-297	[ATT 1:] Chapter 30- 30.4.2 Impacts of the Project Alternatives with Climate Change 30-24. CDFW was provided the 2040 CT climate scenarios but has not been provided with any of the modeling associated with the 2040 Median climate scenario.	Please see Common Response 2, Public Outreach Activities, regarding information request responses during the public comment period. DWR provided CDFW all modeling associated with the Draft EIR during the public comment period, including the 2040 Median climate scenario.

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	CDFW requests receipt of the complete model files for all scenarios described in the DEIR.	
568-298	[Attachment 2] Appendix B: References 14 California Code of Regulations § 119. Allison, A., S. Holley, L. McNabb, V. Kollmar, K. Kundargi, L. Linander, B. Serup, J. Julienne, M. Johnson, C. Purdy, M. R. Harris, S. Tsao, T. Nguyen and B. Jacobs (2020). Attachment 8: State Water Project effects on winter-run and spring-run Chinook Salmon. In State Water Project 2020 Incidental Take Permit (No. 2081-2019-066-00). California Department of Fish and Wildlife, Water Branch, West Sacramento, CA. Anderson, R., J. Dinsdale and R. Schlorff (2007). California Swainson's hawk inventory: 2005-2006, Prepared for California Department of Fish and Game, Resource Assessment Program, Sacramento, CA. Final Report P0485902. Available: http://www.dfg.ca.gov/rap/projects/swainsonhawk. Backer, L. C. and M. Miller (2016). Sentinel Animals in a One Health Approach to Harmful Cyanobacterial and Algal Blooms. Veterinary Sciences 3(8). Battistone, C. L., B. J. Furnas, R. L. A. J. L. Dinsdale, K. M. Cripe, J. A. Estep, C. S. Y. Chun and S. G. Torre (2019). Population and Distribution of Swainson's Hawks (<i>Buteo swainsoni</i>) in California's Great Valley: A Framework for Long-Term Monitoring. Journal of Raptor Research 53(3): 253-265. Baxter, R., W. Harrell and L. Grimaldo (1995). Splittail Spawning Investigations. IEP Surfboard.	The commenter provided this list for reference purposes in support of their comments. Those comments are addressed in these responses to the commenter's letter. DWR has reviewed all comments and will consider all comments in its decision-making process.

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Letter-Comment Number	Comment	Response
	(2017). Scientific framework for assessing factors influencing endangered Sacramento River winter-run Chinook salmon (<i>Oncorhynchus tshawytscha</i>) across the lifecycle. U.S. Department of Commerce. NOAA Technical Memorandum NMFSSWFSC-586.	
722-1	As a CEQA Responsible Agency, Caltrans needs to ensure that cultural resources that have the potential to be adversely affected and/or significantly impacted as a result of project activities in Caltrans' right of way be adequately addressed through proper studies, such as Section 106 and PRC 5024. The Draft EIR, HRSER [Historical Resources Survey and Evaluation Report] and ASAR [Archaeological Sensitivity Analysis Report] identify a number of archaeological sites and built environment resources either in Caltrans ROW [Right of Way] or in close proximity to it. In order to determine if there are significant and unavoidable impacts to cultural resources within our state-owned right of way, ground surveys need to be completed within existing state-owned right of way. If impacts are found to be significant, mitigation that reduces the impacts to a less than significant level needs to be identified. In accordance with Section 106 of the National Historical Preservation Act and Public Resources Code 5024, consultation with Native American Tribes, Groups, Individuals and Historical Societies is required. The Draft Environmental Document does not contain enough detailed documentation relating to consultation to allow Caltrans to comment on adequately addressing tribal concerns as it relates to project activities in Caltrans' right of way.	The EIR sufficiently evaluates impacts to cultural resources under CEQA. The Draft EIR is not intended to fulfill Caltrans' requirements for effect analysis or consultation under Section 106 of the National Historical Preservation Act and Public Resources Code 5024. Caltrans will be a cooperating agency for review under the National Environmental Policy Act (NEPA), with the U.S. Army Corps of Engineers serving as the lead federal agency for NEPA and for consultation under Section 106 of the National Historic Preservation Act. Outreach was conducted as described in Chapter 35, Public Involvement. Where the public offered substantive information during the scoping period, the comments were reviewed and incorporated as appropriate into the Draft EIR. Outreach conducted for the public comment period of the Draft EIR included targeted outreach to historic societies, cultural organizations, and local groups. Outreach to local historical societies and museums for research and historical resource identification is not mandated by CEQA. Chapter 32, Tribal Cultural Resources, describes consultation and engagement with the Tribes, as required by CEQA.