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2570	1	It is our recommendation that the project proponents develop a Water "Fix" that better balances protection and restoration of the ecosystem with reliability of water supply, as commanded by state law. (footnote 1: Delta Reform Act, Chapter 2, Section 85320) Under the Preferred Alternative (4A), water quality and water supply reliability improve for the State Water Project and Central Valley Project water users at the expense of threatened and endangered species and other beneficial uses of the San Francisco Bay and Delta. These negative impacts, in some cases, have been arbitrarily deemed insignificant by the RDEIR/SDEIS authors without clear scientific basis; in other cases, science has been selectively used to support determinations of no adverse or significant impact. Overall, as noted by the Delta Independent Science Board, "The Current Draft lacks key information, analyses, summaries, and comparisons. The missing content is needed for evaluation of the science that underpins the proposed project. Accordingly, the Current Draft fails to adequately inform weighty decisions about public policy". (footnote 2: Delta Independent Science Board, p.4)	<p>Please see Master Response 31 regarding the Delta Reform Act.</p> <p>The fundamental purpose of the project to make physical and operational improvements to the SWP system in the Delta, water supplies of the SWP and CVP for users located south of the Delta, Delta water quality, and Delta habitat, as described in Section 2.3 of Chapter 2, Project Objectives and Purpose and Need, of the EIR/EIS. The proposed project would decrease total exports of SWP and CVP water as compared to Existing Conditions and No Action Alternative in the summer and early fall months; and increase exports in the wet winter months when the river flows are high to improve conditions for aquatic resources in the Delta. The water would be stored at locations south of the Delta during the high flow periods to allow reductions in deliveries to SWP and CVP water users in drier periods. In accordance with the Project Objectives and Purpose and Need (see Chapter 2 of the EIR/EIS), all of the action alternatives would continue the operation of the SWP and CVP in accordance with the existing water rights and regulatory criteria adopted by the State Water Resources Control Board, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife. All of the alternatives evaluated in the EIR/EIS would only divert water under existing water rights which were issued to DWR and Reclamation by the State Water Board with consideration for senior water rights and Area of Origin laws and requirements. For more information on the project's purpose and need please see Master Response 3. For information on water rights please see Master Response 32.</p> <p>For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.</p>
2570	2	As noted previously, state and federal regulatory agencies have acknowledged that Delta outflows provided by current operations and water quality plans are not adequate to maintain, recover or restore ecosystem processes and declining fish species in the San Francisco Bay-Delta Estuary. The large-scale alterations to freshwater flows affect the quality and quantity of low-salinity habitats essential to fisheries in the Estuary, the movement of sediment through the system, and the productivity of food webs. The recently released State of the San Francisco Estuary Report states that "Freshwater flows from the Delta to the Bay for most of the last 35 years (since the 1980s) have been poor, impacting the estuarine ecosystem and the plants and animals that depend on it." (footnote 3: San Francisco Estuary Partnership 2015) The previous preferred alternative did not address this problem, nor does the revised Alternative 4A, also known as the California WaterFix (CA WaterFix). The new Alternative 4A in the RDEIR/SDEIS maintains or even increases State Water Project (SWP) and Central Valley Project (CVP) exports over current export levels: "Delta exports and SWP and CVP deliveries south of the Delta would increase under BDCP Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 2D, 3, 4 (H1-H4), 4A, 5, 5A, and 9 as compared to Existing Conditions and No Action Alternative." (footnote 4: RDEIR/SDEIS, Chapter 5, p. 5-8) A plan to increase exports fails to improve the current degraded conditions that result from inadequate freshwater flows through the Estuary.	<p>Please see response to comment 2570-2.</p> <p>The Final EIR/EIS includes model results specifically for Alternative 4A as compared to Existing Conditions and No Action Alternative. These results indicate that total Delta exports under Alternative 4A are approximately the same as compared to the No Action Alternative. Please refer to Appendix 6A of the Final EIR/EIS.</p> <p>Please refer to Chapter 5 of the EIR/EIS.</p> <p>The amount of water that can be diverted from the new north Delta facilities is set by Federal regulating agencies, ESA compliance and project design. Operations for the proposed project would still be consistent with the criteria set by the FWS (2008) and NMFS (2009) BiOps and State Water Resources Control Board Water Right Decision 1641 (D-1641), subject to adjustments made pursuant to the adaptive management process as described in the 2008 and 2009 BiOps (RDEIR/SDEIS Executive Summary ES.2.2). In addition to permitting constraints on daily operations of the SWP and CVP, DWR must maintain proper performance and bypass flows across fish screens when endangered and threatened fish species are present within the north Delta facilities area. The intake fish screens drive the overall size of the intake structure on the riverbank, and have been numbered and sized to permit water to flow through the screens within a predetermined flow regime set by California Department of Fish and Wildlife and NMFS fish screen criteria (BDCP Appendix 5B Section 3.B.3.3).</p> <p>See Master Response 28 regarding operational criteria. For information on adaptive management and monitoring please see Master Response 33.</p>
2570	3	In addition, the RDEIR/SDEIS makes the presumption that the north Delta diversions of the CA WaterFix will not be subject to the current Export:Inflow ratio, by appearing to exclude the proposed diversion points from the measurement of Delta inflow. (footnote 5: RDEIR/SDEIS, Chapter 4, p. 4.1-10) The quantity of freshwater flows from the Delta to the Bay is effectively determined by the Export:Inflow ratio. The Export:Inflow ratio places	<p>The Export/Inflow ratio requirements used in most of the alternatives in the EIR/EIS were defined as in the State Water Resources Control Board Decision 1641 (developed without the concept of the north Delta intakes) with the Exports defined at the south Delta intakes, and the inflows defined at a location downstream of the proposed north Delta intakes. With respect to Alternatives 4H4 and 4A, the Inflow value does not include the north Delta intake diversions because these diversions would be regulated by the North</p>

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		limitations on the amount of water that can be exported by the SWP and CVP based on a fraction of Delta inflows; the redefinition of this ratio by the plan proponents results in significantly higher exports while appearing to comply with D-1641 standards. (footnote 6: Denton 2015) The RDEIR/SDEIS must be revised to comply with D-1641 standards by including the north Delta diversions in the Export:Inflow ratio.	Delta Bypass flows; and the south Delta intake diversions would be regulated by the proposed Old and Middle River flow criteria. Alternative 4H4 modified the Export/Inflow definition to include the north Delta and south Delta intakes in the Export value, and moved the Inflow location upstream of the north Delta intakes. The likely operational changes from the different computation approaches of the Export/Inflow ratio are presented through a sensitivity analysis in the Appendix 5A Section D.10.1 of the Final EIR/EIS. The sensitivity analysis results included more than the long-term average values presented in Appendix 5A Section D.10.1. See Master Response 28 regarding operational criteria. For information on adaptive management and monitoring please see Master Response 33. For information on water rights and area of origin please see Master Response 32 and Master Response 26, respectively.
2570	4	<p>A higher Delta outflow scenario has been modeled and analyzed at the request of the State Water Resources Control Board (SWRCB). The SWRCB requested supplemental modeling from the plan proponents in order to evaluate a higher Delta outflow scenario than is offered by Preferred Alternative 4A. Analysis of this scenario showed more favorable conditions for Delta smelt and longfin smelt habitat, a shift of pelagic fish away from the export pumps, better conditions for out-migrating salmonids, and benefits to native estuarine species that have evolved under conditions of seasonally fluctuating salinity. The higher outflows in winter would push fresh water through the Delta and into San Francisco Bay, to the benefit of Bay ecosystems. Additionally, the specified quantity of Delta outflow in summer could provide for adaptive management of Delta smelt when a strong cohort is present. (footnote 7: RDEIR/SDEIS, Appendix C, p. C-2) In other words, this outflow scenario provides substantial improvements to public trust resources that Alternative 4A fails to provide. The speculative statement that “an alternative that included this operational scenario would likely not meet the project objectives or purpose and need statement” (footnote 8: RDEIR/SDEIS, Appendix C, p. C-1) is not sufficient justification to fail to develop an alternative with the potential to provide both water supply and ecosystem benefits, as called for by the Delta Reform Act.</p> <p>The results of this supplemental modeling showed a scenario that produces both higher Delta outflows and yields better average end-of-month storage in California’s major reservoirs, even under the impacts of climate change. Results showed substantially higher long-term average end-of-month storage for Lake Oroville in all water year types, slightly higher for Folsom Lake, and approximately the same for Lake Shasta and Trinity Lake. This provides benefits to both fish and people under the more frequent drought conditions expected in the future. As the current drought has demonstrated, a portfolio of other methods exist to replace the lower Delta exports. This higher Delta outflows approach also achieves the goal of reducing reliance on the Delta. This should be developed into a project alternative, incorporating other methods - both existing and proven but not yet implemented technologies - to provide water supply.</p>	<p>Consideration of the specific determination contained in the Delta Flow Criteria Report, which identified 75% of unimpaired net Delta outflow for January through June, would not have been feasible to include as an alternative in the EIR/EIS. A letter from the Executive Director of the State Water Board to the deputy secretary of the Natural Resources Agency on April 19, 2011 recognized that the determination did not consider the competing needs for water or other public trust resource needs, such as the need to manage cold-water resources in tributaries to the Delta. Further, implementation of these flows would also likely affect water users beyond those receiving CVP and SWP deliveries south of the Delta. As described in Section 3A.3.5, of Appendix 3A of the Final EIR/EIS, alternatives requiring impairment of senior water rights held by entities not participating in the BDCP were eliminated from full consideration in the EIR/EIS, as such rights could not be infringed by CDFW, USFWS, or NMFS through those agencies’ actions or through “ESA Section 7 consultation” with Reclamation. For more information on water rights please see Master Response 32.</p> <p>The supplemental modeling at the request of the SWRCB is being analyzed and will be included as Appendix 5E in the Final EIR/S.</p> <p>Please see Master Response 4 regarding alternatives development. The alternatives included in the Final EIR/EIS represent a legally adequate reasonable range of alternatives and the scope of the analysis of alternatives fully complies with both CEQA and NEPA. The specific proposals that were considered but ultimately rejected by the Lead Agencies are discussed in Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1.</p> <p>See Master Response 28 regarding operational criteria. For information on adaptive management and monitoring please see Master Response 33. For information on area of origin please see Master Response 26.</p>
2570	5	If implemented, the increase of exports and reduction of Delta outflows over current levels would have significant adverse impacts on the Bay-Delta Estuary’s fish and wildlife, particularly threatened and endangered species. Increased exports and reduced Delta outflows result in decreased turbidity in the Delta, which contributes to the increased mortality of anadromous fish like Chinook salmon; increased residence time of water in the Delta, which contributes to negative water quality impacts such as potential harmful algae blooms; and declines in longfin smelt and related estuarine species (American shad, bay shrimp) that form an important link in the estuarine food web between micro-organisms	<p>See response to comment 2570-2 regarding exports of the proposed project.</p> <p>The specific hydrodynamics, including Delta outflows, were included in the modeling and analysis of effects on fish. Overall, the preferred alternative, 4A, does not result in significant effects on fish. Please see Chapter 11 of the Final EIR/EIS for more information on Fish and Aquatic Resources. For more information on modeling please see Master Response 30 and Appendix 5A of the Final EIR/EIS.</p>

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		and predators, including birds, marine mammals, and other fish. The U.S. Environmental Protection Agency (US EPA) stated in its August 26, 2014 comment letter on the DEIR/S, "Data and other information provided in the Draft EIS indicate that that all CM1 alternatives may contribute to declining populations of Delta smelt, longfin smelt, green sturgeon, and winter-run, spring-run, fall-run and late-fall run Chinook salmon. Impact analyses in Chapter 11 show that entrainment, rearing, and migration conditions for these species are estimated, for many of the action alternatives, to be similar to, or worse than, existing conditions and sometimes worse than the future no action condition." (footnote 9: U.S. Environmental Protection Agency, p. 10) The revisions presented in Preferred Alternative 4A do not represent a substantial improvement to this assessment.	
2570	6	Furthermore, proposed project construction is expected to have significant impacts on Delta smelt, longfin smelt, steelhead trout, Sacramento splittail, green sturgeon, white sturgeon, Pacific lamprey, river lamprey, and spring-, fall-, late fall-, and winter-run Chinook salmon from noise associated with pile driving. (footnote 10: RDEIR/SDEIS pp. ES-48. ES-49. ES-51-54. ES-56-58) Plan operations under Alternative 4A are expected to deliver additional significant and adverse impacts to fall-run and late fall-run Chinook salmon. (footnote 11: RDEIR/SDEIS pp. ES-23 and ES-54) Indirect impacts on shorebirds and waterfowl are also expected. (footnote 12: RDEIR/SDEIS pp. ES 80-81) Many of these species are endangered; some are on the verge of extinction in the wild. Even negative impacts that are considered "small" by the project proponents could have disproportionate effects on these vulnerable species. In comparison, the benefits of plan operation to fish and wildlife are uncertain. For example, the Delta Independent Science Board (Delta ISB) has noted that the data provided on fish screens may be outdated, and has questioned how well the proposed fish screens on the new diversions will work, particularly on fish and larvae less than 20mm. (footnote 13: Delta Independent Science Board, p. 17) Finally, the RDEIR/SDEIS both inadequately addresses and uses outdated models for the possible influence of climate change and sea level rise, which may reduce assumed benefits and exacerbate negative impacts. (footnote 14: Delta Independent Science Board, pp. 11-13) The RDEIR/SDEIS presents a plan with substantial known adverse impacts and uncertain benefits to fish and wildlife. Under the current degraded conditions of the Bay-Delta Estuary, with the decline of many native fish and bird species, the Proposed Project presents an unacceptable risk to the health of the Bay-Delta Estuary.	<p>Potential project impacts to covered fish species under the preferred alternative, 4A, are determined to be less-than-significant and not adverse. Please see Chapter 11 in the Final EIR/EIS for more information.</p> <p>USFWS and NMFS have authority under the federal Endangered Species Act to determine whether the proposed project meets the regulatory standard of ESA Section 7, and CDFW, a CEQA responsible agency, has authority to determine if the proposed project meets the regulatory standards of CESA. For a discussion on the Endangered Species Act please see Master Response 29.</p> <p>See Master Response 28 regarding operational criteria and Master Response 33 for information on adaptive management and monitoring.</p> <p>Regarding the project's purpose and need please see Master Response 3 and Chapter 2 of the Final EIR/EIS.</p> <p>For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.</p>
2570	7	<p>Total sediment loading to the Delta as the result of the new north Delta diversions will be reduced by approximately 9%, according to the RDEIR/SDEIS. (footnote 15: RDEIR/SDEIS, Appendix A, Ch. 11, p. 11-184) This reduction has been deemed by the plan proponents to be less than significant because it is under 10%, and could be reduced further through restoration actions and the reuse of dredged material. (footnote 16: RDEIR/SDEIS Chapter 2, p. 2-2) The criteria for use of 10% as a benchmark for significance is not clear, particularly given the acknowledged potential to increase water clarity at areas downstream of the new north Delta diversions at certain times of the year.</p> <p>The majority of sediment inputs to the San Francisco Bay Area comes from the Sacramento River and San Joaquin River watersheds. A reduction in 9% sediment loading for areas downstream of the new diversions will equate to a similar reduction in sediment loading to the Bay. Work by the U.S. Geological Survey (USGS) shows direct correlation between suspended sediment concentrations at the Bay Bridge and flows from the Delta, (footnote 17: Shellenbarger et al. 2011) and a number of tracer studies have shown that sediment from the Delta reaches the South Bay. (footnote 18: McGann et al. 2013) Suspended</p>	<p>The text does not indicate that the alternatives are less than significant because the expected sediment reduction is below a specific threshold. Instead, the text indicates that 9% is a worst case scenario for the reduction in sediment coming specifically from the Sacramento River. A 9% reduction of a 39% share of total sediment inputs to the Bay (see McKee et al. 2013, as cited in the text) amounts to a reduction of 3.5-4.5% of total sediment in the Bay, which is deemed undetectable biologically. In addition, this value would be even lower if sediment reintroduction is conducted as expected, although this was not considered in arriving at the determination. See Chapter 11, Impact AQUA-218, Changes in Sediment Loading Effects on Downstream Bays as a Result of Operations, of the Final EIR/EIS for more information.</p> <p>For information on water quality please see Master Response 14 and Chapter 8 of the Final EIR/EIS.</p>

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		<p>sediment delivery to the San Francisco Bay has been declining for the past sixty years, and scientists have determined all parts of the Bay except for the South Bay to be net erosional in recent years. (footnote 19: Barnard et al 2013) With climate change and associated sea level rise, further reductions in sediment delivery could have significant impacts that would reduce the ability to restore wetlands, resulting in reduced shoreline flood protection and increased erosion. According to the recently released report The Baylands and Climate Change: What We Can Do, lack of sediment is a major threat to San Francisco Bay wetlands and the potential for climate change adaptation in the Bay. (footnote 20: State Coastal Conservancy 2015) Reduced sediment delivery will also reduce turbidity and increase the risk of nutrient loading problems and toxic algae blooms, including Microcystis. These potential impacts have not been adequately analyzed in the RDEIR/SDEIS.</p>	
2570	8	<p>According to the RDEIR/SDEIS, "water temperatures and hydraulic residence times in the Delta are expected to increase under all operational scenarios of Alternative 4, resulting in an increase in the frequency, magnitude and geographic extent of Microcystis blooms in the Delta." (footnote 21: RDEIR/SDEIS, Appendix A, Ch. 8, pp. 8-304-305) However, the authors conclude that this adverse impact to the Delta will not increase risk of Microcystis blooms in the San Francisco Bay. This conclusion is not supported by current research, which has shown that microcystins, found throughout the Bay, are clearly coming from the Delta in addition to other sources. (footnote 22: University of California Santa Cruz 2015) For years researchers have been noting a declining resistance to harmful algae blooms (HABs) in the San Francisco Bay, caused in part by reductions in sediment delivery from the Delta. More recent research indicates that there is cause for serious concern regarding the levels of toxins present in Bay algae blooms. (footnote 23: Kudela et al.2014)</p> <p>The recent Microcystis blooms in the Delta, caused by increased residence time and higher water temperatures related to the drought indicate that any increase in frequency, magnitude, and geographic extent of such blooms could have significant and adverse impacts to downstream areas, including Suisun Marsh and the San Francisco Bay. These impacts include the production of harmful algae blooms toxic to fish, wildlife, and humans. Endangered species of fish, shorebirds, and mammals, as well as humans who use the Bay for recreation and the western Delta for sources of drinking water, could suffer from these impacts. The oversight of recent research into Microcystis interactions between the Bay and Delta, and the San Francisco Bay's potential vulnerability to HABs caused by Microcystis, is a fundamental failure of the RDEIR/SDEIS to comply with CEQA. The threat posed by increased Microcystis blooms must be adequately addressed through more extensive analysis and full and appropriate offset of impacts.</p>	<p>The assessment of Microcystis in San Francisco Bay in Impact WQ-34 in Chapter 8, Water Quality, of the EIR/S acknowledges the presence of microcystin in the bay, and also acknowledges the potential for it to be transported in from the Delta inflow. The potential for increased Microcystis blooms and microcystin concentrations due to the project alternatives must be considered separate from the effects of climate change and associated temperature increases that would contribute to increased blooms. Potential increases in Microcystis blooms in the Delta are not expected to affect San Francisco Bay for three reasons: 1) the amount of dilution available in San Francisco Bay to dilute downstream transport of Delta-derived Microcystis and associated microcystins, 2) Microcystis is intolerant to San Francisco Bay salinity, and 3) high Delta outflows that could potentially transport Microcystis primarily occur during the winter and spring runoff season when the environment of San Pablo Bay (the only embayment of San Francisco Bay that would have low enough salinities to possibly support Microcystis blooms) is unsuitable for Microcystis growth. Nevertheless, Mitigation Measures WQ-32a and WQ-32b, which are provided for Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9 due to the potential impacts of Conservation Measures 2 and 4 discussed in Impacts WQ-32 and WQ-33 would be available to lessen the effects in the Delta, which would in turn lead to even less effects in San Francisco Bay than described. Alternatives 4A, 2D, and 5A would be expected to have a less than significant impact on Microcystis in the Delta, and thus would have a less than significant effect on microcystin levels in the bay. Please see Chapter 8, Water Quality, and Master Response 14.</p>
2570	9	<p>Although an effort has been made to reduce water quality impacts under Alternative 4A, significant impacts remain as noted in the RDEIR/SDEIS: "the cumulative condition would be adverse, or have reasonable potential to be adverse, for the following constituents: bromide, chloride, electrical conductivity, mercury, organic carbon, pesticides and herbicides, and selenium." (footnote 24: RDEIR/SDEIS, Chapter 5, p. 5-74) Furthermore, as noted above, Microcystis blooms in the Delta are expected to increase in frequency, magnitude, and geographic extent. These impacts will degrade water quality in the Bay-Delta Estuary beyond current degraded conditions and represent grave shortcomings to a plan intended to meet the co-equal goals of both improved water supply and Delta ecosystem. The following water quality impacts have been inadequately addressed in the RDEIR/SDEIS and must be minimized through mitigation measures or changes to the plan.</p>	<p>The text cited in the comment is water quality conditions under the "cumulative condition," which considers not just Alternative 4A, but past, present, and reasonably foreseeable projects and programs in combination with Alternative 4A. A cumulative condition may be significant due to factors or forces unrelated to the alternative. Where an alternative's incremental effect would be cumulatively considerable, mitigation has been provided. For Alternative 4A, the cumulatively considerable contribution to the significant EC impact is addressed via Mitigation Measure WQ-11, in Chapter 8 of the Final EIR/EIS. More information on water quality can also be found in Master Response 14. Please also see response to comment 2570-10.</p> <p>For information on cumulative impact assessment please see Master Response 9. For information on the Delta Reform Act please see Master Response 31.</p>

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2570	10	<p>The potential for increased chloride levels in Suisun Marsh, noted in our comment letter on the DEIR/S, remains unresolved in the RDEIR/SDEIS. Bay-Delta Water Quality Control Plan objectives for chloride and electrical conductivity are exceeded in Suisun Marsh under California WaterFix. Additional analysis and modeling links increased chloride and electrical conductivity levels to the design and siting of restoration measures; however, increases could be substantial and may not be feasibly controlled through restoration design and siting. Proposed mitigation measures are to conduct additional evaluation and modeling to determine the feasibility of preventing or offsetting chloride and electrical conductivity increases, as stated in the RDEIR/SDEIS: "Together, findings from [Mitigation Measures] WQ-11a and WQ-11b will indicate whether sufficient flexibility to prevent or offset electrical conductivity increases is feasible under Alternative 4." (footnote 25: RDEIR/SDEIS, Appendix A, Ch.8, p. 8-245) These actions, however, do not offer much reassurance without the dedication of funding or other resources to these measures, and do not commit the plan proponents to any action beyond studies and evaluations.</p> <p>Under all operating scenarios (H1-H4) of Alternative 4, Bay-Delta Water Quality Control Plan objectives for electrical conductivity will be exceeded more frequently throughout the Delta for agriculture and fish and wildlife. These impacts are considered to be adverse and significant, as stated in the RDEIR/SDEIS: "The increased frequency of exceedance of the San Joaquin River at Prisoners Point electrical conductivity objective and long-term and drought period average electrical conductivity could contribute to adverse effects on fish and wildlife beneficial uses" (footnote 26: Ibid, p. 8-241) and "The increased frequency of exceedance of the fish and wildlife objective at Jersey Point and Prisoners Point could contribute to adverse effects on aquatic life." (footnote 27: Ibid, p. 8-242) In addition, the western and southern Delta are listed under the Clean Water Act 303(d) impairment list for elevated electrical conductivity. "The water quality degradation that could occur in these portions of the Delta could make beneficial use impairment measurably worse." (footnote 28: Ibid, p. 8-242) Proposed mitigation measures, as above, do not provide assurance that electrical conductivity impairment will be successfully addressed and minimized. Not only fish and wildlife but also Delta agriculture and western Delta drinking water sources could be adversely and significantly impacted by elevated electrical conductivity.</p>	<p>In the Draft EIR/EIS, all project alternatives studied at that time (1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9) were found to have significant and unavoidable impacts on EC and chloride in the Delta. These impacts were due in part to apparent exceedances of Bay-Delta Water Quality Control Plan (WQCP) water quality objectives shown in the modeling results at several locations under Existing Conditions, the No Action Alternative, and BDCP Alternatives. It was known that there are several factors related to the modeling approach that may result in modeling artifacts that show objective exceedance when, in reality, no such exceedance would occur. Appendix 8H, Electrical Conductivity, Section 8H.1 of the of the Draft EIR/EIS (now Section 8H.2 in the Final EIR/EIS) described some of these factors, but did not include an evaluation of how many of these exceedances were thought to be a result of these factors and how many were expected to be actual project impacts. Furthermore, in the Draft EIR/EIS, mitigation measures for EC and chloride called for additional modeling efforts to determine if impacts could be avoided or mitigated.</p> <p>To address some of these issues, additional sensitivity analyses and other analyses were conducted to evaluate whether exceedances identified in the Draft EIR/EIS were modeling artifacts (and thus would not occur) or were potential project alternative-related impacts (which could occur). Based on the findings of these analyses, coupled with the original analyses in the Draft EIR/EIS, results of the EC and chloride assessments were qualified, and the impact determinations were revisited. Additionally, because these efforts shed light on why certain exceedances were occurring, it was possible to revise mitigation measures to better address the causes of the exceedances. All alternatives assessed in the Draft EIR/EIS (1A, 1B, 1C, 2A, 2B, 2C, 3, 4, 5, 6A, 6B, 6C, 7, 8, and 9), remained significant and unavoidable for chloride and EC. Although the impacts remain significant and unavoidable, the magnitude of the impacts would be substantially less than was indicated in the Draft EIR/EIS.</p> <p>Additional discussion of these EC and chloride analyses is included in Section 2.2.1 of the RDEIR/SDEIS, and Chapter 8, Water Quality and Appendix 8H, Electrical Conductivity, of this Final EIR/EIS.</p> <p>Please also see Master Response 14, Water Quality.</p>
2570	11	<p>According to the RDEIR/SDEIS, estimates of mercury and methylmercury concentrations in water and fish tissue as the result of CM1 operations were found to exceed Total Maximum Daily Load (TMDL) guidelines for the Delta. No mitigation for these exceedances is proposed, under the justification that the exceedances are small and therefore the likely result of modeling error. Due to the capacity of methylmercury to bioaccumulate in the environment and recognizing its toxicity to humans, the potential for these water quality impacts must be addressed through proposed mitigation. As noted in our previous comment letter, any potential exceedance of a TMDL should be addressed through mitigation that includes avoidance strategies or additional resources.</p>	<p>Please refer to Master Response 14 regarding methylmercury. Please see Chapter 8, Water Quality, of the Final EIR/EIS for more information on water quality.</p> <p>It is not expected that the level of tidal restoration proposed under Alternatives 4A, 2D, and 5A would cause fish tissue concentrations to increase, at a measurable level, outside of the immediate localized area of the tidal restoration sites. However, habitat restoration has the potential to increase water residence times and increase accumulation of organic sediments that are known to enhance methylmercury bioaccumulation in biota in the vicinity of the restored habitat areas. Fish tissue concentrations in the Delta already frequently exceed the Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins objective of 0.24 mg/kg for trophic level 4 fish in the Delta. The proposed tidal restoration may cause or contribute to increased fish tissue concentrations at a local level, though the magnitude of the increase is not quantifiable. The Basin Plan also includes methylmercury allocations for wetlands for various areas of the Delta. Because the proposed tidal restoration acreage is very small, it is possible that, relative to the allocations, the increased loading would be very small. However, it is still unknown how and if the allocations can be attained. The Basin Plan also requires that for many areas of the Delta (i.e., those needing reductions in methylmercury), proponents of wetland restoration projects shall (a) participate in Control Studies, or implement site-specific study plans, that evaluate practices to minimize methylmercury discharges, and (b) implement methylmercury controls as feasible. Design of restoration sites would be</p>

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			guided by Environmental Commitment 12, which requires development of site-specific mercury management plans as restoration actions are implemented to minimize methylmercury production. The effectiveness of minimization and mitigation actions implemented according to the mercury management plans is not known at this time, although the potential to reduce methylmercury concentrations exists based on current research.
2570	12	The refined selenium analysis in the RDEIR/SDEIS shows an increase in green sturgeon fish tissue to levels above the toxicity threshold of 5 milligrams per kilogram for all project alternatives. Because this is the lower toxicity threshold, the plan proponents have determined that the impact is not significant or adverse. Again, the scientific criteria for this determination is unclear, particularly since selenium also bioaccumulates in fish and the aquatic ecosystem and is toxic to humans, and since green sturgeon are federally listed as a threatened species. Therefore, actions must be taken to eliminate this impact. Instead of commitment, however, the RDEIR/SDEIS maintains the same Avoidance and Minimization Measure as in the prior DEIR/S, AMM27. AMM27 essentially consists of the commitment to manage water and vegetation levels as feasible, to reduce selenium concentrations, and to define adaptive management strategies that can be implemented as feasible. These measures fall short of specific actions to mitigate for this adverse impact.	An expanded discussion of residence time in the Delta and its effect on selenium bioaccumulation in the Delta was added in response to agency comments. Increased water residence times could increase the bioaccumulation of selenium in biota, thereby potentially increasing fish tissue and bird egg concentrations of selenium. However, if increases in fish tissue or bird egg selenium were to occur due to residence time changes alone, the increases would likely be of concern only where fish tissues or bird eggs are already elevated in selenium to near or above thresholds of concern. That is, where biota concentrations are currently low and not approaching thresholds of concern, changes in residence time alone would not be expected to cause them to then approach or exceed thresholds of concern. Based on the analysis, the most likely area in which biota tissues would be at levels high enough that additional bioaccumulation due to increased residence time from restoration areas would be a concern is the western Delta and Suisun Bay for sturgeon. Nevertheless, estimates of residence time increases in these areas are small enough that they are not expected to substantially affect selenium bioaccumulation in the western Delta. Please refer to Master Responses 14 regarding selenium. Please also see Chapter 8, Water Quality, of the Final EIR/EIS.
2570	13	The RDEIR/SDEIS finds that, "in summary, operations and maintenance under the four operational scenarios of Alternative 4, relative to the No Action Alternative, would result in long-term increases in hydraulic residence time of various Delta sub-regions during the summer and fall Microcystis "bloom period." (footnote 29: RDEIR/SDEIS Appendix, Ch. 8, p. 8-304) These impacts to the Delta increase the risk of a microcystin outbreak, which would have widespread negative impacts to fish and wildlife and people. Higher Delta outflows would reduce residence time and water clarity in the Delta, leading to a reduced risk of a microcystin outbreak.	The assessment of Microcystis in Impacts WQ-32 and WQ-33 acknowledges the potential impacts to beneficial uses under Alternative 4 and identifies them as significant. Mitigation Measure 32a and 32b are provided to lessen the impact. Also please see Master Response 14 regarding the Microcystis assessment. Information on water quality can also be found in Chapter 8 of the Final EIR/EIS.
2570	14	Where measurable water quality degradation is a potential outcome, the RDEIR/SDEIS should define specific and definite environmental commitments to mitigate for negative impacts. At the very minimum, the Total Maximum Daily Load exceedances work against the attainment of Total Maximum Daily Load objectives and as such do not contribute to the improved condition of the San Francisco Bay-Delta Estuary. Reduced water quality in the San Francisco Bay-Delta Estuary, and potential adverse impacts to human health and threatened and endangered species, are not an acceptable tradeoff for increased reliability of water supplies.	Water quality degradation was evaluated as discussed in Section 8.3.2.3, Effects Determinations, in Chapter 8, Water Quality, of the Final EIR/EIS. Where degradation would occur that would result in significant/adverse effects to beneficial uses, mitigation is provided. For example, for the preferred Alternative 4A, where significant EC impacts to agricultural uses due to degradation at Emmatton have been identified, Mitigation Measure WQ-11 is proposed. See Master Response 14 regarding water quality.
2570	15	The original purpose of the Bay Delta Conservation Plan (BDCP) was to make significant progress toward the coequal goals of the 2009 Delta Reform Act: "'Coequal goals' means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place." (footnote 30: Delta Reform Act, Section 29702) With the separation of the BDCP into California WaterFix and California EcoRestore, and even earlier, the plan has drifted away from its stated purpose. The potential benefits to the Delta ecosystem offered by the California WaterFix are overshadowed by significant adverse impacts to water quality and threatened and	The proposed project was developed to improve Delta habitat and SWP/CVP water supply reliability. For more information regarding the proposed project's purpose and need please see Chapter 2 of the Final EIR/EIS. Also see Master Response 3 for the Purposed and need for the proposed project Regarding Fish and Aquatic resources please see Chapter 11 of the Final EIR/EIS. For information on water quality please see Master Response 14 and Chapter 8 of the Final EIR/EIS. Both the BDCP and California WaterFix are consistent with and further the achievement of the coequal goals by reducing impacts on sensitive fish species by reducing reverse flows and fish entrainment and impingement in the south Delta and protecting CVP and SWP water supplies by increasing opportunities to divert water during high-outflow events and making such supplies more resilient to adverse impacts of

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		<p>endangered species. The benefits to water supply, by comparison, are much more certain. In the separation of the two elements of BDCP into two programs, the California WaterFix has maintained its previous scale, while California EcoRestore has reduced the proposed acreage of habitat restoration by over fifty percent. This trajectory seems to indicate that, in fact, the coequal goals are not being given coequal priority. As noted above, the adverse impacts to water quality, fish and wildlife, and the ecosystem provide a cumulative picture of further damage to the Bay-Delta Estuary while CVP and SWP water supplies improve in both quantity and quality. The supplemental modeling provided in Appendix C, however, demonstrates that a more reliable water supply is available while also benefiting endangered fish and wildlife, through a reasonable reduction in exports.</p>	<p>climate change and associated sea level rise, as well as catastrophic levee failures that may result from seismic events or other causes.</p> <p>See Master Response 31 regarding the Delta Reform Act. For information on area of origin please see Master Response 26.</p>
2570	16	<p>By maintaining or increasing current CVP and SWP exports from the Delta, the BDCP fails to reduce reliance on the Delta as mandated by the Delta Reform Act, Section 85021, which states, "The policy of the State of California is to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency." (footnote 31: Delta Reform Act. Section 85021) Subsequently, the California Water Action Plan has developed a suite of priority actions that implement this policy. The RDEIR/SDEIS does not contribute to a reduced reliance on the Delta, and thus does not comply with state policy.</p>	<p>Under the range of alternatives considered in the EIR/EIS full contract amounts are not delivered in the majority of times to the SWP and CVP water contractors, as presented in Appendix 5A, Section C, CALSIM II and DSM2 Model Results, of the EIR/EIS. Long-term water deliveries to SWP and CVP water contractors located south of the Delta are lower under Alternatives 6, 7, and 8 as compared to the Existing Conditions and the No Action Alternative. The EIR/S and the Draft BDCP were prepared in a manner to comply with the 2009 Delta Reform Act, as described in Master Response 31.</p> <p>Regarding the project's purpose and need please see Master Response 3 and Chapter 2 of the Final EIR/EIS.</p> <p>The project is just one element of the state's long-range strategy to meet anticipated future water needs of Californians in the face of expanding population and the expected effects of climate change. It is important to note that the project is not intended to serve as a state-wide solution to all of California's water problems, and it is not an attempt to address directly the need for continued investment by the State and other public agencies in conservation, storage, recycling, desalination, treatment of contaminated aquifers, or other measures to expand supply and storage (as described in Section 1.C.3 of Appendix 1C, Water Demand Management).</p>
2570	17	<p>As demonstrated in the above comments, the proposed project poses substantial risks to the health of the Bay-Delta Estuary. The most tangible benefits accrue to those who benefit from higher and more reliable exports. A more reliable water supply is needed, but not at the price of possible species extinction and threats to human health and safety for those who live in the San Francisco Bay and Delta. The supplemental modeling requested by the State Water Resources Control Board points the way toward a more balanced approach, one in which fish and wildlife benefit from higher Delta outflows, while exporters benefit from better water quality and a more reliable, though smaller, water supply. This type of approach would better reflect state policy and should be offered as a fully developed project alternative: By maintaining or increasing current exports, the current Preferred Alternative 4A fails to take the necessary steps to address the consensus from regulatory agencies and scientists that improved Delta outflows are essential to recovery of the health of the Bay-Delta Estuary.</p>	<p>The fundamental purpose of the project to make physical and operational improvements to the SWP system in the Delta, water supplies of the SWP and CVP for users located south of the Delta, Delta water quality, and Delta habitat, as described in Section 2.3 of Chapter 2, Project Objectives and Purpose and Need, of the EIR/EIS. The proposed project would decrease total exports of SWP and CVP water as compared to Existing Conditions and No Action Alternative in the summer and early fall months; and increase exports in the wet winter months when the river flows are high to improve conditions for aquatic resources in the Delta. The water would be stored at locations south of the Delta during the high flow periods to allow reductions in deliveries to SWP and CVP water users in drier periods.</p> <p>During preparation of the EIR/EIS, the State Water Resources Control Board requested specific assumptions be included in one of the alternatives. This became Alternative 8. During preparation for submittal of information to the State Water Resources Control Board for the Change in Point of Diversion request for the DWR and Reclamation water rights, the lead agencies desired to request consideration of operations of the new conveyance facilities over a range of alternatives that could occur to provide a range of Delta outflow conditions. For purposes of this analysis, some of the assumptions related to Alternative 8 were combined with Alternative 4A assumptions to increase Delta outflow throughout the year and reduce reverse flow conditions in the south Delta. Delta exports under Alternative 8 would result in a reduction in Delta exports in all months except April and May over the long-term as compared to the No Action Alternative. The reduction in exports would result in increased Delta outflow while maintaining operational criteria for the SWP and CVP reservoirs upstream of the Delta. Please also see Appendix 5E of the Final EIR/EIS, Supplemental Modeling Requested by State Water Resources Control Board Related to Increased Delta Outflows. For more information on modeling please see Master Response 30.</p>

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			<p>As already discussed above, the amount of water DWR can pump from the new north Delta facilities is set by Federal regulating agencies, ESA compliance and project design. Operations for the proposed project would still be consistent with the criteria set by the FWS (2008) and NMFS (2009) BiOps and State Water Resources Control Board Water Right Decision 1641 (D-1641), subject to adjustments made pursuant to the adaptive management process as described in the 2008 and 2009 BiOps (RDEIR/SDEIS Executive Summary ES.2.2). In addition to permitting constraints on daily operations of the SWP and CVP, DWR must maintain proper performance and bypass flows across fish screens when endangered and threatened fish species are present within the north Delta facilities area. The intake fish screens drive the overall size of the intake structure on the riverbank, and have been numbered and sized to permit water to flow through the screens within a predetermined flow regime set by California Department of Fish and Wildlife and NMFS fish screen criteria (BDCP Appendix 5B Section 3.B.3.3).</p> <p>See Master Response 28 regarding operational criteria. Adaptive management and monitoring is discussed in Master Response 33. For information on water rights and area of origin please see Master Response 32 and Master Response 26, respectively.</p>
2571	1	<p>The BDCP was portrayed as a Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) that implements certain conservation actions to benefit sensitive species and habitats while increasing water supply reliability for millions of Californians. The wildlife agencies and participating water contractors would memorialize their commitments to undertake these conservation actions in an Implementing Agreement that provided assurances that as long as the conservation measures were being implemented per the BDCP, the water contractors would receive increased water reliability.</p> <p>While the shift to an alternative approach to federal and state endangered species permitting is understandable, this change will result in less supply certainty for federal and state water contractors. Without the assurances provided by the federal Section 10 and state Section 2835 incidental take permits, the continued availability of sufficient water for export is questionable.</p> <p>With abandonment of the BDCP approach, the Final EIR/EIS should more clearly identify how the new permitting approach maintains and enhances water supply reliability to the same levels anticipated under the BDCP, and quantify the annual amounts expected to be available for each water contractor compared to the BDCP approach.</p>	<p>Alternative 4A, also known as California WaterFix, has been developed in response to public and agency input and is the new CEQA Preferred Alternative. Alternative 4A is also the NEPA Preferred Alternative, a designation that was not attached to any of the alternatives presented in the 2013 Public Draft EIR/EIS. Alternative 4 remains a potentially viable alternative and is being carried forward in this RDEIR/SDEIS because it represents the original habitat conservation plan/natural community conservation plan (HCP/NCCP) alternative approach, and because it provides an important reference point from which the Alternative 4A, 2D, and 5A descriptions and analyses were developed. If the Lead Agencies ultimately choose the alternative implementation strategy and select an alternative presented in the RDEIR/SDEIS after completing the CEQA and NEPA processes, elements of the conservation plan contained in the alternatives in the 2013 Public Draft EIR/EIS may be utilized by other programs for implementation of the long term conservation efforts.</p> <p>As indicated in this comment, the new preferred alternative is now Alternative 4A (California WaterFix) and does not involve an HCP component. However, the lead agencies maintain that the new preferred alternative continues to meet the co-equal goals of a reliable water supply and a restored Delta ecosystem to benefit all water users.</p> <p>The differences in annual deliveries and south of Delta exports for conditions with and without the restoration actions identified in the Draft BDCP are indicated through the comparison of conditions under Alternative 4A with conditions under the No Action Alternative for 2030, to the comparison of conditions under Alternatives 4 H3 and 4H4 with conditions under the No Action Alternative for 2060. However, it is acknowledged that without HCP and/or NCCP agreements, there could be future operational changes related to either reconsultation of existing biological opinions or new consultations related to new listing of special status species.</p>
2571	2	<p>The commitment of individual State Water Project (SWP) or Central Valley Water (CVP) contractors to participate financially in implementing the proposed project remains undetermined and it is likely that some contractors will decline given the reduced level of certainty resulting from the alternative permitting approach.</p> <p>With abandonment of the BDCP approach, the Final EIR/EIS should specify the criteria to be used by DWR and Reclamation in determining how to coordinate and allocate water between the SWP and CVP, and among the funding and non-funding participants. While typically not an issue for CEQA, the importance of funding to overall project viability cannot be overstated. The water contractors are Responsible Agencies under CEQA and will need</p>	<p>Comment is requesting funding information. Please see Master Response 5 (Funding). The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.</p>

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		<p>accurate cost and allocation information for each project component to make an informed decision regarding participation. The Final EIR/EIS should include details on how DWR and Reclamation intend to guarantee that each participating water contractor provides the revenue necessary to pay for the proposed project, including any necessary provisions for "step-up" should one or more water contractors default on funding obligations, and a legal analysis of relying on property taxes as a back-up security for debt. In addition, the Final EIR/EIS should evaluate the potential for indirect environmental effects associated with various proposed funding types and sources.</p>	
2571	3	<p>Page 4.1-1, lines 32 through 34 state that: "Alternatives 4A...would not serve as... (HCPs/NCCPs)... but rather would achieve incidental take authorization under ESA Section 7 and CESA Section 2081(b)."</p> <p>While ESA Section 10/Section 2835 (HCP/NCCP) permits are no longer preferred, the Water Authority is concerned that continuing the current management approach using Section 7/Section 2018 permits lack sufficient assurances to ensure a reliable water supply for millions of Californians. The Water Authority is also concerned over the lack of collaborative decision-making inherent in implementing adaptive management and real time water operational changes under traditional Section 7/Section 2081 permits. The Water Authority encourages the lead agencies to pursue innovative permitting approaches with the federal and state wildlife agencies (e.g., hybrid Section 7/10 permits, incorporating all or parts of Candidate Conservation Agreements with assurances and Safe Harbor Agreements, along with a similar innovative approach on the state 2081 permit) that provide as much certainty as legally possible for participating water contractors. The complexity of the Bay-Delta ecosystem and the large human dependence on exported water supplies warrant consideration of inclusive, cooperative, and flexible permitting approaches.</p>	<p>The proposed project has been developed with the goals of minimizing and avoiding incidental take of listed species to the maximum extent practicable. Chapter 11, Fish and Aquatic Resources, and Chapter 12, Terrestrial Biological Resources, EIR/EIS, describe effects of the proposed project and several alternatives on fish and wildlife species in the Plan Area.</p> <p>Section 7 requires that federal agencies, in consultation with the federal fish and wildlife agencies ensure that their actions are not likely to jeopardize the continued existence of species or result in modification or destruction of critical habitat.</p> <p>Where the alternative does not include preparation of an HCP, ESA compliance for construction and operation of water intakes in the north Delta and associated conveyance facilities would be achieved solely through Section 7. For these alternatives, USFWS and NMFS would not issue a permit and would not act as a lead agency for NEPA compliance. Where Section 7 is the ESA compliance strategy, USFWS and NMFS will assume roles as cooperating agencies for purposes of the NEPA review.</p> <p>Reclamation would be the lead federal action agency for Section 7 compliance where a non-HCP alternative is selected. Reclamation's Section 7 compliance would be expected to also address the Section 7 compliance needs for the USACE permit actions. In cooperation with DWR, Reclamation would prepare a biological assessment (BA) for submission to USFWS and NMFS requesting formal consultation under ESA Section 7.</p> <p>A biological opinion is not required prior to the release of the Draft BDCP/CWF EIR/EIS. For the Proposed Action, the USFWS and NMFS will conduct an internal ESA section 7 consultation prior to issuance of an Section 10(a)(1)(B) permit for the Proposed Action. These federal agencies will coordinate the ESA consultation process and other environmental review processes, such as the National Environmental Policy Act (NEPA), consistent with federal regulations. In addition, the USFWS and NMFS will consult with the United States Bureau of Reclamation (Reclamation) to complete biological opinions or a joint biological opinion prior to federal action to carry out the proposed project.</p> <p>For more information please see 1.1.5.2 of Section 1 Introduction of the RDEIR/SDEIS.</p> <p>Please also refer to Master Response 33 for discussion of the adaptive management and monitoring strategy for the proposed project.</p> <p>FROM DWR:</p> <p>This comment is an opinion that the ESA compliance approach for California WaterFix should be and expresses concern that collaborative decision-making for adaptive management and real time operations would not occur under an ESA Section 7.CESA 2081(b) approach.</p>
2571	4	<p>Page 4.1-15, Table 4.1-3 lists the environmental commitments for preferred Alternative 4A. The total mitigation acreage shown for all habitat types appears to be around 15,548 acres.</p> <p>BDCP Conservation Measure 1 (CM1) was defined as the conveyance facility (intakes and</p>	<p>The purpose of the EIR/EIS is to analyze the impacts of the alternatives on the environment under the legal framework of NEPA and CEQA. The analysis covers 26 resource areas within the plan area and provides a solid basis for a comparison among the alternatives. Because the various restoration activities will be</p>

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		<p>tunnels). The proportional direct and indirect mitigation acreage and costs for CM1 to be borne by the participating state and federal contractors is shown in Table 8-41 of the Draft EIR/EIS (pages 8-74 through 8-76). However, it is unclear how the required mitigation acreage and costs for CM1 in Alternative 4 compare to the required mitigation acreage and costs for the new Alternative 4A. Further, it is unclear if the modeling performed for Alternative 4, which included a different baseline for impact analysis, is appropriate and accurately reflects expected impacts for Alternative 4A. An improper/inconsistent baseline will result in an inaccurate impact analysis, yielding mitigation requirements that do not reflect actual impacts. The Final EIR/EIS should provide a table showing a side-by-side comparison of the expected direct and indirect impacts, required mitigation acreage (whether conservation measure or environmental commitment), and mitigation costs for CM1 and Alternative 4A. The Final EIR/EIS should also include a table that compares the baseline assumptions used in the impact analysis for Alternative 4 and Alternative 4A. This will aid in clarifying how the new preferred alternative has lessened potential impacts and required mitigation, and reduced costs for participating state and federal water contractors.</p>	<p>implemented at different times and thus are evaluated at a programmatic level, the kind of detailed aggregated table requested is not possible at this time.</p> <p>Please also refer to Master Response 1 for a discussion regarding environmental baselines.</p>
2571	5	<p>The relationship between the environmental commitments (i.e., project mitigation) for preferred alternative 4A and the separate ecosystem restoration efforts anticipated under California EcoRestore, as well as current obligations contained in existing state and federal permits (e.g., Biological Opinions), needs additional clarification. The participating water contractors need to clearly understand where the "bright line" is between project mitigation obligations and general ecosystem restoration. The Final EIR/EIS should provide more detail on how the "environmental commitments" of Alternative 4A relate and contribute to the associated, but separate, California EcoRestore effort, as well as how those commitments contribute to meeting obligations in existing permits.</p>	<p>Although Alternatives 4A, 2D, and 5A include only those habitat restoration measures needed to provide mitigation for specific regulatory compliance purposes, habitat restoration is still recognized as a critical component of the state's long-term plans for the Delta. Such larger endeavors, however, will likely be implemented over time under actions separate and apart from these alternatives. The primary parallel habitat restoration program is called California EcoRestore (EcoRestore), which will be overseen by the California Resources Agency and implemented under the California Water Action Plan. Under EcoRestore, the state will pursue restoration of more than 30,000 acres of fish and wildlife habitat by 2020. These habitat restoration actions will be implemented faster and more reliably by separating them from the water conveyance facility implementation.</p> <p>The originally proposed habitat restoration measures and related Conservation Measures (CMs) (i.e., CM2 through CM21) would not be included as part of the Proposed Action, except to the extent required to mitigate significant environmental effects under CEQA and meet the regulatory standards of ESA Section 7 and California Endangered Species Act (CESA) Section 2081(b).</p>
2571	6	<p>Page 4.1-21, lines 2 through 6 state that: "Commitments to adaptive management... will be secured through a MOA... Details... including adaptive management decision-making, an organizational structure for... decisions, and funding... will be developed through the MOA..."</p> <p>Comment: Adaptive management is highlighted as the mechanism through which construction and operation of the new conveyance facilities will be managed. Freshwater outflows (and corresponding export flows) will be determined through current and future scientific studies, monitoring, and a yet to be developed Memorandum of Agreement (MOA) between the lead agencies, public water agencies, and wildlife agencies. In other words, the MOA will govern future operation of the conveyance facility. Given the crucial nature of this document, it is especially disappointing that the additional details to be provided in the MOA are not yet available. These details will certainly be required for potential participating water agencies to decide whether to commit the funds and resources necessary to implement the preferred alternative. The Final EIR/EIS should provide greater clarity on the adaptive management "details" expected to be included in the MOA and provide a schedule and process for MOA development and implementation. Further, the Final EIR/EIS should include additional details on the extent of authority for participating entities, i.e., the water contractors need assurances that their interests will be incorporated</p>	<p>Comment requests additional clarity on several topics. Master Responses have been prepared and the reader is directed to the following master responses for more details: Master Response 33 (Adaptive Management) and Master Response 5 (Governance and Funding).</p>

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		in all operational actions.	
2571	7	<p>Page 9-269, Table 9-32 of the Draft BDCP Plan identifies the total average water deliveries to the contractors under various take alternatives. As shown, water supplies available under the BDCP range from 4.7 to 5.6 million acre feet per year (MAFY) depending on high or low outflow scenarios, respectively. Average annual flows for the existing conveyance scenarios (defined as the "without BDCP" scenario on page 9-39) ranged from 3.4 to 3.9 MAFY for the high and low outflows, respectively. The "without BDCP" scenario contemplated continuing fish population declines and imposition of additional operational constraints that would reduce water supply availability.</p> <p>With abandonment of the BDCP approach, the Final EIR/EIS should clarify and explain how the new permitting approach will prevent available water supplies from being reduced to the existing conveyance scenario volumes (e.g., 3.4 to 3.9 MAFY) shown in Table 9-32. In other words, how would the new permitting approach prevent available supplies from being further reduced to 3.4 to 3.9 MAFY, if fish population continues to decline even after preferred Alternative 4A is constructed?</p>	<p>The proposed project aims to stabilize water supplies, and exports could only increase under certain circumstances. Water deliveries from the federal and state water projects under a fully-implemented Alternative 4A are projected to be about the same as the average annual amount diverted in the last 20 years. Although the proposed project would not increase the overall volume of Delta water exported, it would make the deliveries more predictable and reliable.</p> <p>See Response to Comment 2571-3 for a discussion of how the proposed project has been developed with the goals of minimizing and avoiding incidental take of listed species to the maximum extent practicable. Chapter 11, Fish and Aquatic Resources, and Chapter 12, Terrestrial Biological Resources, EIR/EIS, describe effects of the proposed project and several alternatives on fish and wildlife species in the Plan Area. This response also addresses ESA compliance.</p>
2572	1	By letter dated July 22, 2014, Placer County provided comments on what was then the proposed draft BDCP, the draft Implementing Agreement and the Draft Environmental Impact Report/Environmental Impact Statement. In reviewing the RDEIR/DEIS, it is apparent that none of the issues and concerns raised by the County or the other Placer County and American River watershed stakeholders are addressed in the RDEIR/RDEIS.	As explained in the Executive Summary of the RDEIR/SDEIS, all of the comments received during the Draft EIR/EIS 2013–2014 public review period were considered in the development of the RDEIR/SDEIS. The RDEIR/SDEIS does not include responses to comments on the Draft EIR/EIS, though some revisions have been made in response to comments received on the Draft EIR/EIS. Consistent with the requirements of the California Environmental Quality Act (CEQA Guidelines §15088) and the National Environmental Policy Act (40 C.F.R. § 1503.4) and policies held by all Lead Agencies governing the implementation of CEQA and NEPA, all comments received on the DEIR/EIS and RDEIR/SDEIS will be addressed in the Final EIR/EIS. Please see Master Responses 42 regarding treatment of public comments.
2572	2	Placer County has an overarching concern with and sees flaws in the RDEIR/SDEIS in that it completely fails to adequately address or answer basic questions regarding short -and long-term impacts to the American River region and its water supplies.	<p>Water Supply and flow conditions on the American River downstream of Nimbus Dam have been evaluated with and without the proposed project in Section 4.3 of the RDEIR/SDEIS and Chapter 5 and Appendix 5A, Section C, of the Final EIR/EIS. With respect to water users with senior water rights in Placer County, there would be no change to water deliveries under the proposed project and all action alternatives as compared to the No Action Alternative. Senior water rights deliveries to Placer County users in the Bear and American River watersheds are included in the basic hydrologic assumptions in the CALSIM II model. For deliveries from SWP and/or CVP facilities or downstream of SWP and/or CVP reservoirs, the CALSIM II model prioritized deliveries to senior water rights holders (e.g., Placer County Water Agency) prior to meeting environmental criteria for SWP and CVP operations or deliveries to SWP and CVP water contractors. There are also increases to CVP municipal and industrial water contract deliveries in Placer County under the No Action Alternative as compared to the Existing Conditions due to projected population growth which are consistent with water demand projections in the Urban Water Management Plans and Agricultural Water Management Plans submitted to DWR by 2012 which include approaches to meet the 20 percent per capita urban water use by 2020. As shown in Appendix 5A, Section C, of the Final EIR/EIS, CVP municipal and industrial water contract deliveries in Placer County under Alternative 4A (Proposed Project) would be similar to deliveries under the No Action Alternative.</p> <p>As shown in Appendix 5A, Section C, of the Final EIR/EIS, American River flows downstream of Folsom Lake would be lower under the No Action Alternative as compared to the Existing Conditions due to climate change and population growth. Under the Proposed Project (Alternative 4A), American River flows downstream of Folsom Lake would be similar or greater in many months, and lower in July through September and November as compared to the No Action Alternative. The effects of these changes to biological resources are described in Chapters 11 and 12 of the EIR/EIS. Please also see Master Response 32,</p>

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			Water Rights Issues.
2572	3	The improper narrow focus of the RDEIR/SDEIS ignores the reasonably foreseeable and inevitable changes to upstream operations, including changes in operation of Folsom Lake reservoir and the impacts associated with those changes; and, including water supply impacts and impacts to environmental resources in the Lower American River.	Please refer to responses to comments 2572-1 and 2. Please see Master Response 25 for information regarding upstream reservoir effects.
2572	4	By failing to provide and analyze: 1) a full without-project (WOP) conditions analysis; 2) a full range of alternatives; 3) disclosure of the full scope of impacts of the actual "project"; and 4) identification of all feasible mitigation, these documents do not fulfill the statutory obligations of the California Environmental Quality Act or the National Environmental [Policy] Act.	<p>The lead agencies believe that the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS are complete in their evaluation of impacts (using the best available science and modeling), direct and cumulative; that the project description is complete and satisfies the requirements of CEQA and NEPA; and that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies believe that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information regarding the potential impacts and proposed mitigation measures on which to make informed comments, which have been considered and incorporated into the Final EIR/EIS.</p> <p>The BDCP/ California WaterFix EIR/EIS evaluate 18 action alternatives. The action alternatives were selected through a three-step screening process and documented in Appendix 3A, Identification of Water Conveyance Alternatives- Conservation Measure 1, of the 2013 Draft EIR/EIS. The lead agencies believe that the EIR/EIS more than meets CEQA and NEPA requirements to evaluate a range of alternatives. For more information regarding alternatives to the proposed project please see Master Response 4.</p>
2572	5	The without-project (WOP) conditions should focus on water supply and habitat in the future in all of the affected physical areas: 1) each of the watersheds feeding the Delta; 2) the Delta itself; and 3) export areas.	The study areas included in the EIR/EIS analyses are identified in Section 4.2.1.2 of the Draft EIR/EIS: upstream of the Delta, the Delta, and the SWP and CVP service areas. The BDCP Plan Area is defined by the boundaries of the legal Delta with the addition of the Suisun Marsh area. The EIR/EIS project area includes the Plan Area, upstream of the Delta region (including SWP and CVP reservoirs and the water bodies downstream of those reservoirs that could be effected by changes in reservoir conditions), and the SWP and CVP export Service Areas because some of the effects of implementing the project or its alternatives would extend beyond the BDCP Plan Area. The analysis in the EIR/EIS includes impacts to Delta outflows, which ultimately reach the San Francisco Bay as well as impacts to Southern California and the San Joaquin Valley. Please see response to comment 1556-3.
2572	6	WOP [without-project] conditions should be based on the present set of operating rules, regulations, agreements and water rights, and in the presence of climate change and growth projections. As written, the WOP analysis in the public review draft ignores a number of senior and area of origin water rights, Federal Energy Regulatory Commission (FERC) permit conditions, and fisheries flow and temperature requirements on the American River, the Yuba River and Bear River where Placer County has both participatory license obligations (American) and water contracts (Yuba and Bear via Pacific Gas [and] Electric water rights).	<p>For the purposes of CEQA, the action alternatives are compared to the Existing Conditions, as described in Chapter 4, section 4.2.1.1, of the DEIR/EIS.</p> <p>For the purposes of NEPA, the action alternatives evaluated in the EIR/EIS are compared to the No Action Alternative at the Late Long-Term timeframe, as defined in Chapter 3 of the EIR/EIS. (See also DEIR/EIS, chapter 4, section 4.2.1.1.)</p> <p>For the purposes of NEPA, Alternatives 4A, 2D, and 5A are evaluated in the 2015 RDEIR/SDEIS compared to the No Action Alternative at the Early Long-Term timeframe as described in Section 4.2 of the 2015 RDEIR/SDEIS.</p> <p>Additional information is proved in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternatives and Cumulative Impacts.</p> <p>For more information regarding environmental baselines please see Master Response 1.</p> <p>With respect to water rights being part of the without-project conditions analysis, the State Water Resources Control Board, not DWR, is responsible for decisions relating to water rights. DWR holds water rights approved by the State Water Resources Control Board but does not have the power or authority to issue water rights to others or to infringe upon water rights held by others. The proposed project does not</p>

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			<p>seek any new water rights nor include any regulatory actions that would affect water rights holders other than DWR, Reclamation, and SWP and CVP contractors. Importantly, all water exported by the SWP and CVP is the subject of the existing water rights of those two agencies. Exports do not come at the expense of other water rights holders. The proposed project and its alternatives analyzed in the EIR/EIS only include the use of water from existing SWP and CVP water rights. The proposed project and its alternatives do not reduce the protections for other water right holders. With respect to water users with senior water rights in Placer County, there would be no change to water deliveries under the proposed project and all action alternatives as compared to the No Action Alternative. Senior water rights deliveries to Placer County users in the Bear and American River watersheds are included in the basic hydrologic assumptions in the CALSIM II model, including water rights associated with upstream FERC permits and licenses and their associated instream flow criteria downstream of the hydropower generation facilities (including hydropower generation facilities on the American, Yuba, and Bear rivers in Placer County). For deliveries from SWP and/or CVP facilities or downstream of SWP and/or CVP reservoirs, the CALSIM II model prioritized deliveries to senior water rights holders (e.g., Placer County Water Agency) prior to meeting environmental criteria for SWP and CVP operations or deliveries to SWP and CVP water contractors. Please see Master Responses 26, Area of Origin, and 32, Water Rights Issues, for further discussion.</p> <p>The amount of water DWR can pump from the new north Delta facilities is set by Federal regulating agencies, ESA compliance and project design, and not by the water contractors. Operations for the proposed project would still be consistent with the criteria set by the FWS (2008) and NMFS (2009) BiOps and State Water Resources Control Board Water Right Decision 1641 (D-1641), subject to adjustments made pursuant to the adaptive management process as described in the 2008 and 2009 BiOps (RDEIR/SDEIS Executive Summary ES.2.2). In addition to permitting constraints on daily operations of the SWP and CVP, DWR must maintain proper performance and bypass flows across fish screens when endangered and threatened fish species are present within the north Delta facilities area. The intake fish screens drive the overall size of the intake structure on the riverbank, and have been numbered and sized to permit water to flow through the screens within a predetermined flow regime set by California Department of Fish and Wildlife and fish screen criteria set by NMFS (BDCP Appendix 5B Section 3.B.3.3). For more information regarding changes in delta exports please see Master Response 26.</p>
2572	7	<p>As currently drafted, the WOP [without-project] analysis is presented in such a way that it is not possible to understand the impacts of the project alternatives. A full range of project alternatives that would meet the revised Purpose [and] Need Statement should be investigated. This must include one or more alternatives that would reduce exports, and one alternative that would eliminate exports in favor of regional supply development (including ocean desalting), and right-sizing agricultural operations to their water availability. Exports are supported by junior water rights on the system, so it is not unreasonable to expect them to be cut back in shortage situations. In fact, long-standing appropriate water rights law would demand that. As presented, the range of alternatives is inadequate.</p>	<p>The alternatives included in the EIR/EIS represent a legally adequate reasonable range of alternatives and the scope of the analysis of alternatives fully complies with both CEQA and NEPA. Contrary to the commenter's assumption, the document does include alternatives that would reduce exports by increasing Delta outflows or holding more water in upstream reservoirs (see, e.g., Alternatives 7 and 8). No alternative would eliminated exports, however, as doing so would be totally contrary to the project objectives and purpose and need.</p> <p>The Lead Agencies carefully considered all potential alternatives that were proposed during the scoping process and during time of preparation of the EIR/EIS. In fact, as a direct result of the extensive public comments and agency input, the water facility and conveyance options proposed as part of the project changed significantly during the planning process in ways that reduce impacts in the Delta communities. Additional unique Alternatives that were proposed during review of Administrative Drafts of the BDCP and EIR/EIS were also considered and described (see Appendix 3A of the EIR/EIS and Section 4 of the RDEIR/SDEIS). Please refer to Master Response 4 (Alternatives) regarding the adequacy of the proposed project's alternatives. See also Master Response 7 (Desalination)</p> <p>It is important to note that the proposed project is not intended to serve as a state-wide solution to all of California's water problems and it is not an attempt to address directly the need for continued investment by the State and other public agencies in conservation, recycling, desalination, treatment of contaminated aquifers, or other measures to expand supply and storage. Nor is the proposed project intended to solve all</p>

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			<p>environmental challenges facing the Delta. Please see Master Response 4 and 8 for further information regarding how many of the suggested components have merit from a state-wide water policy standpoint, and some are being implemented or considered independently throughout the state, but are beyond the scope of the proposed project. Additionally, providing regulatory oversight to agribusinesses is outside the scope of the proposed project and environmental analysis.</p>
2572	8	<p>Impacts to all affected areas should be identified and analyzed. Specifically, for Placer County's interests and concerns, all potential impacts to the American River watershed and its jurisdictions, including Placer County and the cities and water agencies within Placer County, should be identified and analyzed. The RDEIR/SDEIS continues not to analyze impacts to the American River watershed, its stakeholders or its ecosystems. Because of the lack of an analysis and disclosure of potentially significant impacts, the County does not know the scope of impacts to Placer County. The County does know that its water rights, FERC [Federal Energy Regulating Commission] covenants, and fisheries requirements have not been considered in the WOP [without-project] analysis. Once impacts are identified to the Placer County region, all feasible mitigation measures must be identified and implemented. These mitigation measures need to be developed for affected watersheds and affected parties. These changes warrant a comprehensive re-write and re-circulation of the entire EIR/EIS for this Project.</p>	<p>Senior water rights deliveries to Placer County users in the Bear and American River watersheds are included in the basic hydrologic assumptions in the CALSIM II model, including water rights associated with upstream FERC permits and licenses and their associated instream flow criteria downstream of the hydropower generation facilities (including hydropower generation facilities on the American, Yuba, and Bear rivers in Placer County). For deliveries from SWP and/or CVP facilities or downstream of SWP and/or CVP reservoirs, the CALSIM II model prioritized deliveries to senior water rights holders (e.g., Placer County Water Agency) prior to meeting environmental criteria for SWP and CVP operations or deliveries to SWP and CVP water contractors. The CALSIM II model for the No Action Alternative and action alternatives includes projected changes in hydrology upstream of the Folsom Lake due to climate change which is anticipated to reduce snowfall and increase rainfall as compared to Existing Conditions. The CALSIM II model for the No Action Alternative and action alternatives includes projected changes due to increased use of senior water rights and higher priority CVP water for municipal and industrial users due to projected population growth which is consistent with water demand projections in the Urban Water Management Plans and Agricultural Water Management Plans submitted to DWR by 2012 which include approaches to meet the 20 percent per capita urban water use by 2020. The majority of the projected increased municipal and agricultural water demand north of the Delta is predicted to occur in the American and Bear rivers watersheds. The Final EIR/EIS evaluates the changes in hydrology due to climate change and increased water demand that would occur with or without the Project through the comparison of conditions under the Existing Conditions to conditions under the No Action Alternative, including changes to end of September Folsom Lake water elevations, as shown in Appendix 5A, Section C, of the EIR/EIS. The climate change and water demand assumptions would be the same in the No Action Alternative and all of the action alternatives. The changes due to implementation of the action alternatives on Folsom Lake surface water elevations and American River flows are presented in Appendix 5A, Section C, and changes in water temperatures are presented in Appendix 11D of the Final EIR/FEIS. Overall, the analyses in the Draft EIR/EIS, the RDEIR/SDEIS, and the Final EIR/EIS regarding every environmental resource area, including hydrology, water quality, biological resources, and public health, as well as substantial evidence in light of the whole record, demonstrate that the proposed project will not operate to the injury of any legal user of the water involved and will not in effect initiate a new water right.</p> <p>Please also see Master Response 32, Water Rights Issues. For additional information regarding protections for other legal users of water as well as fish and wildlife, please see Master Response 26.</p>
2572	9	<p>If, upon re-formulation of this project, the Proponents still must not transfer habitat impacts to other regions. On the American River, for example, the document demonstrates that Folsom Reservoir will reach dead pool in 10 percent of the years under the BDCP/WaterFix operating assumptions (Appendix 29C-17a Folsom Reservoir storage). This would dry and over-warm the Lower American River and imperil salmon and steelhead runs.</p>	<p>The dead pool conditions presented in the CALSIM II model results in the EIR/EIS are developed from calculated monthly average reservoir volumes. Because the model only calculates and reports SWP and CVP water operations at an average monthly basis, the model cannot simulate changes that occur on a weekly basis by water users and SWP and CVP operations. In addition, the model cannot make decisions that occur in real-time, such as drought operations during the ongoing drought. Instead the model includes average operating criteria for all dry periods, and does not reflect specific changes. The dead pool conditions occur in the No Action Alternative as compared to the Existing Conditions because the model includes changes in precipitation without making changes in water diversion patterns. The EIR/EIS analysis considers changes between the frequency of dead pool conditions under the alternatives and the No Action Alternative (both with the same climate change assumptions) to determine if the changes are adverse or beneficial. Additionally, as shown in Chapter 5, Figure 5-12, Folsom Lake End of September Storage, of the 2013 Public Draft BDCP EIR/EIS, the proposed project does not increase the frequency of "dead pool" conditions in the</p>

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			<p>Folsom Lake compared to the No Action Alternative. The increased occurrences of “dead pool” conditions in the future either with or without the proposed project are primarily attributable to sea level rise, climate change and higher demands associated with water rights (primarily in El Dorado, Placer, and Sacramento counties), and not due to proposed project. Changes to biological resources due to implementation of the action alternatives as compared to the Existing Conditions and No Action Alternative, please see Chapters 11 and 12.</p> <p>Please see Master Response 19 and Master Response 25 for more information regarding climate change and GHGs and upstream reservoir effects, respectively.</p>
2572	10	<p>The Folsom Reservoir "dead pool" issue must be addressed. It is presented in the RDEIR/SDEIS as a WOP [without-project] condition, which is flawed. Senior water rights, FERC [Federal Energy Regulating Commission] permit conditions, and American River ecosystem requirements trump Delta and export requirements under both WOP and with-project conditions. Many of the water agencies reliant on those senior water rights do not have a second supply of water, so continually running Folsom Reservoir to dead pool would threaten the health and safety of a substantial population, over 250,000 in Placer County alone. Several of the agencies in Placer County are underlied by solid bedrock, so groundwater is not available or sustainable in many parts of Placer County. Long-standing area of origin water rights protections provide for increased diversions to American River stakeholders, gradually decreasing the amount available for others on the State Water Project (SWP) and Central Valley Project (CVP) systems, including exporters. That has always been the understanding under which the CVP and SWP were constructed and licensed.</p>	<p>The dead pool issue under the No Action Alternative is associated with climate change effects on reservoir operations were included in the No Action Alternative (ELT at 2025 and LLT at 2060) and were used to compare the EIR/EIS alternatives under future conditions. This allowed the effects of each alternative to be discussed under future (assumed) climate change conditions. Folsom Lake minimum storage was assumed to be 90 taf, corresponding to an elevation of 320 feet (to allow water supply releases). This condition was simulated to occur in 3 years for the Existing Conditions (CEQA baseline) and was simulated in 6 years for the No Action Alternative (ELT) and in 9 years for the No Action Alternative (LLT). Because the CALSIM model used the same assumed reservoir operations rules for each alternative, the comparison between alternatives and the No Action Alternative result in changes related to the alternative implementation only.</p> <p>As discussed in this comment, increased water use by senior water rights holders in the American River watershed would reduce the availability of water for the SWP and CVP operations, as indicated in the EIR/EIS through the comparison of the No Action Alternative and Existing Conditions. The No Action Alternative includes an additional 177,000 acre-feet/year of water rights diversions upstream of Folsom Lake for senior water rights holders.</p> <p>Please see Master Responses 32 (Water Rights Issues), 26 (Area of Origin), and 25 (Upstream reservoir effects) for additional information.</p> <p>The EIR/EIS evaluates long-term operation of the SWP and CVP over an 82-year long hydrologic period with extended wet periods and dry/critical dry periods. The evaluation is a comparative analysis to determine the incremental differences between conditions under the action alternatives and conditions under the Existing Conditions and the No Action Alternative. The analyses were not conducted to identify specific values or to respond to short-term emergency situations, such as the recent drought. Separate engineering and environmental studies have been, and will continue to be, prepared when water quality criteria and other regulations are modified in emergencies.</p>
2572	11	<p>Other alternatives exist which result in a sustainable water supply for exporters. Agricultural interests can and should right-size their operations to the sustainable water yield available to them. In addition, urban exporters have affordable alternatives, including recycled water, conjunctive use of local storm and floodwater, and seawater desalting. Export curtailment is a reasonable alternative and must be investigated to meet the intent of CEQA and NEPA.</p>	<p>Although conservation, water storage, and demand management measures have merit from a statewide water policy standpoint, and are being implemented or considered independently through the state, they are beyond the scope of the proposed project. The proposed project is just one element of the state’s long-range strategy to meet anticipated future water needs of Californians in the face of expanding population and the expected effects of climate change. The California WaterFix is not a comprehensive, statewide water plan, but is instead aimed at addressing many complex and long-standing issues related to the operations of the SWP and CVP in the Delta, including reliability of exported supplies, and the recovery and conservation of threatened and endangered species that depend on the Delta.</p> <p>Appendix 1C, Water Demand Management, in the EIR/EIS, describes conservation, water use efficiency, and other sources of water supply including storm water drainage. While these elements are not proposed as part of the BDCP or the California WaterFix, the Lead Agencies recognize that they are important tools in managing California’s water resources.</p>

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			Please see Master Response 4 regarding the alternative analyzed in the EIR/EIS. Please also see Master Response 7 regarding desalination.
2572	12	Placer County and the incorporated cities within Placer County have approved General Plans that reflect the current conditions and projected growth that also meets the Sacramento Area Council of Governments (SACOG) Blueprint conditions as the accepted balance of growth for the region's future. Numerous legal agreements that reflect those growth plans have been executed based on the assumed accessibility of the senior water rights and capabilities to deliver water during all types of years. The BDCP/WaterFix objectives and the environmental analysis are inconsistent with these adopted plans and agreements. If the BDCP/WaterFix water conveyance facilities are built as proposed in the RDEIR/SDEIS, it is likely to be very detrimental to the quality of life, economic vitality and public health conditions of Placer County.	<p>Please note that the BDCP is no longer the preferred alternative. The preferred alternative is now Alternative 4A and no longer includes an HCP. Alternative 4A has been developed in response to public and agency input. The EIR/EIS analyzes all alternatives, including Alternative 4A.</p> <p>The CALSIM II model for the No Action Alternative and action alternatives includes projected changes due to increased use of senior water rights and higher priority CVP water for municipal and industrial users due to projected population growth which is consistent with water demand projections in the Urban Water Management Plans and Agricultural Water Management Plans submitted to DWR by 2012 which include approaches to meet the 20 percent per capita urban water use by 2020. The majority of the projected increased municipal and agricultural water demand north of the Delta is predicted to occur in the American and Bear rivers watersheds. The Urban Water Management Plans and Agricultural Water Management Plans for water users in the Placer County are consistent with the related county and city general plans referred to in the Urban Water Management Plans and Agricultural Water Management Plans.</p> <p>As explained above, the proposed project will not adversely affect senior water rights or the capability of senior water rights holders to deliver water. Please see Master Response 25 for more information regarding upstream reservoir effects. Please see Master Response 11 (Applicability of City and County General Plans) regarding general plans.</p> <p>Please also refer to Master Response 26 (Effects on Northern California/Water Rights) and Master Response 25 (Upstream Reservoir Effects).</p>
2572	13	The effect of draining Folsom Reservoir would place Placer County in the position of using more groundwater than expected where it is available in the western part of the County. The County has, for decades, relied upon the use of treated surface water for urban and suburban development, even in the western portion of the County. With the County's available water rights, the County could continue to grow by primarily relying upon surface waters. The results of more groundwater use would be to overdraft the County's basin. With the newly adopted Sustainable Ground Water Management Act (SGMA), the groundwater basin, which serves Placer County and several other County regions, new regulations are being imposed on that resource. The BDCP/WaterFix may place agencies in direct conflict with those regulations, which must be analyzed by the Project as well. In addition, other adjacent regional groundwater basins would also have to pump more groundwater, which would increase the likelihood of the potential for contaminated groundwater at the former McClellan AFB [Air Force Base] site to leak into Placer's healthy basin.	<p>Most of the action alternatives would only result in changes to SWP and CVP water rights to the extent required to obtain a change in point of diversion to add new intakes, but none will affect the rights of other legal users of water. However, the projected water demands in the No Action Alternative and all of the EIR/EIS alternatives include the assumptions that water conservation will be implemented by 2020 in accordance with State law as compared to the Existing Conditions, as described Section 30.1.3 of Chapter 30, Growth Inducement and Other Indirect Effects, of the EIR/EIS, including a reduction of per capita urban water demand by up to 20 percent.</p> <p>The dead pool conditions presented in the CALSIM II model results in the EIR/EIS are developed from calculated monthly average reservoir volumes. Because the model only calculates and reports SWP and CVP water operations at an average monthly basis, the model cannot simulate changes that occur on a weekly basis by water users and SWP and CVP operations. In addition, the model cannot make decisions that occur in real-time, such as drought operations during the ongoing drought. Instead the model includes average operating criteria for all dry periods, and does not reflect specific changes. The dead pool conditions occur in the No Action Alternative as compared to the Existing Conditions because the model includes changes in precipitation without making changes in water diversion patterns. The EIR/EIS analysis considers changes between the frequency of dead pool conditions under the alternatives and the No Action Alternative (both with the same climate change assumptions) to determine if the changes are adverse or beneficial. Additionally, as shown in Chapter 5, Figure 5-12, Folsom Lake End of September Storage, of the 2013 Public Draft BDCP EIR/EIS, the proposed project does not increase the frequency of "dead pool" conditions in the Folsom Lake compared to the No Action Alternative. The increased occurrences of "dead pool" conditions in the future either with or without the proposed project are primarily attributable to sea level rise, climate change and higher demands associated with water rights (primarily in El Dorado, Placer, and Sacramento counties), and not due to proposed project.</p> <p>The results of the CALSIM II modeling indicates that there are increases to senior water rights and CVP</p>

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			municipal and industrial water contract deliveries in Placer County under the No Action Alternative as compared to the Existing Conditions due to projected population growth which are consistent with water demand projections in the Urban Water Management Plans and Agricultural Water Management Plans. As shown in Appendix 5A, Section C, of the Final EIR/EIS, CVP municipal and industrial water contract deliveries in Placer County under Alternative 4A (Proposed Project) would be similar to deliveries under the No Action Alternative. It is understood that in areas that use both surface water and groundwater, groundwater use increases when surface water availability declines, especially during extremely dry periods. In the Sacramento Valley watersheds, the projected change in surface water supplies would be associated with climate change and increased surface water demands for population and not implementation of the action alternatives. As described in Appendix 5A, Section C, water deliveries would be similar under the action alternatives and No Action Alternative. Therefore, groundwater use changes were assumed to not be caused by the alternatives and were therefore not evaluated in detail in the EIR/EIS. Additionally, please refer to the response to comment 1556-7. Please see Master Response 25 for more information regarding upstream reservoir effects.
2572	14	Missing from the list of impacts [are] 1) the loss of the Middle Fork American River Project's (MFP) ability to generate power during times required by the California Independent System Operator, such as peak times in summer; and 2) the loss of power revenues needed to ensure operations of the MFP are stable during low water years.	As described in response to comment 1556-5, senior water rights deliveries to Placer County users in the Bear and American River watersheds upstream of Folsom Lake (including senior water rights for the existing Middle Fork American River Project) are included in the basic hydrologic assumptions in the CALSIM II model. For deliveries from SWP and/or CVP facilities or downstream of SWP and/or CVP reservoirs, the CALSIM II model prioritized deliveries to senior water rights holders (e.g., existing Middle Fork American River Project) prior to meeting environmental criteria for SWP and CVP operations or deliveries to SWP and CVP water contractors. The normal operations of the Middle Fork American River Project are not expected to be interrupted or limited by the use of additional energy for Project pumping facilities or by changes in surface water levels caused by the project. While the energy demand will be increased, the local generation facilities (including the MFP) available to the CAISO will remain unchanged. Please see Master Response 25 for more information regarding upstream reservoir effects.
2572	15	[Placer] County has coordinated the scope of its comments with other Placer County and American River watershed stakeholders. The County specifically incorporates by reference the comments submitted by the Placer County Water Agency on the BDCP/WaterFix RDEIR/SDEIS. The County also reserves the right to reference any and all comments submitted by other Placer County and American River watershed stakeholders in subsequent Placer County correspondence on this matter.	Commenter is incorporating other entities comments into the record. The specific comment does not add any information other than what will be responded to in the other comments. The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.
2573	1	[Yolo] County's review of the RDEIR indicates that the vast majority of comments included in its July 29, 2014 letter addressing the original Public Draft EIR/EIS for the BDCP (Attachment B) remain relevant, both with respect to the original project and its alternatives as well as the new alternatives -- such as Alternative 4A, the California WaterFix -- included in the RDEIR. Accordingly, the County reiterates its prior comments on the Public Draft EIR/EIS in their entirety. The County also reserves the right to provide additional comments on Alternative 4A (or other proposed alternatives) and the RDEIR prior to project approval.	Consistent with the requirements of the California Environmental Quality Act (CEQA Guidelines §15088) and the National Environmental Policy Act (Council on Environmental Quality § 1503.4) and policies held by all Lead Agencies governing the implementation of CEQA and NEPA, all comments received on the DEIR/EIS and RDEIR/SDEIS are included with the Final EIR/EIS. Please see Master Responses 42 regarding treatment of public comments.
2573	2	Misuse of programmatic environmental review: The RDEIR generally makes few substantive changes to the prior text analyzing Conservation Measures 2-22 (now, Conservation Measures 2-21) at a programmatic level, deferring a detailed discussion of project-level details and related effects to future environmental documents. This is unnecessary in some instances -- particularly in the context of floodplain habitat restoration in the Yolo Bypass -- and inconsistent with applicable legal requirements of the California Environmental Quality Act ("CEQA") and the National Environmental Policy Act ("NEPA").	The description of Alternative 4A, 2D and 5A is provided in Chapter 3, Description of Alternatives. Please refer to Master Response 2 which address project-level versus program level analyses approaches. Please also refer to Master Response 5 for information with regard to the BDCP or Alternative 4, as well as a discussion of the current status of the draft BDCP Effects Analysis.

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2573	3	<p>Reliance on an unclear, outdated, and flawed "baseline" for evaluating impacts:</p> <p>Released in 2015, the RDEIR generally appears to maintain a highly dated baseline tied to the February 13, 2009 publication of a "Notice of Preparation" of a CEQA/NEPA document for the BDCP. While there are exceptions to this approach (including the supplemental modeling and information included in Appendices B-F), those exceptions appear to be grounded in the need for better information to support state and federal permit applications. No comprehensive effort appears to have been made to shore up key deficiencies in the data and information supporting the environmental effects analysis under CEQA and NEPA, as would be reasonable -- and [Yolo] County contends, is legally required -- given the use of an outdated baseline.</p>	<p>The CEQA baseline for assessing significance of impacts of the project is the environmental setting, or existing conditions, at the time a Notice of Preparation (NOP) is issued (State CEQA Guidelines Section 15125[a]). The Existing Conditions assumptions for the EIR/EIS include facilities and ongoing programs that existed as of February 13, 2009 (publication date of the most recent NOP and Notice of Intent [NOI] to prepare the EIS/EIR), that could affect or could be affected by implementation of the project alternatives. The subsequent RDEIR/SDEIS maintains the same Existing Conditions assumption with updated assumptions revised to describe current and reasonably foreseeable future projects that have become more defined or developed since 2011. Furthermore, new data and/or modeling have been completed for numerous resources within the RDEIR/SDEIS (see ES.3 for summary of substantive revisions). For more information regarding environmental baselines please see Master Response 1.</p>
2573	4	<p>Lack of consistency with the Delta Reform Act (and with respect to the WaterFix, the Delta Plan): As the Public Draft EIR/EIS and RDEIR make clear, the Delta and its communities will be greatly affected by implementation of the BDCP or WaterFix. It remains difficult to determine how the implementation of either program could proceed in a manner consistent with the Delta Reform Act's mandate that the "coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, an agricultural values of the Delta as an evolving place." (Water Code [Section] 85054.) The same can be said for consistency with the Delta Plan, addressed in cursory fashion in Appendix G to the RDEIR.</p>	<p>DWR recognizes and intends to fully comply with its obligations under the 2009 Delta Reform Act. Appendix 3J of the RDEIR/SDEIS, Compatibility with the Delta Plan, discusses how Alternative 4A would demonstrate consistency with the Delta Plan. Appendix 3J provides a description of the process that would apply, if Alternative 4A is selected, in order to demonstrate the proposed project's consistency with the Delta Reform Act's co-equal goals, including compliance with the (existing or modified) Delta Flow Objectives (currently, 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay Delta WQCP) (State Water Resources Control Board 2006).</p> <p>See Master Response 31, Compliance with Applicable Delta Reform Act Requirements.</p> <p>See Master Response 24, Alternative 4A (Proposed Project) Compatibility with Delta Plan's Consideration of Delta as a Place.</p>
2573	5	<p>Inclusion of Environmentally Destructive "West Alignment" Alternatives: Though unlikely to ever become reality, the various "west alignment" alternatives in the Public Draft EIR/EIS remain in the RDEIR even though their environmental impacts are far greater than the preferred alternative (Alternative 4/4A) and many other alternatives. These alternatives should be deleted, as they have no environmental, fiscal, or public policy merit and thus cannot reasonably receive further consideration.</p>	<p>The broad range of alternatives included in the EIR/EIS, with varying degrees of impacts, also reflects a type of "bookend" analysis. For example, under the "bookend" approach utilized by the Lead Agencies for the operational alternatives, the EIR/EIS evaluated alternatives that ranged from higher export deliveries at one end, and reduced exports and higher outflows to protect fish species at the lower end. (See Draft EIR/EIS Appendix 3A, Section 3A.9 and Chapter 3, Section 3.2.1.4.) By analyzing various alternatives covering the entire spectrum of impacts, the alternatives included in the Draft EIR/EIS represent an appropriate range of alternatives and will permit the Lead Agencies to make a reasoned choice among alternatives. Thus, the range of alternatives included in the EIR/EIS fully complies with CEQA and NEPA. This approach creates what in common practice are known as analytical "bookends," referring to a range of decision-making options (alternatives) consisting of a continuum of choices. In general, alternatives with comparatively low levels of environmental impact occupy one end of the continuum or range, while alternatives with comparatively higher levels of impact occupy the other end, though in practice even alternatives with minimal impacts in one environmental category might have relatively severe impacts in other categories, while the alternatives ostensibly on the high impact end of the continuum might be comparatively benign with respect to certain environmental categories. Where specific policy options within the continuum consist of reasonable mid-points between the low bookend and the high bookend, agency decision makers retain discretion to ultimately choose to approve an alternative anywhere within the continuum, provided that the information developed for the various bookends and the mid-points suffices to address the actual projected impacts of the precise option chosen. Please refer to Master Response 4 (Alternatives) for additional information.</p>
2573	6	<p>Improper characterization of community noise impacts: [Yolo] County's July 29, 2014 comment letter incorporated a memorandum from Ascent Environmental on the noise analysis in the Public Draft EIR/EIS. The County acknowledges some minor changes to the noise analysis in the RDEIR, but many of the issues raised in that memorandum and in other County comments remain of concern. Noise will be a major issue in Clarksburg (and similar areas in other counties affected by construction impacts) and it should receive additional</p>	<p>As stated in Chapter 23, construction noise impacts are considered to be "Significant and unavoidable". This is based on an analysis that considers worst-case conditions. For example, six pieces of construction equipment operating simultaneously and continuously in one location. These conditions would not necessarily occur on a routine basis. Although alternative haul routes for truck traffic may be an effective measure in some cases, significant impacts are still likely after mitigation.</p>

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		consideration and analysis.	<p>From Appendix 3B, Section 3B.5.5: DWR and contractors hired to construct any conveyance components of the project will implement a site-specific noise abatement plan to avoid or reduce potential construction-, maintenance-, and operation-related noise impacts. This section also includes environmental commitments to reduce noise levels where exceedances are anticipated to occur.</p> <p>Regarding the community of Clarksburg, the footprint of Intake #2 is located nearest to the Delta High, Clarksburg Middle, and Delta Elementary Charter schools in Clarksburg. Worst-case daytime noise levels during pile driving are indicated in the EIR/EIS. Based on the current footprint, the nearest pile driving locations for Intake #2 are located approximately 5,000 feet from the nearest school (Clarksburg Middle School). As indicated in Table 23-17, at a distance of 5,000 feet, worst-case noise levels during periods of pile driving are predicted to be about 50 dBA Leq (1hr). This assumes an average 100% utilization of pile drivers during construction, in combination with other heavy equipment (mostly heavy trucks). Assuming a conservative outdoor-to-indoor attenuation rate of 20 dB for structures with closed windows, worst-case interior levels would be about 30 dBA. With windows open, the level would be about 40 dBA.</p> <p>The EPA, in its guidance about noise levels and public health states the following: “The principal consideration in the education environment is the prevention of interference with activities, particularly speech communication. An indoor noise level not exceeding Leq(24) of 45 dB is identified as adequate to facilitate thought and communication. Since teaching is occasionally conducted outside the classroom, an outdoor Leq(24) of 55 dB is identified as the maximum level to prevent activity interference.” (EPA 1974)</p> <p>Given this standard, noise levels during periods of pile driving are not anticipated to interfere with indoor or outdoor classroom activities.</p> <p>Please note that the discussion provided above is for site-specific information only, and is not included in the Final EIR/EIS. A site-specific analysis was conducted to determine noise levels at schools within the community of Clarksburg based on specifications provided by DWR, to respond to the comment in greater detail. The impact analysis in the Final EIR/EIS conservatively assumes worst-case conditions apply along the entire alignment and that construction could occur at any location within the construction footprint. Based on these worst-case assumptions, significant and unavoidable impacts may occur.</p>
2573	7	<p>Incomplete analyses of community and agricultural groundwater impacts: [Yolo] County suggested some practical (indeed, relatively straightforward) ways to improve the analysis of groundwater impacts in its July 29, 2014 letter. These suggestions appear to have been ignored in the RDEIR, which relies on the same faulty assumptions -- chiefly, the assumption that groundwater impacts will spread uniformly outward from dewatering sites -- that compromised the analysis in the Public Draft EIR/EIS.</p>	<p>As described in the response to comments presented in the commenter’s July 29, 2014 letter, the regional groundwater modeling presented in the EIR/EIS is used to compare alternatives. In the Final EIR/EIS the description of the proposed project, Alternative 4A, was modified to include slurry wall installation to protect local groundwater conditions during construction including at intake locations, tunnel shafts, and forebays. The effects on groundwater at locations with slurry wall installations would not result in significant effects as compared to Existing Conditions. During the design phase, DWR would conduct site-specific analysis to determine the extent of the potential conflicts related to conveyance facility construction, including locations of water supply and drainage facilities. DWR would consult with local reclamation districts and land owners to ensure that construction activities would not conflict with existing wells and other facilities. It is possible that some impacts may result in effects depending upon specific information that would be collected during design and construction phase. Mitigation measures have been identified in the EIR/EIS to reduce the impacts to less than significant as compared to Existing Conditions. Mitigation Measures AG-1, GW-1, GW-5, and WQ-11 will reduce the severity of significant impacts in agricultural areas by implementing activities such as siting project footprints to encourage continued agricultural production and land uses; monitoring changes in groundwater levels during construction; monitoring seepage effects; relocating or replacing infrastructure in support of continued agricultural and other land use activities; identifying, evaluating, developing, and implementing feasible phased actions to reduce EC levels; engaging counties, owners/operators, and other stakeholders in developing optional approaches.</p> <p>For more information regarding groundwater impacts and their associated mitigation of the proposed</p>

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			project please see Section 4.3.3 Groundwater of Section 4 in the RDEIR/SDIES. Updated information on groundwater effects of water conveyance alternatives can be found in Appendix A Chapter 7 of the RDEIR/SDIES.
2573	8	<p>Inadequate local traffic and road impact analyses and mitigation measures: As with noise impacts, the Public Draft EIR/EIS and the RDEIR each make clear that West Sacramento and Clarksburg will be heavily affected by construction traffic for many years. These impacts are severe in some locations, with road segments potentially operating at "unacceptable" levels for 10+ hours daily during the 14-year construction timeframe of the new conveyance facilities. Despite this, the RDEIR retains the same mitigation measures that routinely appear in environmental documents for minor projects: a commitment to pay only a "fair share" toward road repairs and improvements, and only if affected communities can contribute any additional amounts needed for their own "share" of projects that would be altogether unnecessary but for the BDCP/WaterFix.</p>	<p>The lead agencies acknowledge that truck traffic may degrade the physical condition of the roadway segments as discussed in Chapter 19, Transportation, and page 19-13 of this Final EIR/EIS. The lead agencies are committed to minimizing and remedying such damage. The lead agencies also acknowledge your concerns about transportation impacts on Delta and other local roads and agree with the desire to avoid further deterioration of these roads. Table 19-10 in Chapter 19, identifies roadway segments that are deficient. Mitigation Measures TRANS-2a, b, and c seek to eliminate or reduce traffic on those segments or to improve the condition of those pavement sections if use cannot be avoided. However, the lead agencies realize that this may not be feasible for all segments. Mitigation Measure TRANS-2c also includes remediation of roads to their condition prior to project construction, or better. Mitigation Measure TRANS-2c also includes coordination with affected agencies to accomplish this objective.</p> <p>The lead agencies seek to provide mitigation measures and also realistically discuss their implementation and effectiveness. Mitigation Measure TRANS-1c acknowledges the fact that implementation of TRANS-1c is dependent on agreement among many affected agencies, and thus implementation is not guaranteed.</p>
2573	9	[Yolo] County's comments on the RDEIR necessarily conclude in the same manner as its comments on the Public Draft EIR/EIS more than a year ago: with a request for recirculation of the document after its many deficiencies are corrected.	The lead agencies believe that the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS are complete in their evaluation of impacts (using the best available science and modeling), direct and cumulative, that project description is complete and satisfies the requirements of NEPA, and that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies believe that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS. Please see Master Response 46 for further information regarding recirculation.
2573	10	[ATT1: Comments of Yolo County. Attachment 1. October 30, 2015. 2015 California WaterFix RDEIR/SDEIS: Terrestrial Species.]	The comment describes an attachment to the comment letter. The attachment does not raise any additional issues related to the environmental analysis in the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS that are not already addressed in the comment referencing the attachment or the Final EIR/EIS.
2573	11	<p>[Chapter-Page]: 4.3.8-12</p> <p>[Issue Area]: Tidal freshwater emergent wetland impacts</p> <p>Please provide a map to show the general area of tidal freshwater emergent wetland community in the Yolo Bypass. Excerpt from plan: "During the construction phase of Alternative 4A, the project would affect the tidal freshwater emergent wetland natural community through water conveyance facilities construction losses (3 acres permanent and 15 acres temporary). These losses would occur in the central Delta from construction of barge unloading facilities and transmission lines on the fringes of Venice, Bacon and Woodward Islands, and in various locations within the Yolo Bypass and the tidal restoration ROAs [Restoration Opportunity Areas]. An undetermined acreage would also be affected through channel margin habitat creation (Environmental Commitment 6) along the major Delta waterways. The construction losses of this special-status natural community would represent an adverse effect if they were not offset by avoidance and minimization measures and restoration actions associated with Alternative 4A environmental commitments. Loss of tidal freshwater emergent wetland natural community would be considered both a loss in acreage of a sensitive natural community and a loss of wetland as defined by Section 404 of the CWA [Clean Water Act]. However, the creation of 59 acres of tidal wetland as part of Environmental Commitment during the construction phase of Alternative 4A would more</p>	The locations of the tidal freshwater emergent areas and other habitats within the Yolo Bypass under the No Action Alternative, proposed project (Alternative 4A), and Alternatives 2D and 5A will be determined under the ongoing engineering project and EIS/EIR being completed by DWR and Reclamation. It is anticipated that the ongoing DWR and Reclamation project for the Yolo Bypass will be completed prior to completion of the design phase for the California WaterFix. Therefore, during design phase, additional mitigation restoration that would occur in the Yolo Bypass due to implementation of the California WaterFix would be coordinated with other parties involved in operations of the Yolo Bypass, including Yolo County, USACE, and Central Valley Flood Protection Board.

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		than offset this loss, avoiding any adverse effect. Typical project-level mitigation ratios (1:1 for restoration) would indicate that 18 acres of restoration would be needed to offset (i.e., mitigate) the 18 acres of loss (the total permanent and temporary near-term effects listed in Table 12- 4A-2)." Yolo County reserves the right to offer comments on this impact once the location of wetland impacts in the Bypass are disclosed. Presumably, if an acreage estimate is available, some efforts have been made to identify the location of the affected acreage.	
2573	12	<p>[Chapter-Page]: 4.3.8-362</p> <p>[Issue Area]: Overlap with Habitat Conservation Plans</p> <p>More discussion is needed with the Yolo Habitat Conservancy, lead agency for the Yolo HCP/NCCP, to ensure consistency with the preferred alternative as described: "The environmental commitments associated with Alternative 4A would remove relatively small acreages of primarily cultivated land in all six of the overlapping plan areas (Yolo, Solano, South 11 Sacramento, East Contra Costa, East Alameda and San Joaquin County HCP/NCCPs). The consistency analysis below indicates that the degree to which the competition for conservation lands would impact the conservation goals of other plans is limited. Alternative 4A would have much less risk from competition for conservation lands. In most cases, because of the flexibility for acquisition targets incorporated into Alternative 4A and other plans, the potential conflict would be manageable, and significant conflicts with the implementation of overlapping plans could be avoided. In certain cases, especially pertaining to similar restoration objectives perceived conflicts may also represent opportunities for collaboration to jointly achieve similar conservation goals. Because implementing Alternative 4A would not result in a conflict with the provisions of an adopted HCP, NCCP or other approved local, regional or state habitat conservation plan, there would be a less-than-significant impact." This is simply far too conclusory to constitute a meaningful analysis of potential conflicts, particularly given the need for habitat conservation under Alternative 4A within the Plan Area (Yolo County) for the Yolo HCP/NCCP.</p>	<p>The Lead Agencies acknowledge the importance of continued communication and coordination with the agencies responsible for implementing conservation plans in the six overlapping plan areas.</p> <p>Please see Section 12.3.6.1, Effects on Other Conservation Plans, in the Final EIR/EIS for a detailed analysis of how the alternatives affect surrounding habitat conservation plans and natural community conservation plans. Additionally, please see Master Response 22 for further information related to environmental commitments.</p>
2573	13	<p>[Chapter-Page]: 4.3.8-25</p> <p>[Issue Area]: Nontidal perennial aquatic community impacts</p> <p>Yolo County would appreciate more information about the proposed Yolo Bypass restoration for nontidal perennial aquatic community impacts in the RDEIR. Except from RDEIR: "Implementation of Alternative 4A would result in relatively minor (6%) losses of nontidal perennial aquatic community in the study area. These losses (59 acres of permanent and 9 acres of temporary loss) would be largely associated with construction of the water conveyance facilities. By the end of project construction, a total of 832 acres of nontidal marsh would be restored. The restoration would occur over a wide region of the study area, including within the Cosumnes/Mokelumne, Yolo Bypass, South Delta and East Delta ROAs (see Figure 12-1 in the Draft EIR/EIS)." Yolo County reserves the right to offer comments on this impact once the location of wetland impacts in the Bypass are disclosed.</p>	<p>Under Alternative 4A, there are currently no specific proposed locations for nontidal marsh restoration. The text cited by the commenter is just a list of general locations where restoration could occur. Restoration projects will be subject to their own environmental review at which point Yolo County will be able provide specific comments on any sites that are selected within the Yolo Basin or other areas.</p>
2573	14	<p>[Chapter-Page]: 4.3.8-100</p> <p>[Issue Area]: Methylmercury</p> <p>Yolo County finds it interesting that the RDEIR/SDEIS does not propose giant garter snake</p>	<p>Please refer to Master Response 14 for a discussion of water quality impacts including effects of mercury.</p>

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		<p>habitat restoration in the Yolo Bypass as a result of the high methylmercury concentrations, since the Yolo HCP/NCCP is prioritizing habitat conservation in the Bypass with the encouragement of the USFWS and the CDFW. Excerpt from RDEIR: "Yolo Basin is where some of the highest concentrations of mercury and methylmercury have been documented (Foe et al. 2008); however, there would be no construction or restoration in this area. Effects from exposure to methylmercury may include decreased predator avoidance, reduced success in prey capture, difficulty in shedding, and reduced ability to move between shelter and foraging or thermoregulation areas (Wylie et al. 2009). The 20 potential mobilization or creation of methylmercury within the study area varies with site-specific 21 conditions and would need to be assessed at the project level."</p>	
2573	15	<p>[Chapter-Page]: 4.3.8-328</p> <p>[Issue Area]: Tidal freshwater emergent wetland impacts</p> <p>Table 12-4A-65 refers to habitat loss from Yolo Bypass fisheries enhancements. Is this still a component of Alternative 4A? Such enhancements are clearly within the scope of Alternative 4 but the RDEIR does not clearly explain that the enhancements are also part of Alternative 4A (and in fact, appears to say just the opposite in numerous places). Excerpt from RDEIR: "Table 12-4A-65. Tidal freshwater emergent wetland -- Habitat loss from construction of water conveyance facilities, tidal habitat restoration, Yolo Bypass fisheries enhancements, and floodplain restoration."</p>	<p>The reference in Table 12-4A-65 to Yolo Bypass fisheries enhancement is in error. The proposed action (Alternative 4A) does not include the BDCP or the Yolo Bypass Fisheries Enhancement conservation measure (CM2). This error will be corrected in the Final EIR/EIS.</p>
2573	15	<p>[ATT15: Letter re: Comments on October 2012 Draft Discussion Paper on Agricultural Mitigation, dated January 24, 2013, from County of Yolo to Katherine A. Spanos, Senior Staff Counsel, Department of Water Resources.]</p>	<p>This comment describes an attachment to the comment letter, comments on an October 2012 Draft Discussion Paper on Agricultural Mitigation. The comments, as well as input from other interested stakeholders, were used to develop a list of Agricultural and Land Stewardship Strategies and a Framework for Planning, which provides some suggestions for how to incorporate the Strategies into the project planning process. The Framework and Strategies can help inform agricultural and land stewardship activities, and encourage the voluntary exploration of mutually beneficial solutions.</p>
2573	16	<p>[Chapter-Page]: 4.3.8-354</p> <p>[Issue Area]: Transmission lines and wildlife corridors</p> <p>Figure 12-2 of the Draft EIR/EIS shows that the Yolo Bypass-Stone Lake ECA is an "Essential Connectivity Area." In addition, this area is an important area for sandhill cranes and other migratory waterfowl. Although the RDEIR says the following action will have a less-than significant effect on wildlife corridors, Yolo County suggests mortality monitoring for an appropriate number of years to ensure this is the case. Excerpt from RDEIR: "The addition of temporary transmission lines within the Stone Lake-Yolo Bypass ECA, which would be in place for approximately 7 years, could adversely affect birds during periods of low visibility. . ."</p> <p>Another excerpt: "Greater sandhill cranes are susceptible to collision with power lines and other structures during periods of inclement weather and low visibility (Avian Power Line Interaction Committee 1994, Brown and Drewien 1995, Manville 2005). There are extensive existing transmission and distribution lines in the sandhill crane winter use area. These include a network of distribution lines that are between 11- and 22-kV. In addition, there are two 115-kV lines that cross the study area, one that overlaps with the greater sandhill crane winter use area between Antioch and I-5 east of Hood, and one that crosses the</p>	<p>Please refer to Master Response 17.</p>

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		northern tip of the crane winter use area north of Clarksburg."	
2573	17	<p>[Chapter-Page]: 4.3.8-170</p> <p>[Issue Area]: Swainson's hawk patch size</p> <p>The RDEIR proposes a Swainson's hawk minimum patch size of 40 acres. The Yolo HCP/NCCP proposes a minimum patch size of 80 acres. To be consistent with the Yolo HCP/NCCP, the Resources Restoration and Performance Principles SH1 should contain a minimum patch size of 80 acres for Swainson's hawk.</p>	<p>The Proposed Action (Alternative 4A) is obtaining take authorization for impacts to Swainson's hawk and its habitat through a Section 2081(b) incidental take permit. This permit will satisfy the California Endangered Species Act. The regulatory standard for this permit is to "fully mitigate" the impacts to the covered species. This is a lower standard than what is required under the Natural Community Conservation Planning Act (NCCP Act), which is what the Yolo HCP/NCCP must comply with. The NCCP Act requires that applicants "provide for the conservation and management of the covered species in the plan area". This standard means that NCCPs must exceed mitigation and contribute to species recovery in the plan area. This explains the difference in conservation proposed between California WaterFix (and any other project mitigation) and the Yolo HCP/NCCP. The California Department of Fish and Wildlife has determined that the 40-acre minimum patch size for Swainson's hawk will meet the "fully mitigate" standard consistent with a 2081(b) incidental take permit. In addition, the 40-acre minimum patch size will also reduce the impacts of the Proposed Action on Swainson's hawk to a level below significance to satisfy California Environmental Quality Act (CEQA) standards, when combined with other mitigation for the species that is provided by the project.</p>
2573	18	<p>[Chapter-Page]: 4.3.8-174</p> <p>[Issue Area]: Swainson's hawk foraging habitat mitigation</p> <p>Yolo County would appreciate more information about the potential location of the over 6,000 acres of Swainson's hawk mitigation, especially given that Yolo County has Swainson's hawk habitat in the Clarksburg area that meets the criteria of both high-value foraging habitat and 1 foot above sea level. Excerpt from RDEIR: "Project proponents would commit to conserving 1 acre of Swainson's hawk foraging habitat for every acre of lost foraging habitat (Resource Restoration and Performance Principle SH1). These acres of cultivated lands and grasslands would be located above 1 foot above sea level, and at least 50% would be in very high-value production (Resource Restoration and Performance Principle SH2)." This information is particularly relevant to a comprehensive analysis of potential conflicts with the Yolo HCP/NCCP and its acquisition objectives.</p>	<p>As noted on page 12-145 of the Final EIR/EIS, the locations of conservation activities were not identified because these actions would be implemented in areas where there are willing sellers, which have not yet been identified and thus the analysis for these actions, as noted on page 12-145 was done at a programmatic level. As stated on page 12-145 of the Final EIR/EIS, conservation activities would be implemented concurrent with the construction of water conveyance facilities.</p>
2573	19	<p>[Chapter-Page]: 12-62 (Appendix A)</p> <p>[Issue Area]: Methylmercury</p> <p>Yolo County notes that the RDEIR includes a more aggressive approach to evaluating methylmercury impacts. According to the Suisun Marsh Plan EIR/EIS (Bureau of Reclamation et al. 2010, pg. 5.2-18), marsh creation may generate less methylmercury than is currently being generated by managed wetlands.</p>	<p>Please refer to Master Response 14 regarding mercury.</p>
2573	20	<p>Chapter-Page]: 12-247 (Appendix A)</p> <p>[Issue Area]: Methylmercury</p> <p>The RDEIR should clearly describe that no conservation is planned for the Yolo Bypass. This does not need to be part of the methylmercury discussion, but should be included somewhere for the sake of clarity.</p>	<p>Chapter 3, Description of Alternatives, in the Final EIR/EIS, describes that Yolo Bypass improvements are not a part of the non-HCP alternatives.</p>
2573	21	<p>[Chapter-Page]: 15-12 (Appendix A)</p> <p>[Issue Area]: Clarksburg Boat Launch</p>	<p>As described under Mitigation Measure REC-2, which would be implemented to provide alternative bank fishing sites, the project proponents will ensure adequate signage will be placed at the informal sites that would be directly affected by construction of the intakes, directing anglers to the formal sites. Upgrading the</p>

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		Yolo County requests additional information about the extent of geotechnical exploration that would occur along the tunnel corridor to the east of Clarksburg Boat Launch for up to 2.5 years, but appreciates the mitigation measure to help enhance the fishing access site. Maintenance funding would be appreciated as well during this time, as well as funding to educate users about the availability of access.	existing fishing access sites will be completed prior to beginning construction of the intakes. Please refer to AMM 28 and Environmental Commitment 3B.2.1 in Appendix 3B for more information regarding geotechnical exploration.
2573	22	[Chapter-Page]: 4.3.11-2 [Issue Area]: Clarksburg Boat Launch The Clarksburg Boat Launch is on the west bank of the Sacramento River across the river from the site of Intake 3. Although access to the boat launch would be maintained during the construction period, noise generated during construction and geotechnical testing could adversely affect use of the public access areas near the boat launch for fishing or other activities. This impact should be considered in a more detailed fashion in the EIR/EIS, including the potential for additional use of other recreational facilities in areas unaffected (or less affected) by BDCP or WaterFix activities.	Please refer to the following mitigation measures listed in Chapter 15, Recreation: Mitigation Measure REC-2: Provide Alternative Bank Fishing Access Sites Mitigation Measure AQUA-1a: Minimize the Use of Impact Pile Driving to Address Effects of Pile Driving and Other Construction-Related Underwater Noise Mitigation Measure AQUA-1b: Monitor Underwater Noise, and if Necessary, Use an Attenuation Device to Reduce Effects of Pile Driving and Other Construction-Related Underwater Noise Mitigation Measure NOI-1a: Employ Noise-Reducing Construction Practices during Construction Mitigation Measure NOI-1b: Prior to Construction, Initiate a Complaint/Response Tracking Program Environmental commitments that will reduce construction-related impacts on recreation include a noise abatement plan, an underwater sound control and abatement plan, and consultation with CDFW to expand recreational opportunities (refer to Appendix 3B, Environmental Commitments, AMMs, and CMs).
2573	23	[Chapter-Page]: 16-14 and 16-50 (Appendix A) [Issue Area]: Yolo Bypass Yolo County appreciates the removal of the \$1.5 million estimate for revenue losses from Fremont Weir flooding and the more accurate description of potential losses based on timing and duration of inundation.	The commenter appreciates the requested revision in the EIR/EIS document.
2573	24	[Chapter-Page]: 16-41 (Appendix A) and 4.3.12-4 [Issue Area]: Mitigation measures for effects to community character Yolo County appreciates the inclusion of mitigation measures for effects on the community character of the Delta, but questions their potential efficacy. Specific comments on individual measures are included in the County's prior comments on the Draft EIR/EIS.	Consistent with the requirements of the California Environmental Quality Act (CEQA Guidelines §15088) and the National Environmental Policy Act (Council on Environmental Quality § 1503.4) and policies held by all Lead Agencies governing the implementation of CEQA and NEPA, all comments received on the DEIR/EIS and RDEIR/SDEIS are included with the Final EIR/EIS. Please also see Master Response 22 for further information regarding mitigation measures.
2573	25	[Chapter-Page]: 4.3.12-3 [Issue Area]: Clarksburg impacts The RDEIR is unclear about the location of facilities near Clarksburg. On this page, it states: "This could result in the closure of agriculture-dependent businesses or those catering to agricultural workers, particularly in areas where conversion of agricultural land would be most concentrated, including near the intakes in the vicinity of Clarksburg and Hood and the expanded Clifton Court Forebay east of Byron." Does this refer to facilities on the east side of the river, across from Clarksburg? The text should be revised for clarity on this point.	Under Alternative 4A, water conveyance facilities would be constructed and maintained identically to those proposed and analyzed under Alternative 4 (including the modifications described in Section 3, Conveyance Facility Modifications to Alternative 4, of the RDEIR/SDEIS). Water would be diverted from the Sacramento River through three fish-screened intakes on the east bank of the Sacramento River between Clarksburg and Courtland (Intakes 2, 3, and 5). Mapbook Figure M14-7 shows all of the construction features (including temporary work areas) associated with the proposed water conveyance facility alignment for Alternative 4A, along with Important Farmland.
2573	26	[Chapter-Page]: 4.3.12-3 and -4	Chapter 16, Socioeconomics, relies on mitigation measures from other resource areas, including those

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		<p>[Issue Area]: Clarksburg impacts</p> <p>Yolo County remains seriously concerned about the impacts -- including socioeconomic effects -- on the Clarksburg community from noise, traffic, and other construction impacts associated with Alternative 4A and related proposals (including Alternative 4) in the RDEIR/EIS. For instance, the text states: "Construction activities associated with water conveyance facilities would be anticipated to result in changes to the rural qualities of these communities during the construction period (characterized by predominantly agricultural land uses, relatively low population densities, and low levels of associated noise and vehicular traffic), particularly for those communities in proximity to water conveyance structures, including Clarksburg, Hood, and Walnut Grove. Effects associated with construction activities could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities).</p> <p>Under Alternative 4A, several gathering places that lie in the vicinity of construction areas could be indirectly affected by noise and traffic associated with construction activities, including Delta High School, the Clarksburg Library, Clarksburg Community Church, Resurrection Life Community Church, Citizen Land Alliance, Discovery Bay Chamber of Commerce. . . ." Despite this, the analysis concludes that such effects will be "reduced" by environmental commitments and mitigation measures. There is no supporting explanation for this conclusion. Particularly in light of the duration of the effects mentioned in the text, this conclusion lacks credibility in the absence of detailed supporting rationale.</p>	<p>related to mitigating impacts on traffic, aesthetics, and recreation, which would decrease the impacts felt from local residents and visitors. Changes in community character are discussed in Impact ECON-3, which would result in adverse and beneficial impacts. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community through additional regional employment and income, adverse social effects could also arise as a result of declining economic stability in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. As described in Section 16.1, the description of impacts in this chapter is both quantitative and qualitative, and satisfies NEPA and CEQA requirements. Please also see Master Response 24 for information on the Delta As a Place.</p> <p>Also please see Chapter 23 in the EIR/EIS for more information about noise impacts and mitigation.</p>
2573	27	<p>[Chapter-Page]: Appendix A, Chapter 19, page 19-112</p> <p>[Issue Area]: Long-term construction vehicle traffic impacts.</p> <p>Table 19-25 identifies a significant increase in vehicle traffic on State Route 84 from the West Sacramento city limits to Courtland Road for Alternative 4A. The current volume of traffic on this roadway is identified as 40 to 169 vehicles per hour with the peak volumes expecting to increase by 25 vehicles per hour with cumulative growth in the region. However, with implementation of the preferred project, the vehicle traffic is expected to range from 666 to 814 vehicles per hour. This hourly volume of traffic is expected to occur over 13 hours per day, or between 6:00 am and 7:00 pm. At its peak, this represents one vehicle every 4.4 seconds on a road that typically experiences less than one vehicle per minute. At its average, this represents 9,620 vehicles on this roadway per day, which is an increase in typical traffic volumes of over 600 percent. Based on the identified threshold of 200 vehicles per hour for this roadway, this represents a staggering increase in hourly traffic volumes on this rural highway.</p> <p>This increase will dramatically alter access and travel times for residences and businesses within the region. Emergency vehicle access will be severely restricted, which could be life threatening for residents experiencing health emergencies or during periods when emergency evacuation is necessary (e.g., during flood events). It will also reduce the ability of farmers in the region to deliver their goods to market during peak harvest periods and will disrupt school bus pickup schedules. This level of community disruption will clearly be inconsistent with the coequal goals, which are required by Water Code Section 85054 to be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place. The Final EIR/EIS needs to</p>	<p>It should be noted that the overall traffic volumes would be lower during the hours between 7 PM and 6 AM, but the lead agencies acknowledge that construction truck traffic may impact the local community (residents, schools, and farmers). Therefore, Mitigation Measure TRANS-2c includes coordination with affected agencies to address impacts of construction truck traffic to local farmers before 6 AM in the morning and after 7 PM in the evening.</p> <p>Prior to construction, the lead agencies will be responsible for project management and may contract with one or more construction management firms to assist in ensuring that construction contractors' crews and schedules are coordinated and that the plans and specifications are being followed. The lead agencies will also ensure development of site-specific construction traffic management plans (TMPs) that address the specific steps to be taken before, during, and after construction to minimize traffic impacts, including the mitigation measures and environmental commitments identified in this EIR/EIS. This will include potential expansion of the study area identified in this EIR/EIS.</p> <p>The lead agencies acknowledge the importance of Delta roads for agricultural access and local residents' transportation. Mitigation Measure TRANS-1c also seeks to work with affected jurisdictions to enhance capacity of congested roadway segments where construction traffic will substantially affect transportation facilities.</p> <p>The lead agencies acknowledge the importance of Delta roads for the delivery of emergency services. Draft EIR Chapter 19, Transportation, page 19-36 identifies interference with emergency services as an effect. Impact TRANS-3 further discusses this problem and its effects. Mitigation Measure TRANS-1a includes provisions to ensure that construction vehicles allow continual access for emergency vehicles at the time of an emergency. However, some significant impacts may be unavoidable as discussed on page 19-122 of the Recirculated EIR Chapter 19, Transportation. The proponents are committed to minimizing and remedying</p>

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		fully address how the anticipated construction traffic impacts will affect the long-term cultural and economic viability of local Delta communities particularly as they relate to the legislative mandate to protect and enhance the Delta as an evolving place.	the impacts of construction truck traffic. Please also see Master Response 24 for information on the Delta As a Place.
2573	28	[Chapter-Page]: Appendix A, Chapter 19, page 19-106 [Issue Area]: Long-term construction vehicle traffic impacts. The description of the project's construction traffic impacts in the 2013 Public Draft EIR/EIS has been revised in the Recirculated Draft EIR/EIS to indicate that the impacts are temporary (last paragraph, page 19-106). However, this revision is clearly unjustified considering the project's construction period is expected to extend over nearly a generation (i.e., 14- year construction timeframe, as referenced on page 4.3.8-3 et al.). The temporal extent of the anticipated construction traffic impacts needs to be clearly identified in the Final EIR/EIS for each of the roadways affected and physical roadway improvements need to be identified to offset these impacts.	The lead agencies acknowledge your concerns about the duration of adverse effects. The traffic analysis was based on a conservative worst-case scenario in which all construction trips are assigned to the roadway network for each analysis hour as discussed on Recirculated Draft EIR/S Chapter 19, Transportation, page 19-106. Not all segments are expected to operate under worst-case conditions and thus be subject to unacceptable levels of service for 9-13 hours per day. The lead agencies will also ensure development of site-specific construction traffic management plans (TMPs) that address the specific steps to be taken before, during, and after construction to minimize traffic impacts, including the mitigation measures and environmental commitments identified in this EIR/EIS. This will include potential expansion of the study area identified in this EIR/EIS to capture all potentially significantly affected roadway segments.
2573	29	[Chapter-Page]: Appendix A, Chapter 19, page 19-106 [Issue Area]: Intersection impact analysis and traffic hazards for residents. Table 19-25 includes a detailed description of the project's impacts on specific roadways but no analysis is provided regarding construction traffic impacts on specific intersections. With the volume of construction traffic anticipated with the preferred project, deficient intersection operations would be expected along all of the roadways used by construction vehicles. Without any analysis, the traffic analysis included in the Recirculated Draft EIR/EIS is deficient. An additional concern is the difficulty some residents may experience trying to exit their driveways onto roads used by multiple, large construction vehicles, particularly if they have short site distances. The traffic safety hazards for Yolo County residents needs to be further described and analyzed in the Final EIR/EIS.	The construction management plans described in Mitigation Measure TRANS-1a will include coordination with Yolo County. The lead agencies will also ensure development of site-specific construction management plans (TMPs) that address the specific steps to be taken before and during construction to minimize traffic impacts and consideration of impacts on intersections and driveways.
2573	30	[Chapter-Page]: Appendix A, Chapter 19, page 19-119 [Issue Area]: Long-term construction vehicle traffic impacts. Significant increases in traffic volumes are also expected in the City of West Sacramento on Industrial Boulevard/Lake Washington Boulevard and Jefferson Boulevard, and in unincorporated Yolo County on River Road and Courtland Road. The identified traffic volumes on these roadways have been revised substantially higher than identified in the 2013 Public Draft EIR/EIS. For example, on Jefferson Boulevard between Southport Parkway and the West Sacramento city limits, the 2013 Public Draft EIR/EIS concluded that the preferred project would exceed the traffic threshold during six hours. However, the Recirculated Draft EIR/EIS concludes that this same roadway would exceed the traffic threshold during 12 of the 13 hours evaluated (i.e., 7:00 am to 7:00 pm) (Table 19-25). The Final EIR/EIS needs to clearly articulate the cause of this increase and provide additional mitigation to specifically address the impact's incremental degradation.	The traffic analysis was based on a conservative worst-case scenario in which all construction trips are assigned to the roadway network for each analysis hour as discussed on Recirculated Draft EIR/S Chapter 19, Transportation, page 19-106. Not all segments are expected to operate under worst-case conditions and thus be subject to unacceptable levels of service for 9-13 hours per day. Mitigation Measure TRANS-1a describes implementation of site specific construction management plans for each of the affected agencies, including the City of West Sacramento. The lead agencies will also ensure development of site-specific construction traffic management plans (TMPs) that address the specific steps to be taken before, during, and after construction to minimize traffic impacts, including the mitigation measures and environmental commitments identified in this EIR/EIS. This will include potential expansion of the study area identified in this EIR/EIS to capture all potentially significantly affected roadway segments.
2573	31	[Chapter-Page]: Appendix A, Chapter 19, page 19-122	The BDCP proponents acknowledge the importance of Delta roads for the delivery of emergency services. Final EIR/EIS Chapter 19, Transportation, page 19-36 identifies interference with emergency services as an

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		<p>[Issue Area]: Long-term construction vehicle traffic mitigation measures.</p> <p>Mitigation Measure TRANS-1a states that the Congestion Management Plan will include provisions stipulating that haulers are to pull over in the event of an emergency and that appropriate maneuvers will be conducted by the construction vehicles on narrow two-way roadways to allow continual access for emergency vehicles at the time of an emergency. However, the mitigation measure provides no further details defining an appropriate maneuver on a narrow, two-way levee road with a deficient pavement condition (Table 19-26), such as River Road. Because vehicle traffic on this roadway is projected to increase from a current range of 25 to 63 vehicles per hour to a range of 651 to 698 vehicles per hour with implementation of the preferred project (Table 19-25), or about one vehicle every 5 seconds, it is difficult to envision how construction vehicles will implement appropriate maneuvers that could accommodate emergency vehicles. At these levels of vehicle trips, any delays in traffic flows will result in substantial queuing on the County's narrow roadways that will completely block emergency vehicles trying to access rural residences and businesses. This issue needs to be more thoroughly evaluated in the Final EIR/EIS and detailed mitigation measures need to be developed to ensure the health and safety of residents in Yolo County are not adversely affected by project implementation.</p>	<p>effect. Impact TRANS-3 further discusses this problem and its effects. Mitigation Measure TRANS-1a includes provisions to ensure that construction vehicles allow continual access for emergency vehicles at the time of an emergency. Mitigation Measure TRANS-1c also seeks to work with affected jurisdictions to enhance capacity of congested roadway segments where construction traffic will substantially affect transportation facilities. However, some significant impacts may be unavoidable as discussed on page 19-70 of Chapter 19, Transportation.</p> <p>Mitigation Measures TRANS-2a, b, and c seek to eliminate or reduce traffic on deficient segments or to improve the condition of those pavement sections if use cannot be avoided. However, the proponents realize that this may not be feasible for all segments. Mitigation Measure TRANS-2c also includes remediation of roads to their condition prior to project construction, or better. Mitigation Measure TRANS-2c also includes coordination with affected agencies to accomplish this objective.</p> <p>The lead agencies acknowledge that construction truck traffic may impact the local community (residents, schools, and farmers). Therefore, Mitigation Measure TRANS-1c also seeks to work with affected jurisdictions to enhance capacity of congested roadway segments where construction traffic will substantially affect transportation facilities.</p> <p>Under Mitigation Measure TRANS-1a, the lead agencies will also coordinate with Yolo County to develop a site-specific construction traffic management plan (TMP) that address impacts on Yolo County roadway segments, including State Route 84 / Jefferson Boulevard.</p>
2573	32	<p>[Chapter-Page]: Appendix A, Chapter 19, page 19-124</p> <p>[Issue Area]: Long-term construction vehicle traffic mitigation measures.</p> <p>Mitigation Measure TRANS-1b states that construction activity will be limited to fit within available roadway reserve capacity or will be shifted to hours with more reserve capacity so as to achieve acceptable LOS [low-outflow scenario] conditions. However, the impacts on Yolo County roadway segments, including State Route 84 and Jefferson Boulevard, are anticipated to occur throughout the entire day (i.e., 6:00 am to 7:00 pm for State Route 84 and 7:00 am to 7:00 pm for Jefferson Boulevard). Because the traffic volumes substantially exceed the roadway thresholds throughout the day, there is no ability to shift construction traffic to periods with more reserve capacity. If construction activities are limited in response to this mitigation measure, the very long construction period would likely be further extended, thus extending the duration of the impacts. Therefore, this mitigation measure is woefully deficient in minimizing the identified impact.</p>	<p>The lead agencies acknowledge your concerns about the ability to shift construction traffic times as described in Mitigation Measure TRANS-1b. Mitigation Measure TRANS-1c discusses capacity enhancement of roadway segments, which may be necessary if shifting construction traffic to different time periods is insufficient to keep total traffic within roadway capacity.</p> <p>Under Mitigation Measure TRANS-1a, the lead agencies will also coordinate with Yolo County to develop a site-specific construction traffic management plan (TMP) that address impacts on Yolo County roadway segments, including State Route 84 and Jefferson Boulevard.</p>
2573	33	<p>[Chapter-Page]: Appendix A, Chapter 19, page 19-133</p> <p>[Issue Area]: Long-term construction vehicle traffic mitigation measures.</p> <p>Mitigation Measure TRANS-2a states that the project proponent will prohibit or limit construction traffic on already physically deficient roadway segments to the extent feasible as well as improve the condition of affected roadway segments following construction. Roads identified as deficient in Yolo County (Table 19- 26) include State Route 84, Jefferson Boulevard, River Road, and Courtland Road. Based on the substantial construction traffic identified as using these roadways and the lack of viable alternative routes, this mitigation measure is clearly unachievable and should be revised to directly address the impact.</p>	<p>The lead agencies acknowledge your concerns about the ability to prohibit or limit construction traffic on physically deficient roadway segments as described in Mitigation Measures TRANS-2a and TRANS-2b.</p> <p>Therefore, if use of physically deficient roadways cannot be avoided or limited as specified in Mitigation Measures TRANS-2a and TRANS-2b, it may be necessary to improve the deficient roadways identified in the EIR/EIS, or make other necessary infrastructure improvements, if any, before construction to make them suitable for use during construction.</p> <p>Additionally, all affected roadways would be returned to preconstruction condition or better following construction. Implementation of this measure will ensure that construction activities will not worsen pavement conditions, relative to Existing Conditions. Mitigation Measure TRANS-2c discusses improving the physical condition of roadway segments, which may be necessary if prohibiting or limiting construction</p>

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			traffic is inadequate.
2573	34	<p>[Chapter-Page]: Appendix A, Chapter 23, page 23-13</p> <p>[Issue Area]: Construction traffic noise significance thresholds.</p> <p>In the Determination of Effects discussion of truck trips and worker commute trips, the Recirculated Draft EIR/EIS concludes that trips on local roadways are considered to result in an adverse traffic noise impact if the increase in volume would result in a substantial increase in noise levels. For the purposes of the analysis, the document concludes that a substantial increase is defined as 5 dB [decibels], which is defined as a discernible increase by FHWA [Federal Highway Administration]. However, the document modifies this conclusion for Future with Project conditions. Under these conditions, a substantial increase in noise levels is only defined as a 5 dB increase when the loudest-hour traffic noise level is predicted to be 60 dBA Leq [equivalent continuous sound level] or greater at a residential location. Therefore, an increase of 10 dB at the nearest residence would be considered less than significant if the ambient noise level is below 60 dB, which is the case along many of the rural roads in Yolo County. An example of this in the noise analysis occurs on Franklin Road, which experiences a 10 dB increase in noise levels, from 48 dB to 58 dB, but the document concludes this impact would be less than significant (Table 23-63, page 23-56). Another example occurs along Race Track Road, which would experience a less-than-significant increase of 11 dB.</p> <p>Because noise is measured on a logarithmic scale, a 3 dB increase represents a doubling of noise levels and a 10 dB change represents a ten-fold increase in noise levels. Within the rural areas of Yolo County affected by construction traffic noise, the anticipated increases in ambient noise levels would substantially alter the existing rural noise environment. These noise level increases will be significant, regardless of whether the baseline noise levels are below or above 60 dB, and appropriate mitigation needs to be identified to reducing the severity of these noise impacts to less-than-significant levels rather than concluding that they are significant and unavoidable.</p>	<p>The commenter’s concerns regarding the noise level increase threshold are acknowledged. Construction of the project uses noise thresholds established by California DWR, which were established based on a consensus of experts, and local and resource agencies.</p> <p>The 40 dBA existing ambient is used to characterize rural setting for many locations within the project area. The goal of mitigation is to reduce levels to below the thresholds of 60 dBA daytime/ 50 dBA nighttime. Note that although noise levels of up to 60 dBA would still be higher than the existing level of 40 dBA, a noise level of 60 dBA Ldn (equivalent to threshold of 60 dBA daytime/50 dBA nighttime) would be considered “normally acceptable” under State General Plan guidelines.</p> <p>A 10-dB change represents a ten-fold increase in sound energy. However, humans subjectively experience a 10 dB increase in sound level as a doubling in loudness, as described in Chapter 23.</p> <p>The analysis in the EIR/EIS acknowledges that impacts from noise during construction under worst-case conditions are potentially significant and unavoidable. Mitigation measures NOI-1a and NOI-1b are available to reduce the effects of noise during construction. Mitigation NOI-3 is available to reduce the effects of noise during operation.</p>
2573	35	<p>[Chapter-Page]: Appendix A, Chapter 23, page 23-51</p> <p>[Issue Area]: Construction equipment noise impacts.</p> <p>Table 23-61 identifies the land uses affected by equipment noise from construction of the intakes. In the 2013 Public Draft EIR/EIS, this table concluded that 7 residential parcels would experience an exceedance of the daytime noise threshold of 60 dB [decibels] in Yolo County. However, in the Recirculated Draft EIR/EIS, this table identifies a total of 27 residential parcels that would experience an exceedance of the daytime noise threshold. No explanation is provided as to why the number of affected residential parcels has increased. The Final EIR/EIS needs to clearly articulate why more residential parcels would be affected by the preferred project than previously anticipated and must identify feasible and implementable mitigation measures to reduce these impacts to less-than-significant levels.</p>	<p>The increase in the number of affected parcels is likely due to changes in the project alternative alignment, and changes to assumptions regarding pile driver utilization, which was revised from 20% in the Public Draft EIR/EIS to 100% in the Recirculated Draft EIR/EIS. Mitigation measures NOI-1a and NOI-1b are available to reduce the effects of noise during construction. Although these measures would reduce noise levels during construction, they may not reduce impacts to less-than-significant levels in all cases where impacts occur. Therefore impacts are considered to be significant and unavoidable. However, DWR and contractors hired to construct any conveyance components of the project will implement a site-specific noise abatement plan to avoid or reduce potential construction-, maintenance-, and operation-related noise impacts. This section also includes environmental commitments to reduce noise levels where exceedances are anticipated to occur. Among these measures is a commitment to limit pile driving to the hours of 7 a.m. to 7 p.m.</p>
2573	36	<p>[Chapter-Page]: Appendix A, Chapter 23, page 23-52</p> <p>[Issue Area]: Construction traffic noise impacts.</p> <p>Noise levels are measured on a logarithmic scale and a 10 dB [decibel] change represents a</p>	<p>Mitigation measures NOI-1a and NOI-1b are available to reduce the effects of noise during construction. DWR and contractors hired to construct any conveyance components of the project will implement a site-specific noise abatement plan to avoid or reduce potential construction-, maintenance-, and operation-related noise impacts. Environmental commitments would also reduce noise levels where</p>

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		ten-fold increase in noise levels while a 20 dB change represents a 100-fold increase in noise levels. As identified in Table 23-63, the construction traffic noise levels on both River Road and Courtland Road are projected to increase by 18 dB, from 48 dB to 66 dB. This represents a staggeringly-high noise level increase in a rural area, considering noise levels of 66 dB are commonly associated with busy freeways that would typically require the installation of sound walls. Although outside of Yolo County, noise levels along a section of Lambert Road are projected to increase by 22 dB due to project construction traffic. These noise level increases are anticipated to occur over much of the construction life of the preferred project (14 years) and will clearly be inconsistent with the coequal goals, which are required by Water Code Section 85054 to be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place. The Final EIR/EIS needs to fully address how the anticipated construction traffic noise impacts will affect the long-term cultural and economic viability of local Delta communities particularly as they relate to the legislative mandate to protect and enhance the Delta as an evolving place.	<p>exceedances are anticipated to occur.</p> <p>Noise is already discussed in Chapter 16, Socioeconomics, under Impacts ECON-3 and -9, which evaluate changes in community character. Implementation of the noise abatement plan would reduce adverse effects (see Appendix 3B, Environmental Commitments, AMMs, and CMs).</p> <p>Please also see Master Response 24 for information on the Delta As a Place.</p>
2573	37	<p>[Chapter-Page]: Appendix A, Chapter 23, page 23-52</p> <p>[Issue Area]: Construction traffic noise impacts.</p> <p>The analysis of construction traffic noise impacts uses a reference distance of 100 feet in determining the significance of noise increases. Therefore, the noise level increases identified in Table 23-63 all assume residences are at least 100 feet from the affected roadway. However, it is not uncommon for residences to be located within 20 to 50 feet from rural roadways in Yolo County. In such cases, the traffic noise experienced by these residences would be substantially higher than predicted in Table 23-63. As identified in Table 23-63A, a total of 628 parcels that would be affected by construction traffic noise have been identified in Yolo County alone. The Final EIR/EIS needs to specifically identify projected traffic noise levels for any residences closer than 100 feet to affected roadways in order to accurately convey the preferred project's anticipated impacts.</p>	The commenter's concern about increased traffic noise levels at residences adjacent to roads is acknowledged. Please note that Table 23-63A in the RDEIR/RDEIS, Land Use Zones Adjacent to Project Haul Routes Affected by Increases in Traffic Noise, Modified Pipeline-Tunnel Conveyance Option, is a count of all affected parcels predicted to exceed traffic noise thresholds, including residences nearer and farther than 100 feet relative to project haul routes. This applies to tables that present the same information under other project alternatives. The levels reported in Table 23-63 at a reference distance of 100 feet describe the extent of predicted increase in traffic noise levels along project haul routes, and are not intended to describe levels at specific residences.
2573	38	[ATT2: Letter from the County of Yolo Board of Supervisors, dated July 29, 2014, to Secretary Sally Jewell of the US Department of the Interior and Secretary John Laid of the California Natural Resources Agency.]	This comment describes an attachment to the comment letter, a July 29, 2014 comment letter on the Public Draft EIR/EIS for the BDCP. Please see response to Comment 1.
2573	39	[ATT3: From Yolo County -- "Review of Draft Environmental Impact Report/Environmental Impact Statement" dated July 29, 2014.]	This comment describes an attachment to the comment letter. Please see response to Comment 1.
2573	40	[ATT4: Letter dated April 16, 2012 from County of Yolo to Ann Chrisney of the US Department of the Interior, Bureau of Reclamation, Mid-Pacific Region, Bay-Delta Office.]	This comment describes an attachment to the comment letter, an April 16, 2012 comment letter on the Preliminary Draft Chapters of the BDCP EIR/EIS. The lead agencies considered all comments on preliminary drafts and incorporated those comments in later versions as appropriate.
2573	41	[ATT5: Letter dated July 12, 2012 from County of Yolo to Ann Chrisney of the U.S. Department of the Interior, Bureau of Reclamation, Mid-Pacific Region, Bay-Delta Office.]	This comment describes an attachment to the comment letter, a July 12, 2012 comment letter on the Preliminary Draft Chapters of the BDCP EIR/EIS. The lead agencies considered all comments on preliminary drafts and incorporated those comments in later versions as appropriate.
2573	42	[ATT6: Yolo County BDCP EIR/EIS Review Document Comment Form dated July 12, 2013.]	This comment describes an attachment to the comment letter, a July 12, 2013 comment form on the Administrative Draft. The lead agencies considered all comments on the Administrative Draft and incorporated those comments in later versions as appropriate.

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2573	43	[ATT7: Letter dated April 16, 2012 from County of Yolo to Ann Chrisney of the US Department of the Interior, Bureau of Reclamation, Mid-Pacific Region, Bay-Delta Office.]	This comment describes an attachment to the comment letter, an April 16, 2012 comment letter on Preliminary Draft Chapters of the BDCP EIR/EIS. The lead agencies considered all comments on the Administrative Draft and incorporated those comments in later versions as appropriate.
2573	44	[ATT8: Yolo County BDCP EIR/EIS Review Document Comment Form -- First Administrative Draft, dated February 2012.]	This comment describes an attachment to the comment letter, a February 2012 comment form on the First Administrative Draft. The lead agencies considered all comments on the Administrative Draft and incorporated those comments in later versions as appropriate.
2573	45	[ATT9: The Yolo Natural Heritage Program Interface with the Bay Delta Conservation Plan Background, Summary and Remaining Issues dated May 23, 2013.]	This comment describes an attachment to the comment letter, a document discussing the interface of the Yolo Natural Heritage Program and the BDCP. Please refer to Master Response 5 for information with regard to the BDCP or Alternative 4. Please also see Section 12.3.6.1, Effects on Other Conservation Plans, in the Final EIR/EIS for a detailed analysis of how the alternatives affect surrounding habitat conservation plans and natural community conservation plans.
2573	46	[ATT10: Letter from Delta Counties Coalition, dated April 16, 2013, to the Honorable Michael L. Connor, Commissioner, Bureau of Reclamation.]	This comment describes an attachment to the comment letter, an April 16, 2013 letter from the Delta Counties Coalition regarding Yolo County's Proposed BDCP Governance Model. Please refer to Master Response 5 for information with regard to the BDCP or Alternative 4, including governance issues.
2573	47	[ATT11: "Bay Delta Conservation Plan -- Enhancing Local Control (Draft -- for Discussion Purposes Only)" prepared by Yolo County dated April 16, 2013.]	This comment describes an attachment to the comment letter. Please refer to Master Response 5 for information with regard to the BDCP or Alternative 4, including governance issues.
2573	48	[ATT12: Yolo County White Paper Re: Models for Governance to be Used in Bay Delta Conservation Plan, authored by Hanson Bridgett LLP, dated April 12, 2013.]	This comment describes an attachment to the comment letter, a document discussing potential models for governance to be used in the BDCP. Please refer to Master Response 5 for information with regard to the BDCP or Alternative 4, including governance issues.
2573	49	[ATT13: Letter re: Bay Delta Conservation Plan -- Yolo Bypass/Fremont Weir Modification, dated April 5, 2010, from Yolo County Board of Supervisors to Secretary Lester Snow of the California Natural Resources Agency.]	This comment describes an attachment to the comment letter, an April 5, 2010 letter regarding the Fremont Weir/Yolo Bypass Habitat Improvements Conservation Measure. Please refer to Master Response 5 for information with regard to the BDCP or Alternative 4, including CM2.
2573	50	[ATT14: Jul 7, 2014 review memo "Review of Noise Analysis in the Bay Delta Conservation Plan Draft EIR/EIS" authored by Ascent Environmental.]	This comment describes an attachment to the comment letter, a review of the noise analysis in the BDCP Draft EIR/EIS. Please refer to BDCP Letter 1676-234 through 1676-255 regarding the attachment.
2574	1	On its face, the singular focus on water supply infrastructure within the WaterFix raises significant concern as to whether the project itself is consistent with the Delta Reform Act and specifically, the coequal goals for the Delta. The proposed project offers only simple mitigation that will maintain or increase the current magnitude of impacts on the Delta. When the Legislature passed the Delta Reform Act in 2009, members were assured that new conveyance would only be advanced alongside tangible and measurable improvements in ecosystem conditions in the Delta. With the move from the BDCP to the WaterFix, this commitment has been broken.	As a plan prepared to meet the rigorous standards of the federal and state Endangered Species Acts, the proposed project is intended to be environmentally beneficial, not detrimental. By establishing a point of water diversion in the north Delta and new operating criteria to improve water volume, timing, and salinity, the proposed project is designed to improve native fish migratory patterns and allow for greater operational flexibility. The project proposes to stabilize water supplies, and exports could only increase under certain circumstances. Water deliveries from the federal and state water projects under a fully-implemented Alternative 4A are projected to be about the same as the average annual amount diverted in the last 20 years. Although the proposed project would not increase the overall volume of Delta water exported, it would make the deliveries more predictable and reliable, while restoring an ecosystem in steep decline. See Master Response 31 for more information about the Delta Reform Act.
2574	2	The proposed project is one of the most controversial, expensive, and enormous projects ever proposed in California. Prior to moving forward with such a consequential project, all benefits, risks, impacts and costs should be clearly disclosed. However, the RDEIS/SDEIS and the process to develop the document, have failed to provide	For both environmental and economic reasons, there is an urgent need to improve and modernize the existing SWP/CVP conveyance system, which was designed and built decades ago. The ecological problems with the current system could be greatly reduced by the construction and use of new north Delta intake structures with state-of-the-art fish screens. With this future vision in mind, DWR and several state and federal water contractors, in coordination with the Bureau of Reclamation, proposed a strategy for restoring

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		<p>clear answers to basic questions necessary to determine whether this project will benefit California, comply with current laws, or, importantly, contribute to the continued decline of the Sacramento-San Joaquin Delta and the connected San Francisco Bay Estuary.</p>	<p>ecological functions in the Delta while improving water supply reliability in California.</p> <p>Please see Master Response 3 for more information on purpose and need, and Master Response 13 related to development of proposed project in accordance with the California Constitution and “beneficial and reasonable use” criteria.</p>
2574	3	<p>Prior to moving forward with approval of the Water Fix environmental documents, please provide clear answers to the following question:</p> <p>Will the WaterFix provide additional inflow and outflow to the Delta? Will flows under the WaterFix prevent further degradation of public trust values in the Delta? How will flows compare to the flow levels identified by the State Water Resources Control Board as necessary to maintain public trust resources in the Delta?</p>	<p>The proposed project would decrease total exports of SWP and CVP water as compared to Existing Conditions and No Action Alternative in the summer and early fall months and in drier years; and increase exports in the wet winter months in wetter years when the river flows are high. The water would be stored at locations south of the Delta during the high flow periods to allow reductions in deliveries to SWP and CVP water users in drier periods. As shown in Appendix 5A, Section C, Delta outflow would be similar under the proposed project as compared to the No Action Alternative. Summer Delta outflows under the proposed project and No Action Alternative would be less than under Existing Conditions due to climate change and sea level rise.</p> <p>As described in Appendix 3A, Identification of Water Conveyance Alternatives Conservation Measure 1, of the EIR/EIS, one of the potential alternatives considered was based upon the State Water Resources Control Board 2010 Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem, which described providing up to 75 percent of unimpaired flow into the Delta to improve aquatic resources habitat conditions. This potential alternative was not evaluated in detail because the flow recommendations in the 2010 report could not be achieved without adverse impacts to cold water management for fisheries in the Sacramento, Feather, and American rivers without reductions in non-SWP and non-CVP water rights diversions. The purpose and need of this EIR/EIS would not allow changes to non-SWP and non-CVP water rights. However, Alternatives 7 and 8 in the EIR/EIS reflect similar flow criteria in a manner that would only affect SWP and CVP water rights.</p>
2574	4	<p>Prior to moving forward with approval of the Water Fix environmental documents, please provide clear answers to the following question:</p> <p>How, specifically, does the Water Fix comply with the requirements of the Delta Reform Act, including:</p> <ul style="list-style-type: none"> a. the requirements listed in Water Code section 85320 pertaining to the BDCP; b. comply with the co-equal goals, including the goal of achieving activities in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place; c. comply with Water Code Section 85021, establishing the policy of the State of California to reduce reliance on the Delta? 	<p>See Master Response 31 regarding compliance with the Delta Reform Act.</p> <p>Since 2006, the proposed project has been developed based on sound science, data gathered from various agencies and experts over many years, input from agencies, stakeholders and independent scientists, and more than 600 public meetings, working group meetings and stakeholder briefings.</p> <p>DWR’s fundamental purpose of the proposed project is to make physical and operational improvements to the SWP system in the Delta necessary to restore and protect ecosystem health, water supplies of the SWP and CVP south of the Delta, and water quality within a stable regulatory framework, consistent with statutory and contractual obligations. By establishing a point of water diversion in the north Delta and new operating criteria to improve water volume, timing, and salinity, the proposed project is designed to improve native fish migratory patterns and allow for greater operational flexibility. Please see Master Response 3 for additional information regarding the purpose and need behind the proposed project.</p> <p>More than two-thirds of the residents of the state and more than two million acres of highly productive farm land receive water exported from the Delta watershed. The proposed project aims to provide a more reliable water supply, in a way more protective of fish. However, the project proponents have no authority to designate what water is used for.</p> <p>One of the State Water Resources Control Board’s (State Water Board’s) charges is to ensure that the State’s water is put to the best possible use and that this use is in the best interest of the California public. This charge is reflected in part by the designation of beneficial uses established through the State Water Board’s planning process. These beneficial uses are identified in each Water Quality Control Plan (Basin Plan) issued by the State Water Board.</p>

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			<p>The Lead Agencies have no power to impose penalties on individual water users. DWR and Reclamation have contracts with various entities, some of which sell water to water retailers, who have individual policies and programs to motivate ratepayers to conserve water. Different districts have the right to take different approaches depending on their individual circumstances.</p> <p>No issues related to the adequacy of the environmental impact analysis in the CEQA and NEPA documents were raised.</p>
2574	5	<p>Prior to moving forward with approval of the Water Fix environmental documents, please provide clear answers to the following question:</p> <p>Will the proposed project result in loss of prime agricultural lands in the Delta?</p>	<p>The impact analysis in Chapter 14, Agricultural Resources, addresses the potential for effects associated with temporary construction activities, footprint of disturbance of new water conveyance facilities and CM2–CM11, CM13, CM15, CM16, CM20, CM21, or Environmental Commitments 3, 4, 6–11, 15 and 16 under the non-HCP alternatives, and operation of the action alternatives within the study area. Relying on spatial data from the California Departments of Conservation and Water Resources, as well as project-specific data describing the location of project components, this section considers conversion of agricultural land designated as Important Farmland (Prime, Unique, Statewide Importance, and Local Importance) and subject to Williamson Act contracts or in Farmland Security Zones. Project-specific data also determined whether features would create footprint effects that would be temporary/short-term or permanent in nature. The section also describes potential changes to agricultural viability from the project as it relates to operational effects on water quality, groundwater elevation, and inundation frequency. Finally, the section considers several indirect consequences on agricultural resources that may result from implementation of the action alternatives.</p>
2574	6	<p>Prior to moving forward with approval of the Water Fix environmental documents, please provide clear answers to the following questions:</p> <p>Will water quality conditions in the Delta decline under the proposed project? Will reduced freshwater flow under the proposed project contribute to increased blooms of blue-green algae, and confound other such water quality problems in the Delta?</p>	<p>The commenter's questions have been addressed in Chapter 8, Water Quality, of the EIR/EIS in Impacts WQ-1 through WQ-34. Address of blue-green algae, Microcystis, is specifically addressed in Impacts WQ-32 and WQ-33. These assessments consider the change in proportion of Sacramento River water to other source waters both through modeling and qualitative assessments, as detailed in Chapter 8 of the EIR/S. Please refer to Master Response 14.</p>
2574	7	<p>Prior to moving forward with approval of the Water Fix environmental documents, please provide clear answers to the following question:</p> <p>How will reduced freshwater flow impact the San Francisco Bay?</p>	<p>The commenter's question has been addressed in Chapter 8, Water Quality, of the EIR/EIS in Impact WQ-34. The assessment considered the change in Delta outflow and resulting change in Delta water quality due to each alternative. Also, please see Master Response 14, Water Quality regarding effects of the alternatives on Microcystis and microcystin levels in San Francisco Bay. Please refer to Master Response 14.</p>
2574	8	<p>Prior to moving forward with approval of the Water Fix environmental documents, please provide clear answers to the following question:</p> <p>Will the proposed project intensify the anticipated impacts of climate change in the Delta and the San Francisco Bay ecosystems?</p>	<p>Please refer to the resource impact sections of the DEIR/EIS and RDEIR/SDEIS Chapters 5 thru 28. The anticipated impacts of climate change are included in the analysis of each of the resource sections and the impact of the project and climate change are evaluated and disclosed. For more information on the climate change analysis approach and methodology please refer to Master Response 19.</p>
2574	9	<p>Recently, the Delta Independent Science Board reviewed the RDEIS/SDEIS and concluded, "The Current Draft lacks key information, analyses, summaries, and comparisons. The missing content is needed for evaluation of the science that underpins the proposed project. Accordingly, the Current Draft fails to adequately inform weighty decisions about public policy."</p> <p>As noted in the Independent Science Board review, the WaterFix RDEIR/SDEIS does not provide the public with the information needed to meaningfully comment on the project. Furthermore, the document does not provide the basic information that California needs in order to decide on a project this magnitude. The RDEIR/SDEIS should be retracted and the</p>	<p>Please refer to comment letters #1448 and #2546 to see responses to the Delta Independent Science Board's comments.</p>

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		WaterFix should not move forward until these basic questions are answered.	
2575	1	<p>The Project purpose remains the same: drain as much water as possible from the Sacramento River watershed and the Delta to continue some of the most destructive forms of desert agriculture, urban sprawl, and industrial extraction. The SDEIS/RDEIR attempts to disclose impacts as required by CEQA and NEPA, but simultaneously obfuscates many of the direct and indirect impacts. AquAlliance seeks to bring to light some of these hidden impacts and baseline information as we did with the DEIS/EIR and to underscore the absurdity of the Twin Tunnels project, which creates the infrastructure to drain the Sacramento River watershed and the Delta of essential fresh water.</p>	<p>The action alternatives could only divert the amount of water under the existing SWP and CVP water rights and in accordance with the existing and future related regulatory requirements based upon river water levels and flow, water available in the system, the presence of threatened and endangered fish species, and water quality standards. For information on water rights issues please see Master Response 32.</p> <p>Regarding the proposed project's purpose and need please see Master Response 3 and Chapter 2 of the Final EIR/EIS.</p>
2575	2	<p>Hydrology:</p> <p>The SDEIS/RDEIR fails to adequately disclose the planned increase in water transfers from the Sacramento River watershed to south of the Delta.</p> <p>If the Twin Tunnels are built as planned with the capacity to take from 9,000 to 15,000 cubic feet per second (cfs) from the Sacramento River, they will have the capacity to drain between 38%-63% of the Sacramento River's average annual flow of 23,490 cfs at Freeport [Footnote 3: USGS 2009. http://wdr.water.usgs.gov/wy2009/pdfs/11447650.2009.pdf] (north of the planned Twin Tunnels). As proposed, the Twin Tunnels will also increase water transfers when the infrastructure for the Project has capacity: "Alternative 4 provides a separate cross-Delta facility with additional capacity to move transfer water from areas upstream of the Delta to export service areas and provides a longer transfer window than allowed under current regulatory constraints. In addition, the facility provides conveyance that would not be restricted by Delta reverse flow concerns or south Delta water level concerns. As a result of avoiding those restrictions, transfer water could be moved at any time of the year that capacity exists in the combined cross-Delta channels, the new cross-Delta facility, and the export pumps, depending on operational and regulatory constraints, including BDCP permit terms as discussed in Alternative 1A." [Footnote 4: SDEIS/RDEIR Appendix A, pp. 5-15, 5-16.] [This paragraph failed to remove "BDCP" from the SDEIS/RDEIR and should be corrected.]</p> <p>With the obvious intention of increasing transfers under Alternative 4, it is unclear how the NEPA and CEQA effects conclusion are opposite from each other unless this is in error.</p> <p>"NEPA Effects: Alternative 4 would decrease water transfer demand compared to existing conditions. Alternative 4 would increase conveyance capacity, enabling additional cross-Delta water transfers that could lead to increases in Delta exports when compared to No Action Alternative." (SDEIS/RDEIR 4.3.1-9) "CEQA Conclusion: Alternative 4 would increase water transfer demand compared to existing conditions. Alternative 4 would increase conveyance capacity, enabling additional cross-Delta water transfers that could lead to increases in Delta exports when compared to existing conditions." (Id.) The Lead Agencies have thoroughly confused the issue and must either explicitly explain or correct the differing conclusions that under NEPA effects "Alternative 4 would decrease water transfer demand" and under CEQA "Alternative 4 would increase water transfer demand" when both agree that, "Alternative 4 would increase conveyance capacity, enabling additional cross-Delta water transfers that could lead to increases in Delta exports. . . ." (Id.)</p>	<p>Please see Master Response 43, Water Transfers.</p> <p>The NEPA effects analysis involves comparing the future conditions with the project to the future conditions without the project. In Chapter 5 and Appendix 5D of the Final EIR/EIS, the estimated increase in project deliveries is forecast to reduce the demand for cross-Delta water transfers.</p> <p>The CEQA analysis involves comparing the future conditions with the project to the existing conditions without the project. In Chapter 5 and Appendix 5D of the Final EIR/EIS, the estimated decrease in project deliveries due to climate change, sea level rise, and increased consumptive use upstream of the Delta is forecast to increase the demand for cross-Delta water transfers.</p> <p>Thus, the NEPA and CEQA conclusions are correct.</p>

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2575	3	<p>The Project's DEIS/EIR stated that north-to-south water transfers will occur during dry years when State Water Project (SWP) contractor allocations drop to 50 percent of Table A amounts or below or when Central Valley Project (CVP) agricultural allocations are 40 percent or below, or when both projects' allocations are at or below these levels (p. 5-52). However, recent patterns contradict this premise in Table 5-2, which illustrates that past water transfers have regularly occurred when SWP and CVP San Joaquin Agriculture allocation percentages have been much higher (p.5-51) and the SDEIS/RDEIR does nothing to correct the false narrative.</p>	<p>Table 5-2 does substantiate the approximate SWP and CVP allocations where a marked increase in transfer demand develops, but that is not an absolute rule, only an approximation. There may be increased transfer demand in the year following a dry or critical year to make up for depleted local storage. The cross-Delta transfer numbers in Table 5-2 are correct. For more information on water transfers please see Master Response 43.</p>
2575	4	<p>The SDEIS/RDEIR fails to illustrate the early history of water transfers and to provide more current information through 2014. AquAlliance expands upon our previous comments providing more context and history that should be presented in another recirculated SDEIS/RDEIR.</p> <p>-1991. WY -- Critical. Reported transfers amounted to 820,000 af [acre-feet]. [Footnote 5: USBR, 2008. Draft Environmental Assessment [EA] for the Option Agreement Between Glenn-Colusa Irrigation District [GCID], Bureau of Reclamation [The Bureau], and the San Luis & Delta-Mendota Water Authority for 2008 Operations. (p.17)]</p> <p>-1992. WY-- Critical. Reported transfers amounted to 193,000 af. (Id.)</p> <p>-1993. WY -- Above Normal. No transfers appear to have occurred. (Id.)</p> <p>-1994. WY -- Critical. Reported transfers amounted to 220,000 af. (Id.) [Footnote 6: In 1994, following seven years of low annual precipitation, the state continued a Drought Water Bank program, which allowed water districts to sell surface water and continue growing rice with ground water. Western Canal Water District and Richvale Irrigation District exported 105,000 af of river water to buyers outside of the area and substituted groundwater from the Tuscan aquifer to continue growing rice. This early experiment in the conjunctive use of the groundwater resources -- conducted without the benefit of project specific environmental review -- caused a significant and immediate adverse impact to orchards, residents, and the environment (Msangi 2006). Until the time of the 1994 water transfers, groundwater levels had dropped, but the Tuscan aquifer had sustained the normal demands of domestic and agricultural users. The water districts' extractions, however, an abnormal demand on the groundwater, lowered groundwater levels throughout the Durham and Cherokee areas of eastern Butte County (Msangi 2006). The water level fell and the water quality deteriorated in the municipal wells serving the town of Durham (Scalmanini 1995) and even shallow residential wells dried up tens of miles away from the pumping. Irrigation wells failed on several orchards in the Durham area. One farm never recovered from the loss of its crop and later entered into bankruptcy.]</p> <p>-2002. WY -- Dry. Settlement Contractors in the Sacramento Valley received 100% of their allocation. Reported transfers amounted to 172,000 af. [Footnote 7: Western Canal Water District, 2012. Initial Study and Proposed Negative Declaration for Western Canal Water District 2012 Water Transfer Program. (p. 25)]</p> <p>-2003. WY -- Above Normal. Settlement Contractors in the Sacramento Valley received 100% of their allocation. Reported transfers amounted to 206,000 af. (Id.)</p>	<p>There are no complete state or federal compilations of water transfer data, although some state and federal data have been compiled at various times, primarily focused on cross-Delta transfers where either the SWP or CVP facilities are used to convey the transfer water from the willing sellers in the source areas to the buyers south of the Delta. Transfers among the SWP contractors are tracked by DWR and transfers among CVP contractors are tracked by Reclamation. But many other transfers occur in California. Appendix 5C in the Final EIR/EIS provides a history of water transfers, including cross-Delta transfers.</p> <p>The appendix contains three main sections: a brief history of the major cross-Delta water transfer programs in California; a discussion of the primary source areas for those transfers based on the past activity of willing buyers and sellers within the regions tributary to the Delta; and a discussion of the amount of transfer water that might be available in an exceptionally dry year if sellers of all currently identified sources were willing to make their water available. In addition, a brief discussion of statewide water transfer activity is included to help present the cross-Delta transfers, which are only one aspect of California water transfer activity, in the proper context with statewide transfers.</p> <p>For more information on water transfers please see Master Response 43. Please also see response to comment 2575-2.</p>

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		<p>-2004. WY -- Below Normal. Settlement Contractors in the Sacramento Valley received 100% of their allocation. Reported transfers amounted to 120,500 af. (Id.)</p> <p>-2005. WY -- Above Normal. Settlement Contractors in the Sacramento Valley received 100% of their allocation. Reported transfers amounted to 5 af. (Id.)</p> <p>-2006. WY -- Wet. Settlement Contractors in the Sacramento Valley received 100% of their allocation. No transfers were reported. (Id.)</p> <p>-2007. WY -- Dry. Settlement Contractors in the Sacramento Valley received 100% of their allocation. Reported transfers amounted to 147,000 af. (Id.)</p> <p>-2008. WY -- Critical. Settlement Contractors in the Sacramento Valley received 100% of their allocation. GCID alone planned an 85,000 af transfer [Footnote 8: GCID, 2008. Initial Study and Proposed Negative Declaration for Option Agreement Between Glenn-Colusa Irrigation District, San Luis & Delta-Mendota Water Authority and the United States Bureau of Reclamation for 2008 Operations, and Related Forbearance Program.] of an expected cumulative total from the Sacramento Valley of 360,000 af. [Footnote 9: USBR, 2008. Draft Environmental Assessment for the Option Agreement Between Glenn-Colusa Irrigation District, Bureau of Reclamation, and the San Luis & Delta-Mendota Water Authority for 2008 Operations. (pp. 4 and 17)] Another source revealed that the actual transfers for that year were 233,000 af. [Footnote 10: Western Canal Water District, 2015. Initial Study and Proposed Negative Declaration for Western Canal Water District 2015 Water Transfer Program. (p. 21)]</p> <p>-2009. WY -- Dry. Settlement Contractors in the Sacramento Valley received 100% of their allocation. The Bureau approved a 1-year water transfer program under which a number of transfers were made. Regarding NEPA, the Bureau issued a FONSI [Finding of No Significant Impact] based on an EA. DWR opined that, "As the EWA [Environmental Water Account]'s exclusive mechanism in 2009 for securing replacement water for curtailed operations through transfers, the DWB [Drought Water Bank] is limited to the maximum 600,000 acre-feet analyzed in the EIS/EIR for the program." [Footnote 11: DWR, 2009. Addendum to the Environmental Water Account Environmental Impact Statement/Environmental Impact Report http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=107 Re: 2009 Drought Water Bank Transfers State Clearinghouse #1996032083. (p. 3)] Reported transfers amounted to 274,000 af. [Footnote 12: Western Canal Water District, 2012. Initial Study and Proposed Negative Declaration for Western Canal Water District 2012 Water Transfer Program. (p. 25)]</p> <p>-2010/2011. WYs -- Below Normal, Wet. Settlement contractors in the Sacramento Valley received 100% of their allocation for both years. The Bureau approved a 2-year water transfer program through an Environmental Assessment/FONSI. The 2010-2011 Water Transfer Program sought approval for 200,000 AF of CVP related water transfers and suggested there would be a cumulative total of 395,910 af of CVP and non-CVP water. [Footnote 13: AquAlliance, 2010. Comments on the Draft Environmental Assessment and Findings of No Significant Impact for the 2010-2011 Water Transfer Program. (pp. 1-2)]</p> <p>The Bureau asserted in that no actual transfers were made under the 2010/2011 Water Transfer Program, however, a Western Canal Water District Negative Declaration declared</p>	

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		<p>that 303,000 af were transferred from the Sacramento Valley and through the Delta in 2010. [Footnote 14: Western Canal Water District, 2012. Initial Study and Proposed Negative Declaration for Western Canal Water District 2012 Water Transfer Program. (p. 25)]</p> <p>-2012. Settlement contractors in the Sacramento Valley received 100% of their allocation. The Bureau planned 2012 water transfers of 76,000 af of CVP water all through groundwater substitution, but it is unclear if CVP transfers occurred. [Footnote 15: USBR 2012. Memo to the Deputy Assistant Supervisor, Endangered Species Division, Fish and Wildlife Office, Sacramento, California regarding Section 7 Consultation.] SWP contractors and the Yuba County Water Agency (YCWA) did transfer water and the cumulative total transferred is stated to be 190,000 af. [Footnote 16: Western Canal Water District, 2015. Initial Study and Proposed Negative Declaration for Western Canal Water District 2015 Water Transfer Program. (p. 21)]</p> <p>-2013. WY -- Dry. Settlement contractors in the Sacramento Valley received 100% of their allocation. The Bureau approved a 1-year water transfer program, again issuing a FONSI based on an EA. The EA incorporated by reference the environmental analysis in the 2010-2011 EA. The 2013 Water Transfer Program proposed the direct extraction of up to 37,505 af of groundwater (pp. 8, 9, 11, 28, 29, 35), the indirect extraction of 92,806 af of groundwater (p. 31), and the cumulative total of 190,906 (p. 29). [Footnote 17: USBR, 2013. Draft Environmental Assessment and Findings of No Significant Impact for the 2013 Water Transfers. (p. 29)] Reported transfers amounted to 210,000 af. [Footnote 18: Western Canal Water District, 2015. Initial Study and Proposed Negative Declaration for Western Canal Water District 2015 Water Transfer Program. (p. 21)]</p> <p>-2014. Federal Settlement Contractors in the Sacramento Valley received 75% and State Settlement Contractors received 100% of their allocations. Total maximum proposed north-to south transfers were 378,733 af and total maximum proposed north-to-north transfers were 295,924 af. [Footnote 19: AquAlliance, 2014. 2014 Sacramento Valley Water Transfers. (Data from: 1) USBR, 2014 EA for 2014 Tehama-Colusa Canal Authority Water Transfers; 2) USBR and SLDMWA, 2014. EA/Negative Declaration, 2014 San Luis & Delta Mendota Water Authority Transfers.)] Reported north-to-south transfers amounted to 198,000 af. [Footnote 20: Western Canal Water District, 2015. Initial Study and Proposed Negative Declaration for Western Canal Water District 2015 Water Transfer Program. (p. 21)]</p> <p>The SDEIS/RDEIR acknowledges that less water will be available for delivery south of the Delta with the Project (SDEIS/RDEIR 4.3.1-9), preferred Alternative 4A "would increase water transfer demand compared to existing conditions," (Id.) and past transfers have taken place in all water year types and when SWP and CVP south-of-Delta contractors receive allocations of all kinds (DEIS/DEIR p. 5-51). In violation of NEPA and CEQA, the analysis of the significant impacts that will accompany increased transfers due to the Project is nowhere to be found.</p>	
2575	5	<p>The SDEIS/RDEIR fails to correct the lack of disclosure of the Lead Agencies conjunctive use and water transfer plans, programs, projects, and funding.</p> <p>The SDEIS/RDEIR fails to reveal that the current Project is part of many more plans, programs, projects, and funding to develop groundwater in the Sacramento Valley, to develop a "conjunctive" system for the region, and to place water districts in a position to</p>	<p>The proposed project is not a comprehensive, statewide water plan, but is instead aimed at addressing many complex and long-standing issues related to the operations of the SWP and CVP in the Delta, including reliability of exported supplies. For more information on the project's purpose and need please see Master Response 3 and Chapter 2 of the Final EIR/EIS.</p>

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		integrate the groundwater into the state water supply. These are plans that the Bureau [of Reclamation], together with DWR, water districts, and others have been pursuing and developing for many years. [Footnote 21: Hauge, Carl, 2011. Presentation to the State Water Commission, September 14, 2011. pp. 11,12,14.] [Footnote 22: 22 McManus, Dan, 2014. Presentation to the State Water Commission, March 3, 2014. p. 2. "Future Water Supply Program (FWSP), Provides data collection and analysis to facilitate and support Sacramento Valley groundwater substitution transfers and conjunctive mgmt."]	Regarding water transfers please see Master Response 43 and Appendix 5C in the Final EIR/EIS. The proposed project includes the Sustainable Groundwater Management Act in its No Action/No Project and Cumulative Impact as noted in Appendix 3D of the FEIR/EIS. For information on demand management, please see Master Response 6. For information on groundwater please see Chapter 7 of the Final EIR/EIS.
2575	6	An environmental impact statement should consider "[c]onected actions." 40 C.F.R. [Section] 1508.25(a)(1). Actions are connected where they "[a]re interdependent parts of a larger action and depend on the larger action for their justification." Id. [Section] 1508.25(a)(1)(iii). Further, an environmental impact statement should consider "[s]imilar actions, which when viewed together with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography." Id. [Section] 1508.25(a)(3). The Bureau [of Reclamation]'s participation in funding, planning, attempting to execute, and frequently executing the programs, plans and projects has circumvented the requirements of NEPA. DWR's failure to conduct project or programmatic level CEQA review for water transfers and comprehensive environmental review for the Sacramento Valley Water Management Agreement has segmented a known, programmatic project for decades, which means that the Bureau is also failing to comply with state law as the CVPIA [Central Valley Project Improvement Act] mandates.	DWR's fundamental purpose of the proposed project is to make physical and operational improvements to the SWP system in the Delta necessary to restore and protect ecosystem health, water supplies of the SWP and CVP south of the Delta, and water quality within a stable regulatory framework, consistent with statutory and contractual obligations. The proposed project is just one element of the state's long-range strategy to meet anticipated future water needs of Californians in the face of expanding population and the expected effects of climate change. The proposed project is not a comprehensive, statewide water plan, but is instead aimed at addressing many complex and long-standing issues related to the operations of the SWP and CVP in the Delta, including reliability of exported supplies, and the recovery and conservation of threatened and endangered species that depend on the Delta. It should be recognized that those actions that can be reasonably foreseen have been included in either the future no action scenario and/or the cumulative effects analysis process. Please see Master Response 8 for more information regarding the project being analyzed as a whole and Master Response 3 for more information on the purpose and need for the project. More information on the project's purpose and need can also be found in Chapter 2 of the Final EIR/EIS. Please also see Master Response 2 for information on project level versus program level analysis. Regarding water transfers please see Master Response 43.
2575	7	The SDEIS/RDEIR fails to adequately disclose the existing geology that is the foundation of the Sacramento River's hydrology and the Sacramento Valley's groundwater basins. The DEIS/EIR (p. 7-1) and the SDEIS/RDEIR both fail to note a significant geographic feature in the Sacramento River hydrologic region: the Cascade Range. The Cascade Range is the genesis of the Sacramento River and some of its most significant tributaries: the Pit and the McCloud Rivers. This serious omission continued throughout Chapter 7 of the DEIS/EIR and has not been corrected in the SDEIS/RDEIR. The enormous influence of the Cascade Mountain Range on not only the Sacramento River, but the geology, soils, and hydrology of the Sacramento Valley's ground water basin is also completely missing. The California Department of Conservation describes the Range thusly: "The Cascade Range, a chain of volcanic cones, extends through Washington and Oregon into California. It is dominated by Mt. Shasta, a glacier-mantled volcanic cone, rising 14,162 feet above sea level. The southern termination is Lassen Peak, which last erupted in the early 1900s. The Cascade Range is transected by deep canyons of the Pit River. The river flows through the range between these two major volcanic cones, after winding across interior Modoc Plateau on its way to the Sacramento River." [Footnote 23: California Department of Conservation, California Geological Survey, 2002. California Geomorphic Provinces. [sic]] The Sacramento River Watershed Program provides another simple, adequate description of its namesake: "The Sacramento River is the largest river and watershed system in California (by discharge, it is the second largest U.S. river draining into the Pacific, after the Columbia River). This 27,000-square mile basin drains the eastern slopes of the Coast Range, Mount Shasta, the western slopes of the southernmost region of the Cascades, and the northern portion of the Sierra Nevada. The Sacramento River carries 31% of the state's total surface water runoff."	The proposed project (Alternative 4A) and other action alternatives would not change operational criteria for the SWP and CVP reservoirs in the Sacramento Valley; and would only export water allocated to the SWP and CVP under existing water rights issued by the State Water Resources Control Board. Water deliveries to SWP and CVP water users in the Sacramento Valley would be similar under all action alternatives and the No Action Alternative, as shown in Appendix 5A, Section C. Long-term water deliveries to SWP water users in the Sacramento Valley would be similar under all action alternatives and Existing Conditions. There would be increased water deliveries (177,000 acre-feet long-term average) to CVP municipal and industrial water users in the Sacramento Valley under all action alternatives and No Action Alternative as compared to Existing Conditions due to growth projected under existing general plans and urban water management plans. This increase in water deliveries to CVP municipal and industrial water users in the Sacramento Valley result in a decrease in water deliveries to CVP agricultural water users in the Sacramento Valley under all action alternatives and No Action Alternative as compared to Existing Conditions. Due to the reduction in CVP agricultural water deliveries, water users could increase groundwater use. These changes would occur with or without implementation of the project. The proposed project or the action alternatives do not include provisions for water transfers or conveyance of groundwater. Therefore, changes in groundwater in the Sacramento Valley were only associated with increased groundwater use for CVP agricultural water users that would occur with or without the project. Therefore, the Existing Conditions/Affected Environment section of the EIR/EIS did not describe historical and existing groundwater conditions in detail. For information on Geology and Seismicity please see Chapter 9 of the Final EIR/EIS. Also see response to comment 2575-9.

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		[Footnote 24: http://www.sacriver.org/aboutwatershed/roadmap/sacramento-river-basin]	
2575	8	<p>The failure of the SDEIS/RDEIR to correct the inadequacies of the DEIS/EIR of some of the most basic geologic, geographic and hydrologic information in the EIS/EIR on which the entire Project is dependent causes the reader to wonder what else has been ignored or purposely omitted in the document.</p> <p>The SDEIS/RDEIR fails to disclose the over appropriation of water rights in the Sacramento River Watershed.</p> <p>AquAlliance brought the over-appropriation of water to the Lead Agencies' attention in comments for the DEIS/EIR. It appears to have been ignored, so we raise it again here. The public is presented with inadequate baseline data with which to consider the consequences of the Project. The comparison of the average unimpaired flow of the Sacramento River Watershed stacked against the claims that have been made for water is but one example. The average annual unimpaired flow in the Sacramento River basin is 21.6 MAF [million acre-feet], but the consumptive use claims are an extraordinary 120.6 MAF! [Footnote 25: California Water Impact Network, AquAlliance, and California Sportfishing Protection Alliance 2012. Testimony on Water Availability Analysis for Trinity, Sacramento, and San Joaquin River Basins Tributary to the Bay-Delta Estuary.]</p>	<p>The State Water Resources Control Board, not DWR, is responsible for decisions relating to water rights. DWR holds water rights approved by the State Water Resources Control Board but does not have the power or authority to issue water rights to others. Additionally, the proposed project does not seek any new water rights nor include any regulatory actions that would affect water rights holders other than DWR, Reclamation, and SWP and CVP contractors.</p> <p>Importantly, all water exported by the SWP and CVP is the subject of the existing water rights of those two agencies. Exports do not come at the expense of other water rights holders. The proposed project and its alternatives analyzed in the EIR/EIS only include the use of water from existing SWP and CVP water rights or voluntary water transfers from other water rights holders. The proposed project and its alternatives do not reduce the protections for other water right holders.</p> <p>For more information on water rights please see Master Response 32. For information on area of origin please see Master Response 26.</p> <p>Please also see response to comment 2575-7.</p>
2575	9	<p>The SDEIS/RDEIR fails to present the existing conditions of Sacramento Valley groundwater that was omitted in the DEIS/EIR and to correct inaccuracies.</p> <p>There remains an absence of accurate and detailed information that describes the Sacramento Valley groundwater conditions in the SDEIS/RDEIR. The DEIS/EIR stated, "A portion of this applied water, and the remaining 13.9 MAF [million acre-feet] of runoff, is potentially available to recharge the basin and replenish groundwater storage depleted by groundwater pumping. Therefore, except during drought, the Sacramento Valley groundwater basin is 'full,' and groundwater levels recover to pre-irrigation season levels each spring. Historical groundwater level hydrographs suggest that even after extended droughts, groundwater levels in this basin recovered to pre-drought levels within 1 or 2 years following the return of normal rainfall quantities." (p. 7-13)</p> <p>AquAlliance brought the failures in these conclusory statements to light in our previous comments hoping the Lead Agencies would provide decision-makers and the public with important factual data. Sadly, the corrections were not made in the SDEIS/RDEIR. We remind the Lead Agencies that a summary of conditions in the Durham area of Butte County find that while water levels may recover after dry to drought periods with intense use, wells aren't returning to previous levels, but moving steadily in a downward trajectory. [Footnote 26: Buck, Christina 2014. Groundwater Conditions in Butte County.] Additionally, even the Yuba River area, often touted by state and federal agencies as a successful conjunctive use program, takes 3-4 years to recover from groundwater substitution in the south sub-basin [Footnote 27: 2012. The Yuba Accord, GW Substitutions and the Yuba Basin. Presentation to the Accord Technical Committee. (pp. 21, 22)] although the Yuba County Water Agency analysis fails to determine how much river water is sacrificed to achieve the multi-year recharge rate.</p>	<p>The groundwater analysis in the EIR/EIS in the Sacramento Valley is conducted at a regional scale because there are no anticipated changes in groundwater conditions in the Sacramento Valley due to implementation of the proposed project or action alternatives, as described in 2575-7. The referenced sentence in the comment related to "full" groundwater basin conditions is referring to the overall condition of the entire Sacramento Valley groundwater basin. For more information on groundwater please see Chapter 7 of the Final EIR/EIS.</p>
2575	10	<p>More examples that contradict long-term predictions of "full" and "recovered" groundwater basins are found in the most current DWR maps. [Footnote 28:</p>	<p>Please see response to comment 2575-9 regarding groundwater analysis.</p>

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		<p>http://www.water.ca.gov/groundwater/data_and_monitoring/northern_region/GroundwaterLevel/gw_level_monitoring.cfm Presented below are tables that use the DWR maps to illustrate maximum and average groundwater elevation decreases for Butte, Colusa, Glenn, and Tehama counties at three aquifer levels in the Sacramento Valley between the Fall of 2004 and 2014.</p> <p>AquAlliance's Table 1 [ATT1] and Table 2 [ATT2] cover 11 years and illustrate what should have been shared with the public in the DEIS/EIR or the SDEIS/RDEIR. They demonstrate maximum and average groundwater elevation decreases for Butte, Colusa, Glenn, and Tehama counties, all the counties believed to overlie the Tuscan Aquifer, at three aquifer levels in the Sacramento Valley between the fall and spring of 2004 and 2014. [Footnote 29: Id.] If the Bureau [of Reclamation] and DWR wanted to truly share significant shorter term data, they should disclose that maximum fall decreases for deep wells between 2013 and 2014 were 3.1 feet for Butte, 42.2 feet for Colusa, 26.9 feet for Glenn, and 15.1 feet for Tehama -- three counties significantly over 10 feet! (Id.)</p> <p>The DWR data clearly present a different picture of the condition of the Sacramento Valley groundwater basin over time than what is provided in the SDEIS/RDEIR. This must be corrected and considered in the NEPA and CEQA process.</p>	
2575	11	[ATT1: Table 1. Fall 2004-2014 DWR Monitoring Results of Groundwater.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-10 regarding the comment related to this table.
2575	12	[ATT2: Table 2. Spring 2004-2014 DWR Monitoring Results of Groundwater.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-10 regarding the comment related to this table
2575	13	<p>The SDEIS/RDEIR fails to correct the lack of disclosure in the DEIS/EIR of direct and indirect groundwater impacts to the Sacramento Valley that would result from expanded north-to south, cross-Delta water transfers.</p> <p>AquAlliance commented previously about the internal BDCP communication from the Department of the Interior that indicates that the purchase of approximately 1.3 MAF [million acre-feet] of water is being planned as a means to make up for flows that would be removed from the Sacramento River by the BDCP tunnels. [Footnote 30: Belin, Lety Summary of Assurances Email, dated 2/25/13.] It is possible that the Twin Tunnels may extract almost two-thirds of the average annual flow from the Sacramento River, which is what creates the need for the 1.3 MAF. The source of the additional water that is integral to the Project was not disclosed or analyzed in the DEIS/EIR nor in the SDEIS/RDEIR. Furthermore, the Lead agencies improperly conclude that, "The analysis of any potential upstream impacts from transfers is not a part of this EIR/EIS and must be covered pursuant to separate laws and regulations once the specific transfer has been proposed." (DEIS/EIR p. 5-77) Neither CEQA nor NEPA permit this approach of segmenting and piecemealing review of the whole of a project. Water transfers are expected to increase and are an integral part of the Project and groundwater substitution transfers are a significant piece of water transfer practices, plans, and programs either directly or indirectly through reservoir reoperation. The deferral to disclose the amount of water that could be transferred, the source of the water, and the impacts from transferring water from the Sacramento Valley are absent. In addition, the SDEIS/RDEIR does not reveal that the current Project is part of multi-decade planning and implementation process to develop groundwater in the Sacramento Valley, to develop a "conjunctive" system for the Sacramento Valley, and to</p>	<p>The proposed project would not significantly impact local water supplies. While groundwater levels could be temporarily lowered in localized areas during the dewatering phases of construction, groundwater would return to pre-pumping levels over the course of several months following the dewatering phase. Mitigation has been proposed to maintain water supplies in areas affected by construction dewatering. Additionally, the lead agencies would relocate and/or replace wells, pipelines, power lines, drainage systems, and other infrastructure that are needed for ongoing agricultural uses and would be adversely affected by project construction or operation. For additional information regarding proposed agricultural mitigation, please see Master Response 18.</p> <p>Construction of the proposed project's facilities will occur in a manner specifically designed to avoid adverse effects on groundwater. As described in Appendix 3C, Table 3C-7, of the 2013 Public Draft EIR/EIS, ponds to store reusable tunnel materials and spoils material would be designed with the invert at least 5 feet above seasonally high groundwater and impervious liners along the invert and interior slopes of the ponds to avoid contamination. The tunneling operation would use biodegradable polymers that would be combined with the excavated soil to allow conveyance of the soil slurry, or reusable tunnel material. The polymers would decompose over time.</p> <p>In some locations within the State, groundwater is regulated through judicial review related to adjudication proceedings in the court system. Many counties and regional agencies, or groups of agencies, have adopted groundwater management plans and/or ordinances. Governor Brown recently signed into law three bills that address groundwater management in California. These bills direct local agencies to develop groundwater management plans and allows the state to monitor and intervene if local agencies fail to do so.</p> <p>For more information regarding groundwater impacts please see Chapter 7 of the Final EIR/EIS.</p>

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		<p>integrate Sacramento Valley groundwater into the state's water supply.</p> <p>With the Sacramento Valley groundwater an intended target, this must be disclosed and analyzed in another re-circulated Draft EIS/EIR.</p>	<p>Ongoing operations of the SWP and CVP are not water transfers, and involve re-diversion of water rights water diverted from upstream rivers. In accordance with the Project Objectives and Purpose and Need (see Chapter 2 of the EIR/EIS), the Existing Conditions, No Action Alternative, and all of the action alternatives would continue the operation of the SWP and CVP in accordance with the existing water rights and regulatory criteria adopted by the State Water Resources Control Board, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife. For more information on water rights issues please see Master Response 32.</p> <p>The SWP and CVP operations do not include use of water generated from groundwater or by groundwater substitution.</p> <p>The EIR/EIS also acknowledges that the use of water transfers between agencies could increase in the future as SWP, CVP, and other surface water supplies are reduced due to climate change, sea level rise, and increased water demand in the Delta watershed, as described in Appendix 1E and Appendix 5D of the EIR/EIS. Because specific agreements have not been identified for water transfers and other non-project voluntary water market transactions, project level analysis of impacts upstream of the Delta is highly speculative and this EIR/EIS does not constitute the CEQA/NEPA coverage required for any specific transaction. Rather, it provides an analysis of how transfers relate to the Proposed Project facilities. Any future water transfers will require separate approvals. The analysis of any potential upstream impacts is not a part of this EIR/EIS and must be covered pursuant to separate laws and regulations once the specific transfer has been proposed.</p> <p>In the description of alternatives as presented in Chapter 3 of the Final EIR/EIS, the increased Delta outflow would be provided by reduction in Delta exports in Alternative 4A and a combination of reduction in Delta exports and releases from Lake Oroville under Alternative 4 H4. Under either of these alternatives, deliveries to water users north of the Delta would increase or be similar as under Existing Conditions, and similar as under the No Action Alternative. Therefore, groundwater pumping in the Sacramento Valley would not increase due to the Project. The increased Delta outflow would not be provided by increased groundwater pumping or water transfers in the alternatives presented in the Final EIR/EIS. Please also see response to comment 2575-9.</p>
2575	14	<p>The Project Description does Not Include all Project Components.</p> <p>The Bureau [of Reclamation] Fails to Disclose Significant Past, Present, and Future Streamflow Depletion:</p> <p>Streamflow depletion is not mentioned at all in the SDEIS/REDIR and it is mentioned sparingly in the DEIS/EIR:</p> <ol style="list-style-type: none"> 1) A citation on page 7-120. 2) The same citation on page 34-16. 3) A description of groundwater substitution transfers on page 1E-3. <ol style="list-style-type: none"> a) "The quantity of surface water available is based on the quantity of groundwater actually pumped less any streamflow depletion losses." b) "Additional groundwater pumping will, to some extent, have an effect on the surface water supply, referred to as streamflow depletion. The impacts of the transfer on streamflow can continue to occur long after the transfer has been completed. If the additional streamflow depletion occurs at a time when excess flow is available, downstream 	<p>The proposed project does not include actions that would change streamflow depletions. Individual groundwater substitution transfers may influence streamflow depletion, an impact of individual transfers that needs to be considered when evaluating the impacts of each transfer. Transfers are not a part of the project, although there may be changes to transfers as a consequence of the project. See Master Response 43 (Water Transfers), and Final EIR/EIS Appendix 1E for more information. Please also see response to comment 2575-13.</p>

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		<p>users are not affected. However, if the depletion occurs at a time when other downstream users could divert that water, the transfer could have an impact on other legal users."</p> <p>c) "Accounting for the impact of the transfer on streamflow is essential to determining the amount of real water available for transfer and to avoid injury to downstream water users. The amount and timing of the impacts, however, cannot be directly measured but can be estimated through the use of mathematical models. Although the work required to accurately assess the appropriate streamflow depletion factor for a particular transfer can be time-consuming and costly, the assessment of an appropriate streamflow depletion factor is necessary to protect other legal users of water."</p>	
2575	15	<p>Streamflow depletion is not mentioned at all in the SDEIS/REDIR and it is mentioned sparingly in the DEIS/EIR:</p> <p>A more in-depth discussion of groundwater substitution transfers on page 1E-8.</p> <p>"Precipitation and streamflow are the source of recharge for groundwater basins. A change in the amount of groundwater pumping affects both the groundwater and surface water resources. The timing and magnitude of the impacts to the surface water supply varies from place to place depending on a number of factors, including geology, hydrology, regional groundwater use, and depth and construction of the wells among others. Groundwater pumping will result in some level of streamflow depletion, the effect of which may extend well beyond the area from which transfer is made, depending on the specifics of the transfer. It is important that the impacts to streamflow from increased groundwater pumping are accounted for in the transfer to prevent injury to other legal users of water. Streamflow depletion cannot be directly measured and must be estimated using a technical analysis including groundwater modeling considering the specific conditions of the transfer and hydrogeology."</p>	See response to comment 2575-14.
2575	16	<p>Streamflow depletion is not mentioned at all in the SDEIS/REDIR and it is mentioned sparingly in the DEIS/EIR:</p> <p>A description of groundwater substitution transfers on page 1E-10.</p> <p>"The amount of water available for transfer is determined by metering the quantity of water pumped and applying a streamflow depletion factor based on an analysis of the specific wells and geology of the groundwater basin."</p>	See response to comment 2575-14.
2575	17	<p>Streamflow depletion is not mentioned at all in the SDEIS/REDIR and it is mentioned sparingly in the DEIS/EIR:</p> <p>In section "Potential Quantities of Upstream-of-Delta Water for Transfer" in Appendix 5C, the following is found:</p> <p>a) "Groundwater substitution transfers could approach as much as 400,000 acre-feet in any given year prior to allowance for impacts on streamflows. Groundwater substitution supplies are generally subject to a correction factor to adjust for streamflow depletion effects of water transfers in the current year. As the groundwater basins of the Sacramento Valley are pumped, there will be gradual effects on streamflow as the basins recharge over time. In the past few years, an allowance of 12 percent has been assumed as the amount of</p>	See response to comment 2575-14.

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		<p>impact on Delta inflow in the current year." (p. 5C-23)</p> <p>The absence of any meaningful disclosure of past, present, and future groundwater and streamflow depletion in either the DEIS/EIR or the SDEIS/RDEIR underscores once again the completely vacuous attempts by the Lead Agencies to meet NEPA and CEQA requirements. AquAlliance presents a figure that is a comprehensive picture of the destructive past and present impacts to the groundwater and streams of the Sacramento River that should have been revealed in the NEPA and CEQA documents for this project. It encapsulates all that the Lead Agencies seek to obfuscate from the public and policymakers.</p>	
2575	18	[ATT3: Graph showing Comparison of Groundwater Pumping and Accretion, Sacramento Valley, 1920s to 2009.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-19 regarding the comment related to this graph.
2575	19	<p>The figure [ATT3] was created for AquAlliance for comments on the DEIS/EIR for the 10-Year Water Transfer Program in 2014 by Kit Custis who explains:</p> <p>"Two recent reports on the condition of groundwater in the Sacramento Valley are provided by the Northern California Water Association (NCWA, 2014a and 2014b). Tables 3-6, 3-7, and 3-8 in the NCWA technical supplement report (2014b; Exhibits 10.5a to 10.5c) provide water balance information for the Sacramento Valley for the same three decades as Brush and others (2013a). The NCWA tables separate the water balance elements into three types, land uses (Table 3-6), streams and rivers (Table 3-7), and groundwater (Table 3-8). The values of the change in groundwater storage given in Table 3-8 are similar to those given by Brush and others (2013a).</p> <p>The NCWA technical supplement report (2014b) also provides additional information on the 1922 to 2009 water balance through the use of graphs and bar charts. Figures 3-22 and 3-24 (Exhibits 10.6c and 10.6d) provide graphs of simulated estimates of annual groundwater pumping in the Sacramento Valley and the annual stream accretion. Positive stream accretion occurs when groundwater discharges to surface water, negative when groundwater is recharged. Other graphs include simulated deep percolation, Figures 3-26 and 3-27 (Exhibits 10.6e and 10.6f), annual diversions, Figures 3-19 and 3-20 (Exhibits 10.6a and 10.6b), and relative percentages of surface water to groundwater supplies, Figure 3-29 (10.6g).</p> <p>The NCWA technical supplement report (2014b) notes in Sections 3.8 and 3.8.4 that negative changes in groundwater storage . . . suggest that the groundwater basin is under stress and experiencing overdraft in some locations. Review of the Sacramento Valley water balance, as characterized based on C2VSim R374 and summarized in Tables 3-6 through 3-8 reveals substantial changes in water balance parameters over time that affect overall groundwater conditions. . . . Over time, it appears that losses from surface streams have increased as a result of declining groundwater levels. The declining levels result from increased demand for groundwater as a source of supply without corresponding increases in groundwater recharge. (page 41) A contributing factor to the decrease in accretions to rivers and streams over the last 90 years is that deep percolation of surface water supplies (and other forms of recharge) has not increased in a manner that offsets increased groundwater pumping. (page 48)</p> <p>The simulated groundwater pumping graph in NCWA Figure 3-22 and stream accretion graph in NCWA Figure 3-24 were combined into one graph by scaling and adjusting their axes (Exhibits 10.7). The vertical scales of these two graphs were adjusted so that a zero</p>	Please see response to comment 2575-9 regarding groundwater analysis. Please also see response to comment 2575-13 for more information on groundwater impacts.

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		<p>value of stream accretion aligned with 1.5 million acre-feet (MAF) of annual groundwater pumping. This alignment was done to reflect the fact that in the early 1920s, groundwater pumping was approximately 0.5 MAF per year (MAFY) while stream accretion was approximately 1.0 MAFY. As shown in the combined graph, stream accretion generally decreases at approximately the same rate as groundwater pumping increases. Thus, at a point of no appreciable groundwater pumping, pre 1920s, the total long-term average annual stream accretion was likely 1.5 MAF, based on the C2VSim simulations.</p> <p>Drawn on top of the stream depletion and groundwater pumping graphs are several visually fit, straight trend lines. These lines, which run from 1940 to the mid-1970s and the late 1980s to mid-1990s, are mirror images reflected around the horizontal 0 accretion axis. Information provided at the bottom of the composite graph was taken from NCWA Tables 3-7 and 3-8 (Exhibits 10.5b and 10.5c). The slope of the trend line from 1940 to the mid-1970s is approximately (+-) 27,000 AFY, and (+-) 85,000 AFY in the late 1980s to the mid-1990s; a 3-fold increase in slope. After the mid-1990s the slope of groundwater pumping flattens to be similar to that of the 1940s-mid-1970s, while the stream depletion line became almost flat, i.e., no change in rate of accretion. The reason for the stream depletion rate being flat is unknown, but there are several factors that could contribute to a fixed rate of stream accretion.</p> <p>First, after depleting 1.5 MAFY from the Sacramento Valley streams, the surface waters may not be able to provide much more, at least no increase to match the pumping. Second, this may also be a consequence of the model design because the number of streams simulated was limited. Third, the model's grid may not extend out far enough to encompass all of the streams that contribute to groundwater recharge. More information on the areas of where streams gain and lose in the Sacramento Valley is needed to determine if there are any sections of stream, gaining or losing, that might still have the ability to interact at a variable rate in the future, i.e., during and after the 10-year groundwater substitution transfer project.</p> <p>A third graph is drawn on the composite accretion-pumping graph in Exhibit 10.7 that shows the C2VSim simulated cumulative change in groundwater storage for the Sacramento Valley from 1922 to 2009. This graph was taken from Figure 35 of Brush and others, 2013bn (Exhibit 10.4). A straight trend line with a negative slope of approximately -163,417 AFY is drawn on top of the third graph, which is the value for average annual change in storage from 1922 to 2009 given in Table 10 of Brush and others (2013a; Exhibit 6.3a) for the seven subregions of the Sacramento Valley. The selected graph of the cumulative change in groundwater storage is one of three available.</p> <p>The graph of cumulative change in groundwater storage for the Sacramento Valley in Figure 35 differs from the graph in Figure 83 in Brush and others (2013a; Exhibit 10.3) and in Figure B9 of Faunt (ed., 2009; Exhibit 10.2a). Both of Figure 83 and Figure B9 show a gain in groundwater storage with their Sacramento Valley graphs lying generally above the horizontal line of zero change in storage. The cumulative change in groundwater storage graph from Figure 35 (Exhibit 10.4) was selected because:</p> <ul style="list-style-type: none"> -its slope is a close match for the average annual change in storage from 1922 to 2009 of -163,417 AFY given in Table 10, 	

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		<p>-the values for change in groundwater storage in the three selected decades are all negative (Table 3-8, NCWA, 2014b), which the other two graphs don't clearly indicate,</p> <p>-the calculation of average annual change in groundwater storage from 1962 to 2003 shown in Table B3 and Figures B10-A and B10-B of Faunt (ed., 2009) are negative, which conflicts with Figures B9 and 83, and</p> <p>-change in DWR groundwater elevation maps from spring 2004 to spring 2014 (Exhibit 3.1, 3.2 and 3.3) suggest that there are significant regions of the Sacramento Valley that have lost groundwater storage, which suggests that the current condition is one of a loss in storage rather than a gain.</p> <p>Additional review and analysis of the changes in groundwater storage in the Sacramento Valley is needed. Any additional review of changes in groundwater storage in the Sacramento Valley should consider the recent changes in groundwater elevations such as those shown in DWR (2014b) for WYs 2004 to 2014, and Figures 2-4 and 2-5 of NCWA, 2014b (Exhibit 10.8 and 10.9), as well as other studies such as the support documents for the regional IRWMPs [Integrated Regional Water Management Plans]."</p> <p>[Supporting material found in AquaAlliance's Tables 1 and 2 above [ATT1, ATT2].]</p>	
2575	20	<p>The deficiencies in the SDEIS/RDEIR and DEIS/EIR strike at the core of our [AquAlliance's] critique, which views the CVP and the SWP as once-upon-a-time operating within the law, albeit with more water on paper than could ever be available, until the limits of hydrology caused the Agencies and some of their contractors to look for tools to exploit the law -- and the hydrology -- of California. The CVP and SWP have extended water far from the areas of origin for agricultural, urban, and industrial uses. In so doing, particularly with paper water [Footnote 31: C-WIN [California Water Impact Network], et al, 2012. Testimony on Water Availability Analysis for Trinity, Sacramento, and San Joaquin River Basins Tributary to the Bay-Delta Estuary.], the state and federal governments have facilitated a destructively unrealistic demand for water.</p> <p>Ever willing to destroy natural systems to meet demand for profit, the San Joaquin River dried up and subsidence caused by groundwater depletion in the San Joaquin Valley is even cracking water conveyance facilities. [Footnote 32: Sneed, et al., 2012. Abstract: Renewed Rapid Subsidence in the San Joaquin Valley, California. "The location and magnitude of land subsidence during 2006-10 in parts of the SJV were determined by using an integration of Interferometric Synthetic Aperture Radar (InSAR), Global Positioning System (GPS), and borehole extensometer techniques. Results of the InSAR measurements indicate that a 3,200-km^2 area was affected by at least 20 mm of subsidence during 2008-10, with a localized maximum subsidence of at least 540 mm. Furthermore, InSAR results indicate subsidence rates doubled during 2008. Results of a comparison of GPS, extensometer, and groundwater-level data suggest that most of the compaction occurred in the deep aquifer system, that the critical head in some parts of the deep system was exceeded in 2008, and that the subsidence measured during 2008-10 was largely permanent." Conference presentation at Water for Seven Generations: Will California Prepare For It?, Chico, CA.]</p> <p>Added to this are conjunctive use water sales and programs where the Agencies facilitate and their contractors implement river water sales and pump groundwater to continue crop production. The continual, long-term groundwater overdraft in the San Joaquin Valley, the expansion of new permanent crops in both the San Joaquin and Sacramento valleys, and</p>	<p>See response to comment 2575-14 regarding streamflow. For more information on groundwater impacts please see response to comment 2575-13. Information on water transfers can be found in Master Response 43.</p> <p>All of the alternatives evaluated in the EIR/EIS would only divert water under existing water rights which were issued to DWR and Reclamation by the State Water Board with consideration for senior water rights and Area of Origin laws and requirements. The proposed project does not seek any new water rights nor reduction in total water rights issued to DWR and Reclamation. For more information on water rights and area of origin please see Master Response 32 and 26, respectively.</p>

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		groundwater substitution transfers by CVP and SWP contractors all cause streamflow depletion. Failing to disclose how the CVP and SWP have historically caused streamflow depletion is a major omission that must be corrected and included in a recirculated DEIS/EIR.	
2575	21	In regards to the San Joaquin groundwater basin, the DEIS/DEIR stated that, "Long-term groundwater production throughout this basin has lowered groundwater levels beyond what natural recharge can replenish." (p. 7-4) It is no surprise that the relentless extraction of groundwater in the San Joaquin Valley has halted natural recharge, but this mild understatement of fact masks the tremendous devastation that has occurred there. "Mining" would provide a more accurate depiction of what has transpired over 80+ years instead of "production." The USGS [U.S. Geological Survey] exposes this form of groundwater exploitation in the San Joaquin and Santa Clara Valleys (1999) in Circular 1182 entitled Part I, "Mining Ground Water." Current research by Michelle Sneed expands on the impacts from groundwater mining in the San Joaquin by disclosing the extent of historic and current subsidence levels [Footnote 33: Sneed, Michelle et al. 2013. Land Subsidence along the Delta-Mendota Canal in the Northern Part of the San Joaquin Valley, California. http://pubs.usgs.gov/sir/2013/5142/], as does work by Devin Galloway and Francis S. Riley. [Footnote 34: Galloway, Devin and Francis S. Riley, unknown date. San Joaquin Valley: Largest human alteration of the Earth's surface.]	The discussion related to groundwater elevations in the San Joaquin Valley in the Existing Conditions/Affected Environment section of Chapter 7 is presented for background information. The CEQA analysis is based upon the comparison of modeling results for the alternatives to the Existing Conditions. The NEPA analysis is based upon the comparison of modeling results for the alternatives to the future No Action Alternative. The EIR/EIS does not provide mitigation measures for historical conditions or Existing Conditions. For information on groundwater impacts please see response to comment 2575-13.
2575	22	Without explanation or apology, the DEIS/EIR omitted current and historic analysis, mentioned "overall subsidence" in the Mendota area of 28 feet (without a citation or timeframe), and then recounted older research: "Most San Joaquin Valley subsidence is thought to have been caused primarily by deep aquifer system pumping during the 1950s and 1960s, but is considered to have largely abated since 1974 because of the development of more reliable agricultural surface water supplies from the Delta-Mendota Canal and Friant-Kern Canal (U.S. Geological Survey 1999)." The absence of current scientific research regarding groundwater mining and subsidence in the DEIS/EIR and the failure to correct it in the SDEIS/RDEIR leaves the documents exceedingly deficient under CEQA and NEPA and the agencies exposed to charges of incompetence.	The Federal and State Lead Agencies have done their best to make the EIR/EIS for the proposed project as fair, objective, and complete as possible. The Lead Agencies are following the appropriate legal process and are complying with CEQA and NEPA in preparing the EIR/EIS for the proposed project. These agencies readily acknowledge, however, that the document addresses a number of topics for which some scientific uncertainty exists. Such uncertainty can give rise to differing opinions as to what conclusions may be reached. Please see response to comment 2575-21.
2575	23	Cumulative Impacts: The Ninth Circuit Court makes clear that NEPA mandates "a useful analysis of the cumulative impacts of past, present and future projects." Muckleshoot Indian Tribe v. U.S. Forest Service, 177 F.3d 800, 810 (9th Cir. 1999). "Detail is required in describing the cumulative effects of a proposed action with other proposed actions." Id. CEQA further states that assessment of the project's incremental effects must be "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (CEQA Guidelines [Section] 15065(a)(3).) "[A] cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts." (CEQA Guidelines [Section] 15065(a)(3).) An EIR must discuss significant cumulative impacts. CEQA Guidelines [Section] 15130(a). Cumulative impacts are defined as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.	Section 5 of the RDEIR/SDEIS presents a complete cumulative analysis, revised since the Public Draft EIR/S. For additional information on cumulative impacts please see Master Response 9. Please also see FEIR/EIS Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative and Cumulative Impact Conditions, for details on the approach and projects used in the cumulative impact assessment.

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		<p>CEQA Guidelines [Section] 15355(a). "[I]ndividual effects may be changes resulting from a single project or a number of separate projects. CEQA Guidelines [Section] 15355(a). A legally adequate cumulative impacts analysis views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable future projects whose impacts might compound or interrelate with those of the project at hand. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. CEQA Guidelines [Section] 15355(b). The cumulative impacts concept recognizes that "[t]he full environmental impact of a proposed . . . Action cannot be gauged in a vacuum." Whitman v. Board of Supervisors (1979) 88 Cal. App. 3d 397, 408 (internal quotation omitted).</p>	
2575	24	<p>In assessing the significance of a project's impact, the Bureau [of Reclamation] must consider "[c]umulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement." 40 C.F.R. [Section] 1508.25(a)(2). A "cumulative impact" includes "the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." Id. [Section] 1508.7. The regulations warn that "[s]ignificance cannot be avoided by terming an action temporary or by breaking it down into small component parts." Id. [Section] 1508.27(b)(7). An environmental impact statement should also consider "[c]onconnected actions." Id. [Section] 1508.25(a)(1). Actions are connected where they "[a]re interdependent parts of a larger action and depend on the larger action for their justification." Id. [Section] 1508.25(a)(1)(iii). Further, an environmental impact statement should consider "[s]imilar actions, which when viewed together with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography." Id. [Section] 1508.25(a)(3).</p>	<p>Please see response to comment 2575-23 regarding the cumulative impacts analysis. Also see Master Response 8 regarding the project being analyzed as a whole.</p>
2575	25	<p>The Project is dependent on the hydrology of the Delta watershed to implement the Draft Plan. We [AquAlliance] pointed out in comments on the DEIS/EIR and again here because the issue hasn't been corrected in the SDEIS/RDEIR, that the cumulative impact analysis is abysmal as it fails to consider other past, present and reasonably foreseeable future actions in the Delta watersheds by deferring analysis to a future day.</p>	<p>Please see response to comment 2575-23 regarding the cumulative impact analysis.</p> <p>The CALSIM II model used in the EIR/EIS analysis uses an 82-year historical hydrologic sequence to simulate a wide range of hydrologic conditions that could occur in the future, including extended wet periods and dry/critical dry periods. In addition, the CALSIM II model includes assumptions for climate change, sea level rise, and population growth conditions that could occur in the future with or without the project. The evaluation is a comparative analysis to determine the incremental differences between conditions under the action alternatives and conditions under the Existing Conditions and the No Action Alternative. The analyses were not conducted to identify specific values or to respond to short-term emergency situations, such as the ongoing drought. Separate studies have been and will continue to be prepared when water allocations, water quality criteria, and other criteria are modified in emergencies.</p> <p>The cumulative impact analysis recognizes that future surface water storage, groundwater storage, water transfers, and other projects are still undergoing evaluation or review and are considered in a qualitative manner (please see Master Response 37 regarding storage, Master Response 43 regarding water transfers, and Appendix 1C, Demand Management Measures, EIR/EIS). While these elements are not proposed as part of the proposed project and analyzed quantitatively in the EIR/EIS, the Lead Agencies recognize that they are important tools in managing California's water resources.</p>
2575	26	<p>AquAlliance again submits a partial list of Sacramento River watershed programs, plans, and projects in which the agencies have participated or funded, that, at a minimum, should have been presented in the DEIS/EIR or corrected in the SDEIS/RDEIR for cumulative impact</p>	<p>Please see response to comment 2575-23 regarding the cumulative impact analysis. Please also see Master Response 1, Environmental Baselines.</p>

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		<p>discussion, and better yet, analyzed to comply with CEQA and NEPA:</p> <p>-In 2009, the Bureau [of Reclamation, USBR] approved a 1-year water transfer program under which a number of transfers were made. Regarding NEPA, the Bureau issued a FONSI [Finding of No Significant Impact] based on an EA [Environmental Assessment].</p> <p>-In 2010, the Bureau approved a 2-year water transfer program (for 2010 and 2011). No actual transfers were made under this approval. Regarding NEPA, the Bureau again issued a FONSI based on an EA.</p> <p>-The Bureau planned 2012 water transfers of 76,000 AF [acre-feet] of CVP water all through groundwater substitution. [Footnote 35: USBR 2012. Memo to the Deputy Assistant Supervisor, Endangered Species Division, Fish and Wildlife Office, Sacramento, California regarding Section 7 Consultation.]</p> <p>-In 2013, the Bureau approved a 1-year water transfer program, again issuing a FONSI based on an EA. The EA incorporated by reference the environmental analysis in the 2010-2011 EA.</p> <p>-The Bureau and SLDMWA [San Luis and Delta-Mendota Water Authority]'s 2014 Water Transfer Program proposed transferring up to 91,313 AF under current hydrologic conditions and up to 195,126 under improved conditions. This was straight forward, however, when attempting to determine how much water may come from fallowing or groundwater substitution during two different time periods, April-June and July-September, the reader was left to guess. [Footnote 36: The 2014 Water Transfer Program's EA/MND [Mitigated Negative Declaration] was deficient in presenting accurate transfer numbers and types of transfers. The numbers in the "totals" row of Table 2-2 presumably should add up to 91,313. Instead, they add up to 110, 789. The numbers in the "totals" row of Table 2-3 presumably should add up to 195,126. Instead, they add up to 249,997. Both Tables 2-2 and 2-3 have a footnote stating: "These totals cannot be added together. Agencies could make water available through groundwater substitution, cropland idling, or a combination of the two; however, they will not make the full quantity available through both methods. Table 2-1 reflects the total upper limit for each agency."</p> <p>These closely related projects impact the same resources, are not accounted for in the environmental baseline, and must be considered as cumulative impacts.</p>	<p>Regarding water transfers, please see Master Response 43.</p>
2575	27	<p>Yuba Accord:</p> <p>The relationship between the Projects and the Lower Yuba River Accord is not found in the DEIS, but is illuminated in a 2013 Environmental Assessment. "The Lower Yuba River Accord (Yuba Accord) provides supplemental dry year water supplies to state and Federal water contractors under a Water Purchase Agreement between the Yuba County Water Agency and the California Department of Water Resources (DWR). Subsequent to the execution of the Yuba Accord Water Purchase Agreement, DWR and The San Luis & Delta-Mendota Water Authority [SLDMWA] (Authority) entered into an agreement for the supply and conveyance of Yuba Accord water, to benefit nine of the Authority's member districts (Member Districts) that are SOD [south of Delta] CVP water service contractors." [Footnote 37: Bureau of Reclamation [the Bureau], 2013. Storage, Conveyance, or Exchange of Yuba</p>	<p>The Yuba Accord water transfer program is not a part of the proposed project. The impacts of that water transfer program were evaluated in depth in its EIS/EIR at http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=2549. YCWA evaluates the groundwater hydrology frequently during each year, and meets with all eight of its member units frequently to assess the state of groundwater levels and determine whether it will participate in any groundwater substitution activities within its basin each year. Also see response to comment 2575-28 for more information.</p> <p>See Master Response 43 regarding water transfers and the proposed project.</p>

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		<p>Accord Water in Federal Facilities for South of Delta Central Valley Project Contractors.]</p> <p>In a Fact Sheet produced by the Bureau, it provides some numerical context and more of DWR's involvement by stating, "Under the Lower Yuba River Accord, up to 70,000 acre-feet [af] can be purchased by SLDMWA members annually from DWR. This water must be conveyed through the federal and/or state pumping plants in coordination with Reclamation and DWR. Because of conveyance losses, the amount of Yuba Accord water delivered to SLDMWA members is reduced by approximately 25 percent to approximately 52,500 acre-feet. Although Reclamation is not a signatory to the Yuba Accord, water conveyed to CVP contractors is treated as if it were Project water." [Footnote 38: Bureau of Reclamation, 2013. Central Valley Project (CVP) Water Transfer Program Fact Sheet.] However, the Yuba County Water Agency (YCWA) may transfer up to 200,000 under Corrected Order WR 2008-0014 for Long-Term Transfer and, "In any year, up to 120,000 af of the potential 200,000 af transfer total may consist of groundwater substitution. (YCWA-1, Appendix B, p. B-97.)." [Footnote 39: State Water Resources Control Board, 2008. ORDER WR 2008-0025]</p>	
2575	28	<p>Potential cumulative impacts from the Project and the YCWA [Yuba County Water Agency] Long-Term Transfer Program from 2008-2025 are not disclosed or analyzed in the SDEIS/RDEIR or the DEIS/EIR. Moreover, the 2015-2024 Water Transfer Program could transfer up to 600,000 AF [acre-feet] per year through the same period that the YCWA Long-Term Transfers are potentially sending 200,000 AF into and south of the Delta. How these two projects operate simultaneously could have a very significant impact on the environment and economy of the Feather River and Yuba River's watersheds and counties as well as the Delta. The involvement of Browns Valley Irrigation District and Cordua Irrigation District in both long-term programs must also be considered. This must be analyzed and presented to the public in a revised DEIS/EIR.</p>	<p>The Yuba transfers, along with Browns Valley ID and Cordua ID are included in the 600,000 AF estimated available water supply as shown at the end of Appendix 5C of the Final EIR/EIS.</p> <p>See also response to 2575-27 regarding the Yuba Accord and water transfers.</p>
2575	29	<p>Not available in the DEIS/EIR or corrected in the SDEIS/RDEIR is disclosure of any issues associated with the YCWA [Yuba County Water Agency] transfers that have usually been touted as a model of success. The YCWA transfers have encountered troubling trends for over a decade that, according to the draft Environmental Water Account (EWA) EIS/EIR, are mitigated by deepening domestic wells (2003 p. 6-81). While digging deeper wells is at least a response to an impact, it hardly serves as a proactive measure to avoid impacts. Additional information finds that it may take 3-4 years to recover from groundwater substitution in the south sub-basin [Footnote 40: 2012. The Yuba Accord, GW Substitutions and the Yuba Basin. Presentation to the Accord Technical Committee. (pp. 21, 22)], although YCWA's own analysis fails to determine how much river water is sacrificed to achieve the multi-year recharge rate. None of this is found in the EWA EIS/EIR. What is found in the EWA EIS/EIR is that even the inadequate SACFEM2013 modeling reveals that it could take more than six years in the Cordua ID area to recover from multi-year transfer events, although recovery is not defined (pp. 3.3-69 to 3.3-70). This is a very significant impact that isn't addressed individually or cumulatively.</p>	<p>See response to comment 2575-27 and response to comment 2575-28 regarding the Yuba Accord and water transfers.</p>
2575	30	<p>The Lead Agencies Have Failed to Consider the Cumulative Impacts of Other Groundwater Development and Surface Water Diversions Affecting the Sacramento Valley:</p> <p>In addition to the improper segmentation evident in the DEIS/EIR and continuing through the SDEIS/RDEIR, the assessment of environmental impacts is further deficient because the Bureau [of Reclamation] has failed to consider the cumulative impacts of area of origin</p>	<p>Please see response to comment 2575-23 regarding the cumulative impact analysis. For information on area of origin and operational criteria please see Master Response 26 and Master Response 28, respectively. For information on water transfers please see Master Response 43.</p>

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		extraction when taken in conjunction with other projects proposed for the development of groundwater and surface water.	
2575	31	<p>General Plans:</p> <p>The General Plans of the counties and cities in the Sacramento Valley must be considered as well as the agricultural crop and land use changes that have taken and are taking place. Lastly, we must emphasize again that existing conditions in the Sacramento River watershed that is so crucial to California's population, economy, and environment, and therefore the Project, must be more accurately understood and described, so that impacts may be more accurately assessed from the Project.</p>	For information regarding general plans please see Master Response 11. For information on Agricultural Resources, please see Chapter 14 of the Final EIR/EIS.
2575	32	The DEIS/EIR and SDEIS/RDEIR fail to reveal many more programs, plans and projects to develop water transfers in the Sacramento Valley, to develop a "conjunctive" system for the region, and to place water districts in a position to integrate the groundwater into the state water supply. BDCP, now the WaterFix or Twin Tunnels Project, is one of those plans that the Lead Agencies, water districts, and others have been pursuing and developing for many years.	<p>The proposed project is not a comprehensive, statewide water plan, but is instead aimed at addressing many complex and long-standing issues related to the operations of the SWP and CVP in the Delta, including reliability of exported supplies. For more information on the project's purpose and need please see Master Response 3 and Chapter 2 of the Final EIR/EIS. For information on demand management please see Master Response 6.</p> <p>Please see the Final EIR/EIS, Appendix 5C, and Master Response 43 for information on water transfers.</p>
2575	33	<p>Biggs-West Gridley:</p> <p>The Biggs-West Gridley Water District Gray Lodge Wildlife Area Water Supply Project, a Bureau [of Reclamation] project, is not mentioned anywhere in the Vegetation and Wildlife or Cumulative Impacts sections. [Footnote 41: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=15381] This water supply project is located in southern Butte County where Western Canal WD, Richvale ID, Biggs-West Gridley WD, and Butte Water District actively sell water on a regular basis, yet impacts to GGS [giant garter snakes] from this project are not disclosed. This is a serious omission that must be remedied in a recirculated DEIS/EIR.</p>	Butte County is outside of the plan area. Please see Chapter 1 of the Final EIR/S for more information on the plan area. For information regarding cumulative impacts please see response to comment 2575-23.
2575	34	<p>Court settlement discussions between the Bureau [of Reclamation] and Westlands Water District over provisions of drainage service, Case #CV-F-88-634-LJO/DLB, will further strain the already over allocated Central Valley Project with the following condition:</p> <p>A permanent CVP contract for 890,000 acre-feet of water a year exempt from acreage limitations.</p>	<p>The court settlement referred to in this comment will require Congressional approval prior to implementation. If the settlement is approved, the contract amount for Westlands Water District would be similar to the values included in the CALSIM II modeling used to prepare this EIR/EIS. In the San Joaquin Valley, the CALSIM II model only simulates SWP and CVP water deliveries, and not additional water uses, including groundwater. Historically, Westlands Water District had not irrigated over 100,000 acres of land within their service area to reduce water quality issues. Historical overall water demands were considered by DWR and Reclamation in the development of water demands that are included in all planning documents and included in the U.S. Geological Survey CVHM model. Therefore, changes under this Court settlement would not result in changes that could be determined by the CALSIM II and CVHM models.</p> <p>Please see response to comment 2575-23 regarding the cumulative impact analysis.</p>
2575	35	<p>Court settlement discussions between the Bureau [of Reclamation] and Westlands Water District over provisions of drainage service, Case #CV-F-88-634-LJO/DLB, will further strain the already over allocated Central Valley Project with the following condition:</p> <p>Minimal land retirement consisting of 100,000 acres; the amount of land Westlands claims it has already retired (115,000 acres) will be credited to this final figure. Worse, the Obama Administration has stated it will be satisfied with 100,000 acres of "permanent" land</p>	See response to comment 2575-35 regarding the court settlement referred to in this comment.

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		retirement.	
2575	36	<p>Court settlement discussions between the Bureau [of Reclamation] and Westlands Water District over provisions of drainage service, Case #CV-F-88-634-LJO/DLB, will further strain the already over allocated Central Valley Project with the following conditions:</p> <p>Forgiveness of nearly \$400 million owed by Westlands to the federal government for capital repayment of Central Valley Project debt.</p>	See response to comment 2575-35 regarding the court settlement referred to in this comment.
2575	37	Five-Year Warren Act Contracts for Conveyance of Groundwater in the Tehama-Colusa and Corning Canals -- Contract Years 2013 through 2017 (March 1, 2013, through February 28, 2018).	Please see response to comment 2575-23 regarding the cumulative impact analysis.
2575	38	<p>Additional past, current, and future projects with cumulative impacts upon groundwater and surface water resources affected by the Project:</p> <p>-The DWR Dry Year Purchase Agreement for Yuba County Water Agency water transfers from 2015-2025 to SLDMWA [San Luis and Delta-Mendota Water Authority]. [Footnote 42: SLDMWA Resolution # 2014 386</p> <p>http://www.sldmwa.org/OHTDocs/pdf_documents/Meetings/Board/Prepacket/2014_1106_Board_PrePacket.pdf</p> <p>-GCID [Glenn Colusa Irrigation District]'s Stony Creek Fan Aquifer Performance Testing Plan to install seven production wells in 2009 to extract 26,530 af [acre-feet] of groundwater as an experiment that was subject to litigation due to GCID's use of CEQAs exemption for research.</p> <p>-Installation of numerous production wells that are used to facilitate water transfers in the area of origin, many with the use of public funds such as Butte Water District [Footnote 43: Prop 13. Ground water storage program: 2003-2004 Develop two production wells and a monitoring program to track changes in ground.], GCID, Anderson Cottonwood Irrigation District [ACID] [Footnote 44: 'The ACID Groundwater Production Element Project includes the installation of two groundwater wells to supplement existing district surface water and groundwater supplies.'</p> <p>http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=8081], and Yuba County Water Authority [Footnote 45: Prop 13. Groundwater storage program 2000-2001: Install eight wells in the Yuba-South Basin to improve water supply reliability for in-basin needs and provide greater flexibility in the operation of the surface water management facilities. \$1,500,00.], among others.</p> <p>-GCID's 10-Wells Project proposes to install five new production wells and continue operating five additional production wells during dry and critically dry years for 8.5 months from approximately February 15-March 15 and April 1-November 15. The annual, maximum, cumulative total pumping is 28,500 af and is more water than the annual use of the Chico district of California Water Service Company that serves over 100,000 people. [Footnote 46: California Water Service Company 2010 Urban Water Management Plan Chico-Hamilton City District, p. 32.]</p>	Cumulative impact analyses for groundwater and surface water are included in Chapters 7 and 6 of this Final EIR/EIS. Cumulative projects presented in those analyses are those projects that when combined with action alternatives could result in a cumulative effect on groundwater or surface water resources. Because the action alternatives would not have significant effects on groundwater or surface water resources north of the Delta, the cumulative analyses focus on effects in the Delta where impacts for the action alternatives have been identified. For surface water effects, the CALSIM modeling does included assumptions about future levels of demand that are incorporated into the no action alternatives and action alternatives that can effect surface water flow results for the action alternatives. For more information please see response to comment 2575-23.
2575	39	[ATT4: Department of Water Resources California Water Commission Meeting notes, March 19, 2014. "How are DWR's current groundwater efforts in alignment with the Governor's	The comment describes an attachment to the comment letter. The attachment does not raise any additional issues related to the environmental analysis in the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS that are not

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		Water Action Plan and DWR's Drought Management structure?"]	already addressed in the comment referencing the attachment or the Final EIR/EIS. Information on drought can be found in Master Response 47.
2575	40	[ATT5: Initial Study and Proposed Negative Declaration for Option Agreement Between Glenn-Colusa Irrigation District, San Luis and Delta-Mendota Water Authority, and the United States Bureau of Reclamation for 2008 Operations, and Related Forbearance Program. Glenn-Colusa Irrigation District.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-4 regarding the comment referencing this attachment.
2575	41	[ATT6: Initial Study and Proposed Negative Declaration for Western Canal Water District 2012 Water Transfer Program. February 2012. Lead Agency: Western Canal Water District.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-4 regarding the comment referencing this attachment.
2575	42	[ATT7: "Groundwater/Conjunctive Management, Or, Why is groundwater recharge so important?" Printed presentation slides. California Water Commission. September 14, 2011.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-5 regarding the comment referencing this attachment.
2575	43	[ATT8: "Renewed Rapid Subsidence in the San Joaquin Valley, California" by Michelle Sneed, Mike Solt, and Justin Brandt. U.S. Geological Survey.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-20 regarding the comment referencing this attachment.
2575	44	[ATT9: "Santa Clara Valley, California: A case of arrested subsidence" by S.E. Ingebritsen and David R. Jones. U.S. Geological Survey.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-21 regarding the comment referencing this attachment.
2575	45	[ATT10: "San Joaquin Valley, California: Largest human alteration of the Earth's surface" by Devin Galloway and Francis S. Riley. U.S. Geological Survey.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-21 regarding the comment referencing this attachment.
2575	46	[ATT11: "Comments on the Draft Environmental Assessment and Findings of No Significant Impact for the 2010-2011 Water Transfer Program." January 19, 2010 letter from AquAlliance, California Sportfishing Protection Alliance, and California Water Impact Network to Brad Hubbard of Reclamation and Dean Messer of DWR.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-4 regarding comment related to this attachment.
2575	47	[ATT12: Workshop notes -- "Testimony on Water Availability Analysis for Trinity, Sacramento and San Joaquin River Basins Tributary to the Bay-Delta Estuary," submitted by Tim Stroshane of California Water Impact Network and on behalf of California Sportfishing Protection Alliance and AquAlliance on October 26, 2012.]	The comment describes an attachment to the comment letter. Please see responses to comments 2575-8 and 2575-20 regarding comments referencing this attachment.
2575	48	[ATT13: February 2008 Draft Environmental Assessment Option Agreement Between Glenn-Colusa Irrigation District, San Luis and Delta-Mendota Water Authority, and the United States Bureau of Reclamation for 2008 Operations.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-4 regarding comment referencing this attachment.
2575	49	[ATT14: May 21, 2013 letter from Butte County Water and Resource Conservation to Brad Hubbard of Reclamation re: Draft Environmental Assessment and Finding of No Significant Impact for the 2013 CVP Water Transfer program.]	The comment describes an attachment to the comment letter. The attachment does not raise any additional issues related to the environmental analysis in the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS that are not already addressed in the comment referencing the attachment or the Final EIR/EIS. Please see response to comment 2575-4 regarding comment related to this attachment.
2575	50	[ATT15:] Summary: The Bay Area Delta Conservation Plan (BDCP) Draft EIR/EIS [Footnote 1: Throughout this document, the Bay Area Delta Conservation Plan Draft EIR/EIS will be referred to as "the Draft EIR/EIS," in the interest of brevity.] is an exhaustive document, but its emphasis is on quantity instead of quality. The plan is rich with details about how Northern California's	See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.

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		<p>water supplies might be moved south across the Delta, but it is poor in predictive science supporting how the plan would work in practice, and it provides precious little evidence of how much the plan's implementation would actually cost the state's citizens.</p> <p>The term "predictive" is of fundamental importance here, because predictiveness, reproducibility and verifiability are fundamental principles of scientific investigation. The Draft EIR/EIS fails all of these tests of science, and its computational modeling efforts lie well outside the mainstream of accepted practice for numerical simulation of natural and engineered systems. The computational models that lie at the heart of many of the predictions in the Draft EIR/EIS are based on over-simplified idealizations of natural systems such as aquifers, and all too often these models rely on methodologies that have long been superseded by more accurate physical models for predicting the response of geological systems like the Delta and the Central Valley.</p> <p>The people of California deserve at a minimum an open and scientifically accurate accounting of the environmental risks and financial costs of this water transfer apparatus, and the current Draft EIR/EIS provides neither. The plan's authors should return to the drawing board and start again, this time with their efforts founded on the best-available science and engineering principles.</p>	
2575	51	<p>[ATT15:]</p> <p>Representative Technical Details of This Critique:</p> <p>The size of the Draft EIR/EIS numbers in the tens of thousands of pages, so it is impractical to provide a comprehensive critique of that document in only a handful of pages. Therefore, I will list here only a few key concerns where the plan's authors fall short of the mark demanded by the scope of the project and by its potential for environmental and financial harm if the plan proves inaccurate in its predictions.</p>	See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.
2575	52	<p>[ATT15:]</p> <p>Lack of Uncertainty Characterization in the BDCP Draft EIR/EIS:</p> <p>Unfortunately, there is no substantial discussion of model uncertainty in the Draft EIR/EIS. There are plenty of discussions of uncertainty of biological data, of uncertainty due to climate change, and of the difficulty of handling uncertain measures of water supply and quality, but beyond a rudimentary sensitivity analysis of how the results of computational models used in the Draft EIR/EIS respond to changes in key parameters, the topic of model uncertainty is barely addressed (or at least, not addressed where it is easy to find in the tens of thousands of pages in the Draft EIR/EIS). A model for a natural system needs a formal effort to quantify uncertainty, so that the various benefits and costs can be put into perspective. Such an effort is apparently lacking in the Draft EIR/EIS, and the following presents some representative examples of the problems with the approaches outlined in the Draft EIR/EIS:</p> <p>In Chapter 7 (groundwater), it is stated that the CVHM (Central Valley Hydrologic Model) that lies at the heart of many of the most important predictions found in the Draft EIR/EIS was calibrated using trial-and-error methods. First, trial-and-error techniques are technically indefensible in this setting, as they are not even reproducible (i.e., calibration performed by one person will not necessarily yield the same result if performed by another technician),</p>	See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.

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		<p>hence they fail fundamental tests of science, that of reproducibility and verifiability. Formal methods exist for calibrating complex computational models, but there is no readily-apparent indication in the Draft EIR/EIS that any of these standard calibration measures were utilized.</p>	
2575	53	<p>[ATT15:]</p> <p>Lack of Uncertainty Characterization in the BDCP Draft EIR/EIS:</p> <p>Unfortunately, there is no substantial discussion of model uncertainty in the Draft EIR/EIS. There are plenty of discussions of uncertainty of biological data, of uncertainty due to climate change, and of the difficulty of handling uncertain measures of water supply and quality, but beyond a rudimentary sensitivity analysis of how the results of computational models used in the Draft EIR/EIS respond to changes in key parameters, the topic of model uncertainty is barely addressed (or at least, not addressed where it is easy to find in the tens of thousands of pages in the Draft EIR/EIS). A model for a natural system needs a formal effort to quantify uncertainty, so that the various benefits and costs can be put into perspective. Such an effort is apparently lacking in the Draft EIR/EIS, and the following presents some representative examples of the problems with the approaches outlined in the Draft EIR/EIS:</p> <p>Calibration of a model is a necessary condition for its practical use, but it is certainly not a sufficient one: comprehensive sensitivity analyses for all relevant parameters and uncertainty quantification for both the computational model and its associated data should be developed before a model can be determined as sufficiently robust for practical use in society-critical venues such as the plans presented in the Draft EIR/EIS. Calibration of a model merely implies that the model has been tuned to a particular data set: it does not necessarily imply that the model is ready for broad use in society-critical settings, as that is the role of uncertainty quantification, validation, and verification. There are technically-sound methods available to demonstrate that a calibrated model can be trusted within a properly-calibrated range of expected use, but I could find no discussion of any of these methods in the EIR/EIS. This omission moves the modeling sections of the Draft EIR/EIS to a place well outside the state-of-practice mainstream for computational modeling in critical-infrastructure applications.</p>	<p>See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.</p>
2575	54	<p>[ATT15:]</p> <p>Lack of Uncertainty Characterization in the BDCP Draft EIR/EIS:</p> <p>Unfortunately, there is no substantial discussion of model uncertainty in the Draft EIR/EIS. There are plenty of discussions of uncertainty of biological data, of uncertainty due to climate change, and of the difficulty of handling uncertain measures of water supply and quality, but beyond a rudimentary sensitivity analysis of how the results of computational models used in the Draft EIR/EIS respond to changes in key parameters, the topic of model uncertainty is barely addressed (or at least, not addressed where it is easy to find in the tens of thousands of pages in the Draft EIR/EIS). A model for a natural system needs a formal effort to quantify uncertainty, so that the various benefits and costs can be put into perspective. Such an effort is apparently lacking in the Draft EIR/EIS, and the following presents some representative examples of the problems with the approaches outlined in the Draft EIR/EIS:</p>	<p>See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.</p>

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		<p>This lack of uncertainty information is especially apparent in the seismic sections of the report, where the recommendation is made that uncertainty in analysis and design parameters should be minimized. Unfortunately, no feasible (i.e., cost-effective) strategies for realizing that goal are readily found in the plan, even though the cost of protecting such a large set of water conveyance structures against all credible earthquake risks may prove to be astronomical. The plan promises that seismic risks will be addressed during the design and construction phases of the project, but also explicitly admits that no substantial efforts toward accurate identification of seismic risks yet exist within the plan's scope. Thus the costs of mitigating these risks is unknown from the outset, and any estimate of project cost must thus be considered to be a substantial underestimate of actual project lifespan costs.</p>	
2575	55	<p>[ATT15:]</p> <p>Lack of Uncertainty Characterization in the BDCP Draft EIR/EIS:</p> <p>Unfortunately, there is no substantial discussion of model uncertainty in the Draft EIR/EIS. There are plenty of discussions of uncertainty of biological data, of uncertainty due to climate change, and of the difficulty of handling uncertain measures of water supply and quality, but beyond a rudimentary sensitivity analysis of how the results of computational models used in the Draft EIR/EIS respond to changes in key parameters, the topic of model uncertainty is barely addressed (or at least, not addressed where it is easy to find in the tens of thousands of pages in the Draft EIR/EIS). A model for a natural system needs a formal effort to quantify uncertainty, so that the various benefits and costs can be put into perspective. Such an effort is apparently lacking in the Draft EIR/EIS, and the following presents some representative examples of the problems with the approaches outlined in the Draft EIR/EIS:</p> <p>One of the worst cases of poor risk assessment in seismic sections of the report is the discussion of possible liquefaction effects. After a good introductory discussion of the natural phenomenon of liquefaction, the Draft EIR/EIS provides little in the way of realistic mitigation plans to handle the very real risk that liquefaction could destroy the project once it is built (or even damage components of the system during construction). Mitigation schemes that might prove virtually impossible to implement in practice (e.g., removing liquefiable soil deposits and replacing them with more stable materials) for a project of this scale are mentioned, but accurate estimates of costs required to mitigate this particular seismic hazard are not readily apparent to the technically-informed reader of the Draft EIR/EIS.</p>	<p>See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.</p>
2575	56	<p>[ATT15:]</p> <p>Lack of Uncertainty Characterization in the BDCP Draft EIR/EIS:</p> <p>Unfortunately, there is no substantial discussion of model uncertainty in the Draft EIR/EIS. There are plenty of discussions of uncertainty of biological data, of uncertainty due to climate change, and of the difficulty of handling uncertain measures of water supply and quality, but beyond a rudimentary sensitivity analysis of how the results of computational models used in the Draft EIR/EIS respond to changes in key parameters, the topic of model uncertainty is barely addressed (or at least, not addressed where it is easy to find in the tens of thousands of pages in the Draft EIR/EIS). A model for a natural system needs a formal effort to quantify uncertainty, so that the various benefits and costs can be put into perspective. Such an effort is apparently lacking in the Draft EIR/EIS, and the following</p>	<p>See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.</p>

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		<p>presents some representative examples of the problems with the approaches outlined in the Draft EIR/EIS:</p> <p>Chapter 5 (water supply, potentially the most important aspect of the project) uses the term "uncertainty" twice in the chapter body (166 pages). The first use is fundamental, and demonstrates the all-important nature of the term: "Variability and uncertainty are the dominant characteristics of California's water resources." But unfortunately, no subsequent attempt is made in this chapter (and precious little in its appendices) to quantify these uncertainties and variabilities. Such a quantification of margins of uncertainty (QMU) is a difficult task, but it is not an intractable one, and this effort is well within the mainstream of computational modeling for everything from weather prediction to automotive design. So this quantification of uncertainty effort should be treated as an essential requirement for a project of this scale, and its omission is yet one more indication of the technical weakness of the Draft EIR/EIS.</p>	
2575	57	<p>[ATT15:]</p> <p>Lack of Uncertainty Characterization in the BDCP Draft EIR/EIS:</p> <p>Unfortunately, there is no substantial discussion of model uncertainty in the Draft EIR/EIS. There are plenty of discussions of uncertainty of biological data, of uncertainty due to climate change, and of the difficulty of handling uncertain measures of water supply and quality, but beyond a rudimentary sensitivity analysis of how the results of computational models used in the Draft EIR/EIS respond to changes in key parameters, the topic of model uncertainty is barely addressed (or at least, not addressed where it is easy to find in the tens of thousands of pages in the Draft EIR/EIS). A model for a natural system needs a formal effort to quantify uncertainty, so that the various benefits and costs can be put into perspective. Such an effort is apparently lacking in the Draft EIR/EIS, and the following presents some representative examples of the problems with the approaches outlined in the Draft EIR/EIS:</p> <p>Validation results are primarily confined to tidal effects and to scenarios associated with climate change, which are important risk-management venues, but are hardly the primary focus of the plan. Validation is essential for modeling of subsurface structures, as the inelastic, stress-dependent, and hysteretic nature of soils often compromise the utility of traditional model verification methods. Yet there are apparently no validation measures applied to the components of the models used for subsurface effects (e.g., Chapters 7 and 9), and the term "validation" in general is used in the Draft EIR/EIS as an adjunct to calibration, instead of being treated as an essential component of establishing trust in a model.</p>	See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.
2575	58	<p>[ATT15:]</p> <p>Subsidence as the Achilles' Heel of the Project:</p> <p>One particularly troubling sign of potential problems is found throughout Chapter 7 and its appendices, where it is asserted that the CVHM [Central Valley Hydrologic Model] can be used for modeling subsidence. Like its poromechanical cousin liquefaction, subsidence is an Achilles' heel for this project, because this physical phenomenon has the potential to destroy the project's utility during construction and operation. This kind of single-point-physics existential risk to the project requires the best science and engineering</p>	See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.

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		<p>analysis feasible with current technology, yet the Draft EIR/EIS provides only a minimal treatment of this vulnerability. To make matters worse, the fundamental scientific assumptions that form the foundation of the Draft EIR/EIS's assertions are not presented within the plan document, so an independent technical expert attempting to evaluate the accuracy of those assertions must consult the open literature and other available sources to perform a technically-defensible evaluation of the Draft EIR/EIS.</p> <p>The open literature on groundwater modeling has demonstrated that the one-dimensional methods used to estimate three-dimensional subsidence effects in CVHM (based on Helm's method from 1975 [Footnote 2: Helm, D.C., "One-dimensional simulation of aquifer system compaction near Pixley, Calif. 1. Constant parameters"; Water Resources Research, 11, 465-478, 1975]) may provide acceptable results for overall land subsidence in a broad area, but yield inadequate and generally poor predictive results for local-scale hazards such those required for analysis of subsidence effects on engineered structures [Footnote 3.: Galloway, D.L, and M. Sneed, "Analysis and simulation of regional subsidence accompanying groundwater abstraction and compaction of susceptible aquifer systems in the USA"; Bulletin of the Geological Society of Mexico, Volume 65, Number 1, 123-136, 2013] In particular, the methods used to predict subsidence effects in the CVHM appear to be practically incapable of predicting local differential settlement, and that is exactly the physical response that can compromise or destroy the operation of the tunnels and channels that permit the water transfers that form the heart of the Draft EIR/EIS. So the use of the subsidence idealizations found in CVHM is simply an inadequate means to assess subsidence risk for the project, much less to mitigate it.</p>	
2575	59	<p>[ATT15:]</p> <p>The fundamental problem here is that the basic assumptions for modeling groundwater flow in software tools such as CVHM [Central Valley Hydrologic Model] all too often preclude accurate simulation of subsidence by assuming from the start that subsidence does not occur in an aquifer. The purpose of this mechanical over-idealization is to permit an especially simple mathematical formulation for porous-media flow that was arguably appropriate decades ago, when computers were expensive and slow, but that is technically unwarranted today, when computers are fast and relatively inexpensive. The extra work required to perform an accurate analysis using the relevant science commonly deployed in higher-fidelity aquifer simulations (e.g., aquifer simulations used in the fossil fuel extraction industries) is readily manageable when deployed on modern computational platforms, and most (if not all) of the model data obtained from well borings and similar data-gathering efforts could be reused in these higher-fidelity models. So there is simply no excuse for the BDCP Draft EIR/EIS modeling efforts failing to utilize the appropriate scientific body of knowledge to assess subsidence risk.</p> <p>Worse still, the authors of the Draft EIR/EIS don't even mention these well-known improvements to their model, or how these techniques could provide much more accurate estimates of the likelihood that the entire system would even work in the presence of subsidence. The scientific field that underlies the prediction of subsidence is termed "poromechanics," yet this all-important term never appears in the many thousands of pages of the Draft EIR/EIS. This neglect of the well-established governing science is inexcusable, given the existential risk to the construction and operation of the water-conveyance systems that form the heart of the plan's long-term operation.</p> <p>It is important to note that these higher-fidelity poromechanics principles are not exactly</p>	<p>See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.</p>

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		<p>new or little-known to practitioners in Civil Engineering. The relevant theory was developed by the famous geotechnical engineer Karl von Terzaghi [Footnote 4: http://en.wikipedia.org/wiki/Karl_von_Terzaghi] in the 1930's (Terzaghi is widely known as "the father of soil mechanics") and further honed by Maurice Anthony Biot [Footnote 5: http://en.wikipedia.org/wiki/Maurice_Biot] in the 1940's. For but one example, poromechanics simulation capabilities for clay, sand, and silt soil deposits that utilized Terzaghi's and Biot's scientific principles (and that were thus capable of higher-fidelity predictions of subsidence) were developed and deployed in the public domain through the efforts of faculty and students at the University of California, Davis, three decades ago [Footnote 6: Mish, K.D., and Herrmann, L.R., "User's manual for SAC-3: a three-dimensional nonlinear, time dependent soil analysis code using the bounding surface plasticity model"; Naval Civil Engineering Laboratory Technical Report CR 8409, Port Hueneme, CA, 1983], so there is simply no excuse for not including these best-practices scientific models in current aquifer simulation tools such as CVHM. A project that will cost at least several tens of billions of dollars should be based on the best science available, and not on over-simplified idealizations that were long ago superseded by more accurate scientific principles.</p>	
2575	60	<p>[ATT15:]</p> <p>There does appear to be an emerging recognition in the hydrological modeling community that these higher-fidelity methods are warranted for use when natural systems (e.g., aquifers) are utilized to support engineered systems (e.g., water conveyance infrastructure), but this recognition is not made explicit in the Draft EIR/EIS, and citizens should not have to pore through open-source documents trying to determine whether or not the Draft EIR/EIS's predictions of groundwater effects utilize the most accurate science available.</p>	<p>See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.</p>
2575	61	<p>[ATT15:]</p> <p>The technical risks associated with this ambitious project, and the immense budget required for its construction and operation, clearly mandate that the best-available scientific principles be deployed and documented in all project artifacts, including the Draft EIR/EIS. It is technically indefensible that these principles (including all fundamental physical assumptions) are not readily available in the tens of thousands of pages of the Draft EIR/EIS, and the omission of the particulars of the science used to estimate these environmental effects precludes both accurate prediction of the environmental effects of this project, as well as independent technical verification of the claims made in the plan. Since independent verification is a fundamental hallmark of scientific investigation, the current version of the BDCP Draft EIR/EIS fails even this most basic test of science.</p>	<p>See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.</p>
2575	62	<p>[ATT15:]</p> <p>Problems with CalSim II:</p> <p>If insufficiently-accurate modeling of subsidence is the Achilles' heel of the Draft EIR/EIS, then a similar anatomical analogy might be proposed for the plan's broad use of the California Department of Water Resources' CalSim II computer model. CalSim II is used to evaluate the environmental effects of the various alternatives presented in the Draft EIR/EIS, and hence this software lies at the heart of the EIR/EIS. Unfortunately, CalSim II has a substantial set of its own technical weaknesses, so the Draft EIR/EIS suffers from heart problems as well as possessing an Achilles' heel. The next several paragraphs outline some of the most substantial weaknesses of CalSim II, but many more can be found in the various</p>	<p>See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.</p>

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		<p>peer review documents that have been generated and disseminated as part of the CalSim II development process. [Footnote 7: Close, A., Haneman, W.M., Labadie, J.W., Loucks, D.P., Lund, J.R., McKinney, D.C. and Stedinger, J.R., "A Strategic Review of CALSIM II and its Use for Water Planning, Management, and Operations in Central California," California Bay Delta Authority Science Program Association of Bay Governments, December 2003.] [Footnote 8: Arora, S. and Peterson L., "Peer Review Response: A Report by DWR/Reclamation in Reply to the Peer Review of the CalSim-II Model Sponsored by the CALFED Science Program In December 2003," California Department of Water Resources and U.S. Bureau of Reclamation, August, 2004.] [Footnote 9: Ford, D., Grober, L., Lund, J.R., and D. McKinney, "Review Panel Report: San Joaquin River Valley CalSim II Model Review," CALFED Science Program -- California Water and Environment Modeling Forum, January 2006.]</p> <p>In the interest of simplicity, only a few key concerns about the suitability of the current version of CalSim will be presented here, but these should be sufficient to indicate that CalSim II does not yet warrant sufficient trust to justify its use for analysis of the alternatives that lie at the heart the water transfer plan.</p> <p>Some of the most important problems with CalSim II include the following concerns, most of which have been cited here previously as serious limitations of the Draft EIR/EIS:</p> <ul style="list-style-type: none"> -insufficiently-accurate assumptions underlying estimates of aquifer and groundwater response, including poor (or perhaps even nonexistent) characterizations of the risk of subsidence, -inattention to concerns of provenance of the input data used to generate results used for analysis of alternatives, and -lack of a sound technical basis for characterizing uncertainty in the model and in the input data. 	
2575	63	<p>[ATT15:]</p> <p>Critique has already pointed out the need for higher-fidelity estimates of subsidence effects, because these effects have the potential to compromise the function of the proposed conveyance infrastructure. The peer-review documents cited above include only one single use of the word "subsidence," and that use occurs in association with a proposal to incorporate another DWR model (IGSM2) into CalSim II. [Footnote 10: Arora and Peterson, op. cit, page F-2] Unfortunately, this model is not mentioned in the Draft EIR/EIS, so it is not clear whether its subsidence capabilities are employed in the Draft EIR/EIS's analysis of alternatives. And this question is rendered moot by the fact that attempts to learn (e.g., by reviewing various DWR open-source publications) whether IGSM2 even utilizes an accurate method for modeling subsidence prove unsuccessful. So it is not clear whether any of the analyses of alternatives presented in the Draft EIR/EIS include accurate modeling of the relevant physical effects that could characterize success or failure of the conveyance structures proposed in the EIR/EIS.</p>	See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.
2575	64	<p>[ATT15:]</p> <p>The concerns of data provenance are subtle, but they are important, and they lead to one of the continuing critiques of CalSim II made by the peer reviewers. The initial peer review effort identified a software quality problem [Footnote 11: Close, et al, op. cit., page 8 and</p>	See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.

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		<p>58] with archiving of code and input datasets in CalSim II, a problem that is currently being remedied by the CalSim II developers, but which should never have occurred in the first place. That problem is one of establishing the all-important mapping between input data and the CalSim II results that are generated by those data sets. This mapping is termed data provenance.</p> <p>Provenance is equally important in computational modeling, as input datasets contain the fundamental assumptions that generate computed results, which are then used to effect policy decisions, e.g., water transfers based on the computational simulation. If the chain of custody between the policy decision and the input data that generated the results that influenced that policy cannot be established, then the results (and the policy) cannot be trusted. So as in the world of antiques, provenance is a fundamentally-important requirement for computer analysis.</p> <p>Provenance is established in computer models by providing an appropriate form of configuration management for both the software source code, and for all the datasets used, both as input and as output. Normal software-quality-assurance practices would require that the mapping between input datasets and generated results be tested regularly (often daily), so that changes to the software do not cause deviations in the results. Such deviations could easily call into question the legitimacy of policy decisions made on the basis of these computations.</p> <p>The original 2003 review panel pointed out that CalSim II did not include such configuration management capabilities, and the CalSim II developer community agreed to remedy this substantial deviation from standard software quality practices. [Footnote 12: Arora and Peterson, op. cit, page 12.] CalSim II now includes some configuration management capabilities for input datasets, but it is not clear from the Draft EIR/EIS or from the various review documents how effectively these new data management capabilities are utilized. This problem alone causes serious concerns about whether the analyses of the various Draft EIR/EIS alternatives can be trusted. And this question of trust touches on another problem with CalSim II identified during the peer review process [Footnote 13: Close, et al, op. cit, page 24, and Arora and Peterson, op. cit, page 17], namely that CalSim II analyses may not be repeatable, i.e., the results may be strongly dependent on the experience and personal preferences of the particular analysts carrying out the modeling, so that the computed results may not be objective. This opens the door to concerns that model results may be biased, either accidentally or intentionally. Thus there are serious limitations in how much the results of CalSim II can be trusted.</p> <p>The best way to remedy these problems is to provide open access to the computer model and to the input datasets used in the Draft EIR/EIS, so that a more diverse community of interested parties can evaluate the model and its data towards the goal of more accurate results. Another means to help remedy the problem of lack of trust in computed results is to utilize formal techniques to characterize uncertainty, so that the practical effect of potential analyst bias can be assessed to determine whether or not inter-analyst differences lead to substantial discrepancies in results. But as already mentioned in this critique, uncertainty characterization is lacking in the CalSim II effort, and while the various peer review documents consistently identify the need for better characterization of model uncertainty, it is not clear whether this improved uncertainty characterization has been implemented yet, which is yet another factor that diminishes trust in CalSim II's key role in the evaluation of alternatives in the Draft EIR/EIS.</p>	

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2575	65	<p>[ATT15:]</p> <p>The peer review documents also identify the potential for a completely inaccurate assumption embedded in the groundwater modeling components of CalSim II [Footnote 14: Close, et al, op. cit, page 8], and the CalSim II response to this criticism [Footnote 15: Arora and Peterson, op. cit, page 7 and A-1 through A-3] is insufficient in technical detail to determine whether this inaccuracy is present or not. The criticism is based on an inherent assumption of simple porous-flow models, such as those used in CalSim II, namely that these models assume an infinite supply of usable groundwater available at the outer boundaries of the geographic domain modeled.</p> <p>A groundwater aquifer has physical limits, e.g., the alluvial deposits that store the water eventually reach bedrock, and hence the aquifer's capacity is limited by geologic constraints. But including these hard constraints into a porous-flow model is not trivial: in particular, the resulting modeling problem becomes nonlinear, and requires more complex solution techniques that require more computer resources. It is not clear from the Draft EIR/EIS's discussion of the modeling assumptions inherent in CalSim II, or from the various peer review documents, exactly how the CalSim II model incorporates these all-important constraints, and this type of potential limitation of the CalSim II model needs to be included in the Draft EIR/EIS groundwater modeling discussions, with due technical detail for how it is (or could be) overcome in practice.</p> <p>It is therefore apparent that too much uncertainty is present in the current Draft EIR/EIS document regarding the scope, technical basis, and practical utility of the CalSim II model to support due trust in this model for a project as large as that proposed in the BDCP Draft EIR/EIS. The current modeling assumptions and the software engineering practices utilized to develop the CalSim II model should be vetted before a broader variety of independent technical experts before the citizens of California can fully trust these results.</p> <p>The current model is clearly "not ready for prime time," and future review teams should be enlarged to include independent experts in uncertainty quantification, software engineering, poromechanics, and operations research. Until the CalSim II model and its associated input data is reviewed by a wider community of independent experts, this computer tool simply does not warrant the trust placed in it via the Draft EIR/EIS.</p> <p>In short, the existing review processes cited are a good start, but they are still only that: a start.</p>	<p>See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.</p>
2575	66	<p>[ATT15:]</p> <p>Towards a Scientifically-Defensible Bay Delta Conversation Plan.</p> <p>I began my technical critique of the BDCP Draft EIR/EIS by stating the obvious:</p> <p>The Bay Delta Conservation Plan (BDCP) Draft EIR/EIS is an exhaustive document, but its emphasis is on quantity instead of quality.</p> <p>The means to remedy the myriad technical shortcomings of the plan is simple in theory and completely feasible in practice: all that is required is to improve the plan's quality so as to match its exhaustive quantity. In spite of its technical shortcomings, the plan includes many excellent references for assessment and mitigation of the natural and man-made risks</p>	<p>See response to comments 1657-ATT3 regarding Kyran D. Mish: Comments for AquAlliance on BDCP Draft EIR/EIS.</p>

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		<p>inherent in its analysis, design, construction, and operation. All that is required to generate a technically accurate version of the Draft EIR/EIS is for its authors to utilize those best-practices references (e.g., relevant codes for seismic design) to improve the estimates of costs and risk currently found in the plan, towards the goal of a technically-unimpeachable set of risk and cost estimates for the construction and operation of this ambitious project.</p> <p>Unfortunately, carrying out this more accurate cost and risk assessment exercise will be an ambitious task, but it is a necessary one given that some of the risks shortchanged by the current Draft EIR/EIS have the potential to render the proposed project scope unusable (e.g., differential settlement effects caused by liquefaction or subsidence) or prohibitively expensive. These risks alone warrant an accurate risk-management strategy, which the Draft EIR/EIS currently lacks. But the citizens of the state of California deserve an accurate accounting of the technical and financial risks of this project before the project is initiated. The authors of this Draft EIR/EIS should return to the drawing board to develop accurate estimates of what this project will actually cost, and what natural risks and technical impediments must be overcome in construction and operation. The real costs, financial and environmental, of this project must be assessed before work is begun, not after, and the current Draft EIR/EIS simply does not make this assessment possible.</p>	
2575	67	[ATT16: Email attachment with summary of assurances: water funds, sent to Letty Belin of the U.S. Department of the Interior.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-13 regarding the comment referencing this attachment.
2575	68	[ATT17: "Groundwater Conditions in Butte County" slide presentation by Christina Buck, PhD, of the Department of Water and Resource Conservation. Durham Groundwater Meeting, February 10, 2014.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-9 regarding comment referencing this attachment.
2575	69	[ATT 18: April 2, 2014 Letter from AquAlliance to Brad Hubbard of Reclamation and Frances Mizuno of San Luis and Delta-Mendota Water Authority re: Comments on the Draft Environmental Assessment/Initial Study 2014 San Luis and Delta-Mendota Water Authority Water Transfers.]	The comment describes an attachment to the comment letter. The attachment does not raise any additional issues related to the environmental analysis in the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS that are not already addressed in the comment referencing the attachment or the Final EIR/EIS. Please see response to comment 2575-4 regarding comment related to this attachment.
2575	70	[ATT19: Table of 2014 Sacramento Valley Water Transfers.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-4 regarding comment related to this attachment.
2575	71	[ATT20: July 30, 2015 Letter from AquAlliance to Glenn-Colusa Irrigation District re: Comments on the Draft Environmental Impact Report for the Glenn-Colusa Irrigation District 10-Wells Project (Groundwater Supplemental Supply Project SCH#2014092076.)	The comment describes an attachment to the comment letter. Please see response to comment 2575-38 regarding comment related to this attachment.
2575	72	[ATT21: July 29, 2015 letter from hydrogeologist Kit Custis to Barbara Vlamis of AquAlliance re: Comments and Recommendations on Draft Environmental Impact Report for Glenn-Colusa Irrigation District's Groundwater Supplemental Supply Project, June 2015.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-38 regarding comment related to this attachment
2575	73	[ATT22: November 25, 2014 letter from hydrogeologist Kit Custis to Barbara Vlamis of AquAlliance re: Comments and Recommendations on U.S. Bureau of Reclamation and San Luis Delta-Mendota Water Authority Draft Long-Term Water Transfer Draft EIS/EIS, September 2014.]	The comment describes an attachment to the comment letter. The attachment does not raise any additional issues related to the environmental analysis in the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS that are not already addressed in the comment referencing the attachment or the Final EIR/EIS.
2575	74	[ATT23: May 21, 2013 letter from AquAlliance to Brad Hubbard of Reclamation and Dean Messer of DWR re: Comments on the Draft Environmental Assessment and Findings of No Significant Impact for the 2013 Water Transfer Program and the 2010-2011 Water Transfer	The comment describes an attachment to the comment letter. Please see response to comment 2575-4 and response to comment 2575-26 regarding comments related to this attachment.

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		Program.]	
2575	75	[ATT24: Duplicate of ATT13.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-4 regarding comment referencing this attachment.
2575	76	[ATT25: Initial Study and Proposed Negative Declaration for Western Canal Water District 2015 Water Transfer Program, February 2015.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-4 regarding comment related to this attachment.
2575	77	[ATT26: December 1, 2014 letter from AquAlliance to Brad Hubbard of Reclamation re: Comments on the Draft Environmental Impact Statement/Environmental Impact Report Long-Term North-to-South 2015-2024 Water Transfer Program.]	The comment describes an attachment to the comment letter. Please see response to comment 2575-28 regarding comment related to this attachment.
2576	1	<p>As acknowledged in the RDEIR/SDEIS, there is a significant amount of additional engineering analysis required as part of our review under 33 USC 408. We [USACE] anticipate there will be a need for a supplemental NEPA document(s) once the additional engineering analysis, specifically hydraulic modeling, is developed. We look forward to receiving a written request for review under 33 USC 408 from the California Department of Water Resources to continue our review of the proposed action.</p> <p>This office requests its comments for both the Draft EIS/EIR and RDEIR/SDEIS be included and addressed in the Final EIS/EIR. In addition, before the Final EIS/EIR is released, we request a formal letter from the US Bureau of Reclamation responding specifically to the comments and how they are/will be addressed in the Final EIS.</p> <p>We look forward to continuing to work with you and others on BDCP/California WaterFix. Please refer to identification number SPK-2008-00861 in any correspondence concerning this project. If you have any questions, including clarification of any of the comments, please contact Mr. Zachary Simmons by email at Zachary.M.Simmons@usace.army.mil or by telephone at 916-557-6746 or Mrs. Meegan Nagy by email at Meegan.G.Nagy@usace.army.mil or by telephone at 916-557-7257.</p>	<p>Final EIR/EIS Appendix 1F Supplemental Information for USACE Permitting Requirements provides an overview of the USACE permitting requirements for CWF. The appendix includes an overview of the status of the permitting process for Clean Water Act Section 404, Rivers and Harbor Act Section 10 and Section 14 (Section 408), as well as National Historic Preservation Act Section 106, and Executive order 11988. The lead agencies recognize that additional steps will be required, in addition to completing the FEIR/EIS, to satisfy these permitting requirements. The Appendix outlines the specific steps that will be taken to achieve compliance with 33 CFR 408. One of the first steps in this process has already occurred as DWR submitted a letter request (dated December 9, 2015) to the Central Valley Flood Protection Board requesting the start of the Section 408 process, who approved transmitting it to the Corps on December 15, 2015.</p> <p>Reclamation and DWR have coordinated on developing draft responses to the USACE prior to the Final EIR/EIS being released for public and agency review. There is no NEPA requirement for providing a formal letter with responses to comments in advance of the FEIR_FEIS.</p>
2576	2	Suggest reevaluating effects language when employing various minimization measures. To conclude that there will be "No adverse effect" because so many mitigation measures will be implemented is a little misleading. Especially when some of them are minimization. Might be better to say, "will be mitigated to less than significant."	This nomenclature was developed based on input from the federal lead agencies. The "no adverse effect" determination recognizes that there may be a residual impact after mitigation has been applied. The "less than significant" finding has been applied to CEQA-related impacts and has been presented in the EIR/EIS as well. This clearly recognizes that there may be a residual, although less than significant, impact after mitigation (including minimization measures) has been applied.
2576	3	Suggest adding a reference table summarizing all alternatives, mitigation measures, CM's EC's, impacts, etc. There are too many acronyms spread throughout the chapters and given the size of the document it is difficult to keep them straight. A reference sheet would be very useful.	Table ES-8 in the Executive Summary of the Final EIR/EIS identifies impacts and mitigation measures under each alternative. Table 3-3 in Chapter 3, Description of Alternatives, identifies conservation measures, and Tables 3-9, 3-10, and 3-11 identify Environmental Commitments by alternative. All abbreviations and acronyms are defined in the EIR/EIS in a "reference sheet" that is included in the table of contents.
2576	4	Given the size of the documents, suggest adding a table(s) showing impacts and which are considered adverse/not adverse for quick reference.	The Executive Summary contains a table identifying the level of all impacts and distinguishes between impacts findings made under CEQA and under NEPA. The summary tables also identify applicable mitigation measures and the residual impact after the mitigation is applied. In addition to the summary table, each Final EIR/EIS resource chapter has been updated to include an impact summary discussion and comparison tables. These tables allow readers to more easily compare impacts, including the intensity of that impact, across the alternatives. The summary comparisons and supporting tables have also been added to the FEIR/FEIS Executive Summary.

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2576	5	Clearly address early in the document how much water will be diverted, and from where, once there are two points of diversion. The document should identify a purpose of the project as providing operational flexibility. Our understanding is that this project would not increase the diversions, but allow the water to be withdrawn from either location or a combination of the two, based on conditions.	<p>As described in Chapter 3 of the EIR/EIS and the Executive Summary of the Partially Recirculated Draft EIR/Supplemental Draft EIS, implementing a dual conveyance system, in which water could be diverted from either the north or the south or both, depending on the needs of aquatic organisms, would align water operations to better reflect natural seasonal flow patterns by creating new water diversions in the north Delta equipped with state-of-the-art fish screens. The new system would reduce the ongoing physical impacts associated with sole reliance on the southern diversion facilities and allow for greater operational flexibility to better protect fish. Minimizing south Delta pumping would provide more natural east–west flow patterns. In addition, to confirm, the project is not seeking the ability to nor would it increase the ability of the SWP to divert water over existing water rights.</p> <p>For more information regarding Project Objectives and Purpose and Need please see Chapter 2 of the FEIR/EIS.</p>
2576	6	Why is the SCCF [South Clifton Court Forebay] larger than the NCCF [North Clifton Court Forebay]? How will the two operate and how do the operations affect the size of the forebay? Which is the primary source for SWP and CVWP deliveries, north delta intakes or south delta? If the north forebay feeds both pumps, why is it smaller?	<p>Currently, the SWP draws water from the Clifton Court Forebay (CCF) and CVP draws its supply from the Old River. To maximize flexibility in operations related to water flow, water quality, and fish presence, the proposed operation of California Waterfix, as a “dual conveyance facility,” will potentially have three operational scenarios: isolated south Delta operation when North Delta Diversion facility pumping is restricted, isolated north Delta operation when existing pumping facilities in the south Delta pumping is restricted, and dual operation.</p> <p>The isolated south Delta operation is similar to the current operation of the existing SWP and CVP facilities, except the existing Clifton Court Forebay will be enlarged and separated into two cells, North Clifton Court Forebay (NCCF) and South Clifton Court Forebay (SCCF). The SWP will continue to divert its supply into the SCCF from West Canal, whereas the CVP diverts its flows from Old River. During the isolated south Delta operations, both Skinner and Tracy Fish Facilities will remain operational. No diversions will be taken from the north Delta intake facilities.</p> <p>For the isolated north Delta operation, the SWP Pumping Plant and CVP Pumping Plant draw water from NCCF via the new conveyance facilities and the north Delta intakes. Only NCCF is used in this scenario, and the SCCF intake and Tracy Fish Facility gates remain closed. The flow from the north Delta intakes is taken from the NCCF and bypasses the Tracy and Skinner Fish Facilities. The operating range of water surface elevations within the NCCF will be compatible with the operating ranges of both export pumping plants.</p> <p>Under dual operation, both north Delta intakes and south Delta diversion facilities are used to meet the SWP and CVP demands. The inflow into the NCCF is provided by the diversions from the north Delta intakes and the inflows into SCCF are from south Delta intakes. The SWP demands are met by the flows from both NCCF and SCCF, with the flows from the SCCF passing through the Skinner Fish Facility. The CVP demands are met by flows from the NCCF and Old River, with the diverted flow from Old River passing through the Tracy Fish Facility. This requires the simultaneous use of both NCCF and SCCF to meet the SWP and CVP pumping needs.</p> <p>It is expected that the diversions from the north and south Delta intakes will be subjected to a number of constraints, including tidal cycles, water surface elevation at south Delta sloughs, flows at Sacramento River and its tributaries, water quality at key locations, season of the year, and gate operation cycles (Priorities). The diversion constraints, however, will be different for north Delta intakes and south Delta diversion facilities. For example, on the delivery side, the SWP prefers to operate during off-peak hours, when electricity rates are lower, whereas the CVP pumping plant operates continuously throughout the day.</p> <p>The NCCF and SCCF are sized differently to accommodate diversion and export constraints discussed above associated with each facility.</p>

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2576	7	Page 1-4, Line 39: The SDEIS discloses in Appendix E that additional analysis and information will be necessary for permission under Section 14 of the Rivers and Harbors Act (commonly called Section 408). As such, it is highly likely that additional Section 7 consultation will be necessary during Section 408 permitting.	<p>Final EIR/EIS Appendix 1F provides a summary of the USACE permitting requirements. The discussion in the appendix recognizes that USACE may initiate consultation under the ESA. The lead agencies are currently consulting with USFWS and NMFS on construction and operation of Alternative 4A.</p> <p>The Corps is responsible for Section 404 (CWA) and Section 408 permits. Section 7 (ESA) consultation is conducted concurrently with those processes. In the unlikely event that a change in the project definition would occur, additional consultation with USFWS and NMFS would be required. The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.</p>
2576	8	Page 1-12, Line 17: As implementation of the proposed project or any of the action alternatives will require permits and approvals from public agencies other than the lead agencies, the CEQA and NEPA documents are prepared to support the various public agency permit approvals and other discretionary decisions, "to the extent information is currently available". Add the wording within the quotes. This will account for the further information that is needed for the 408 permitting.	The lead agencies acknowledge that additional information may be needed to address the Corps' need, as well as other Responsible or Cooperating Agency needs, for detailed levee designs for purpose of its Section "408" compliance process. The discussion in Final EIR/EIS Appendix 1F recognizes that additional environmental documentation may be required to complete the Section 408 compliance process.
2576	9	Page 1-15, Line 13: The SDEIS discloses in Appendix E that additional analysis and information will be necessary for permission under Section 14 of the Rivers and Harbors Act (commonly called Section 408). As such, it is highly likely that additional Section 7 consultation will be necessary during Section 408 permitting.	<p>Final EIR/EIS Appendix 1F provides a summary of the USACE permitting requirements. The discussion in the appendix recognizes that USACE may initiate consultation under the ESA. The lead agencies are currently consulting with USFWS and NMFS on construction and operation of Alternative 4A.</p> <p>The Corps is responsible for Section 404 (CWA) and Section 408 permits. Section 7 (ESA) consultation is conducted concurrently with those processes. In the unlikely event that a change in the project definition would occur, additional consultation with USFWS and NMFS would be required. The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.</p>
2576	10	Page 1-17, Line 14: Concur. Detailed engineering design and hydraulic analysis will be required for the 408 review. The information contained within the current CEQA/NEPA documents does not fully meet this level of detail. Additional NEPA compliance will likely be required after additional information regarding engineering and hydraulic analyses are provided to USACE.	Additional information may be needed to address the Corps need for detailed levee designs for purpose of its Section 408 compliance process. The discussion in Final EIR/EIS Appendix 1F recognizes that additional environmental documentation may be required to complete the Section 408 compliance process.
2576	11	Page 1-30, Line 27: Concur. USACE looks forward to positive responses to comments submitted as part of the draft EIS/EIR.	Consistent with the requirements of the California Environmental Quality Act (CEQA Guidelines §15088) and the National Environmental Policy Act (CEQ NEPA Regulations, 40 CFR § 1503.4) and policies held by all Lead Agencies governing the implementation of CEQA and NEPA, all comments received on the DEIR/EIS and RDEIR/SDEIS are included with the Final EIR/EIS. Please see Master Response 42 regarding treatment of public comments.
2576	12	Page 4.1-9, Line HORB: Operational criteria for the Head of Old River Barrier [HORB] during flood flows will need to be developed and approved by USACE in coordination with the Central Valley Flood Protection Board. The flood flow operational criteria will be applicable any time of the year that flood flows occur.	As described in Chapters 3 and 6 of the EIR/EIS, facilities along the levees would be designed to avoid increased flood potential compared to Existing Conditions or the No Action Alternative in accordance with the requirements of USACE, CVFPB, and DWR. The USACE, CVFPB, and DWR would require that any construction that would disturb existing levees to be designed in a manner that would not adversely affect existing flood protection. Facilities to be constructed along the levees would be designed to provide flood neutrality during construction and operations. Facilities located along the levees, including cofferdams at the intake locations, would be designed to provide continued flood management at the same level of flood protection as the existing levees; or if applicable, to a higher standard for flood management engineering and permitting requirements if the standards are greater than the existing levee design. The levee design criteria would consider the most recent criteria, including new guidelines for urban and rural levees. The design flood elevation would need to consider sea level rise to reduce impacts. Additionally, DWR would consult with local reclamation districts to ensure that construction activities would not conflict with reclamation district flood protection measures. Facilities construction would include temporary cofferdams, stability analyses, monitoring, and slope remediation. For the excavation of the existing levees, sheet pile

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			wall installation would minimize effects on slope stability during construction. The lead agencies recognize that an element of the real time operations of the HORB would be to not impede flood flows past the barrier site. The summary highlights annual operational criteria of the HORB. It was not meant to exclude flood flows from operational criteria times of the year other than the January through June 15 time period.
2576	13	Page 4.1-15, Line 11: Concur. 408 permission will be required for any environmental commitments which are located on federally authorized projects. Additional information will be required as part of the 408 process and DWR and Reclamation should anticipate the need for additional environmental review.	Please see response to comment 2576-8 above.
2576	14	Page 4.1-43, Line 10: What about LLT [Late Long Term]? Even though not being used for CEQA NEPA, how are you modeling differences between ELT [Early Long Term] and LLT?	The LLT modeling effort was developed for the BDCP to help assess environmental conditions expected at the end of the 50-year permit, including long term restoration efforts to contribute to the conservation of the covered species as a necessary element of an HCP and NCCP. The ELT condition was used to support the assessment of environmental impacts occurring under Alternative 4A, 2D, and 5A as there is no long term restoration associated with these alternatives and the expected duration of the ESA Section 7 authorization and CESA Section 2081(b) permit would be much shorter than the 50-year term of the Section 10 permit/NCCPA authorization. The LLT modeling for Alternatives 4A, 2D, and 5A was also developed and applied to the aquatics and water quality impact assessment.
2576	15	Page 4.1-43, Line 22: The physical modeling relies upon the Yolo Bypass improvements however, these improvements will require USACE permitting. The project is largely undefined at this time and it would be too early and pre-decisional to rely on. Provide better information regarding the sensitivity analysis done to let readers know if these improvements are not done, what would the physical modeling results be.	As described in Chapter 3 of the EIR/EIS, the Yolo Bypass improvements are currently being defined under the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Implementation Plan being completed by DWR and Reclamation, and a separate flood management programs being completed by DWR and regional flood management agencies. Assumptions were included in the EIR/EIS for the No Action Alternative and proposed project for the purpose of hydrologic modeling. Separate engineering and environmental documentation will be completed for improvements to the Yolo Bypass, which would require separate permitting by the USACE. Utilizing this information does not in any way amount to an approval of the project by DWR, Reclamation, the Corps or any other permitting agency.
2576	16	Page 4.2: For consistency in the documents, suggest adding a NEPA heading in addition to the CEQA Conclusion heading. The NEPA and CEQA headings are used in Section 4.3 and in the other documents.	The comment appears to reference discussion of the No Action Alternative Early Long-Term (ELT). In the Final EIR/EIS, analyses of the No Action Alternative ELT contain both NEPA and CEQA headings.
2576	17	Page 4.3.1-8, Line 29: Effects determination should be stated here.	Final EIR/EIS Chapter 3 Water Supply includes Impact WS-2: Change in SWP and CVP Deliveries and Impact WS-3: Effects of Water Transfers on Water Supply. As disclosed in the Chapter 3, Section 5.3.2 Determination of Effects, the purpose of both impact discussions was to disclose changes in water deliveries, both to the SWP and CVP, and not specifically to make NEPA or CEQA findings on the environmental impacts of these changes; therefore, no effects determination is included. However, this information played a central role in the determination of impacts on other resources including surface water, water quality, aquatics, recreation, energy, and growth. These impacts, with significance findings, are clearly described in each resource's chapter in the Final EIR/EIS.
2576	18	Page 4.3.1-9: Effects determination should be stated here.	As described in Chapter 3 of the EIR/EIS, the alternatives considered in the EIR/EIS do not include specific water transfers. The EIR/EIS acknowledges that water transfers would continue in a similar manner as historic transfers and in accordance with State and Federal laws and regulations. The EIR/EIS also acknowledges that the use of water transfers between agencies could increase in the future as SWP, CVP, and other surface water supplies are reduced due to climate change, sea level rise, and increased water demand in the Delta watershed, as described in Appendix 1E and Appendix 5D. Project level analysis of impacts upstream of the Delta is highly speculative and this EIR/EIS does not constitute the CEQA/NEPA coverage required for any specific transaction; therefore, no effects determination is included. Rather, it

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			provides an analysis of how transfers relate to the conveyance facilities. The analysis of any potential transfer using SWP or CVP facilities must be covered pursuant to separate laws and regulations once the specific transfer has been proposed.
2576	19	Page 4.3.15-13, Line 13: Where can the public find design details about the small boat lock? What would it look like, what size boats would it accommodate, etc? I can't find the analysis referenced in the SDIP [South Delta Improvements Project] EIR/EIS.	A description of the boat lock is included on page 2-23 of the referenced document (South Delta Improvements Program Drafter EIR/EIS). However, that boat lock design has been slightly modified for the CWF project. The boat lock would be approximately 20-feet wide by 130-feet long, with an invert of approximately -8.0 feet msl. The top of the lock wall would be at an elevation of approximately 15 feet. The Conceptual Engineering Report for Alternatives 4 and 4A includes additional information about the design of the Head of Old River permanent gate structure and boat lock.
2576	20	Page 4.3.2-9, Line 29: SW-8 should include more than simply wind fetch lengths. The environmental commitments are not yet well defined. They could have impacts to water surface elevations, sedimentation, velocity, scour, etc. The impact analysis and associated mitigation measures should address all potential impacts that could expose people or structures to a significant risk of loss, injury or death involving flooding.	Impact SW-8 recognizes that wind fetch is one of the elements that could result in adverse public safety impacts. Mitigation Monitoring and Reporting Plan provides a more detailed discussion of the Mitigation Measure SW-8 which details the steps the Lead Agencies will follow when implementing this measure. The Lead Agencies believe wind fetch is one of the more important considerations in shallow water restoration sites and has no information on the record to indicate a more severe impact would occur from the project or alternatives beyond that described. However if additional information during the next phase of project design indicates that the impact may be more substantial, the Lead Agencies will work with USACE to further address this issue through the Section 408 compliance process, and possibly additional CEQA and NEPA compliance, if necessary.
2576	21	Page 4.3.2-9, Line 31: Impact SW-9: Alternative 4A would include structures within the 100-year flood hazard area. These structures may result in impeded or redirected flood flows or conditions. Additional hydraulic modeling is required to determine the extent of those potential impacts. While USACE permitting would require compensating for any significant hydraulic impacts, the project may have impacts that require mitigation.	Please see response to comment 2576-8. As described in Chapters 3 and 6 of the EIR/EIS, facilities along the levees would be designed to avoid increased flood potential compared to Existing Conditions or the No Action Alternative in accordance with the requirements of USACE, CVFPB, and DWR. The USACE, CVFPB, and DWR would require that any construction that would disturb existing levees to be designed in a manner that would not adversely affect existing flood protection. Facilities to be constructed along the levees would be designed to provide flood neutrality during construction and operations. Facilities located along the levees, including cofferdams at the intake locations, would be designed to provide continued flood management at the same level of flood protection as the existing levees; or if applicable, to a higher standard for flood management engineering and permitting requirements if the standards are greater than the existing levee design. The levee design criteria would consider the most recent criteria, including new guidelines for urban and rural levees. The design flood elevation would need to consider sea level rise to reduce impacts. Additionally, DWR would consult with local reclamation districts to ensure that construction activities would not conflict with reclamation district flood protection measures. Facilities construction would include temporary cofferdams, stability analyses, monitoring, and slope remediation. For the excavation of the existing levees, sheet pile wall installation would minimize effects on slope stability during construction.
2576	22	Page 4.3.2-10, Line 5: The NEPA effects aren't associated with impeded flood flows in the 100-year flood hazard area. Revise NEPA effects.	The comment is in reference to Impact SW-4: Substantially Alter the Existing Drainage Pattern or Substantially Increase the Rate or Amount of Surface Runoff in a Manner That Would Result in Flooding during Construction of Conveyance Facilities located in Final EIR/EIS Chapter 6 Surface Water. The purpose of this impact discussion is to disclose if runoff from water conveyance facility construction sites would result in an adverse effect on flooding. The Final EIR/EIS recognizes that increased runoff from construction sites could result in an adverse impact on flooding. Implementing Mitigation Measure SW-4: Implement Measures to Reduce Runoff and Sedimentation would reduce this impact to a less than significant level. See Chapter 6 (Surface Water), FEIR/EIS, for an updated NEPA Effects determination.

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2576	23	Page 4.3.3-7, Line 17: Remove the word "Even". Should just say, "If the effect is adverse...."	The text has been revised in the Final EIR/EIS.
2576	24	Page 4.3.5-5, Line 13: Concur with this section. During 408 permit review, USACE will review the recommendations provided by the geotechnical engineer to ensure federally authorized levees are not negatively impacted by the pile driving. Measures to compensate for any negative impacts may be required.	Please see response to comment 2576-8.
2576	25	Page 4.3.6-2, Lines 23-29: These lines reference a Geotechnical Exploration Plan and multiple geotechnical reports. Please provide these documents to the Corps of Engineers.	The extensive Conceptual Engineering Reports, Geotechnical Data Reports, and other documents, which provided a partial basis for the impact analysis, were not included as appendices to Chapter 9 in an effort to make the EIR/EIS as concise as possible. Such documents are available for public review at DWR's offices and will be provided to the Corps during the Corps' permit application process. Please refer to Master Response 6 for further discussion on this matter. The Lead Agencies will work with USACE to ensure these documents are provided.
2576	26	Page 4.3.11-6, Line 19: Says no long term adverse effects, but mitigation measures would, 'help reduce or avoid impacts at construction sites.' What is the effects determination for short term impacts? It's not clearly stated.	Short-term effects are described in Section 15.3.1.1 of Chapter 15, Recreation. Effects lasting less than two years would be considered short-term for purposes of this analysis and consistent with the determination that the construction effect would not last more than two years, it is considered a short term effect.
2576	27	Page 4.3.19, 4.4.19: Sections 4.3.19, 4.4.19, and 4.5.19 General. Driving sheet piles into and close by an existing levee could cause vibration-induced damage to the levee. In general, vibratory pile drivers cause lower vibration levels than impact hammers. Levees near pile driving must be monitored. Monitoring may include but not be limited to instrumentation (crest surveying and inclinometers in the slope) as well as frequent visual observation of the levees.	<p>Vibration-related impacts resulting from pile driving during construction is addressed in Final EIR/EIS Chapter 23 Noise at Impact NOI-2. The discussion indicates that vibration could result in a significant adverse impact and the lead agencies have proposed mitigation to reduce this impact which includes using alternative construction methods that would reduce the amount of vibration generated when stalling project features, including sheet-piles. The goal of this measure is to ensure vibration generated during construction does not exceed 0.2 PPV.</p> <p>Please see Appendix 6A, Section 6A.6.3.4, FEIR/EIS, for potential impacts to Delta levees from pile driving, including measures to minimize and avoid these impacts. To prevent damage to levees, the facility-specific potential for liquefaction would be investigated by a geotechnical engineer. The investigations are an environmental commitment (see Appendix 3B, Environmental Commitments, AMMs, and CMs). In areas determined to have a potential for liquefaction, the California-registered civil engineer or California-certified engineering geologist would develop design strategies and construction methods to ensure that pile driving and heavy equipment operations do not cause liquefaction which otherwise could damage facilities under 19 construction and surrounding structures, and could threaten the safety of workers at the site. Design measures to avoid pile-driving induced levee failure may include predrilling or jetting, using open-ended pipe piles to reduce the energy needed for pile penetration, using cast-in-drilled-hole piles/piers that do not require driving, or using pile jacking to press piles into the ground by means of a hydraulic system. Field data collected during design also would be evaluated to determine the need for and extent of strengthening levees, embankments, and structures to reduce the effect of vibrations. These construction methods would conform with current seismic design codes and requirements, as described in Appendix 3B. Such design standards include USACE's Engineering and Design—Stability Analysis of Concrete Structures and Soil Liquefaction during Earthquakes, by the Earthquake Engineering Research Institute.</p> <p>Please also see response to comment 2576-8.</p>
2576	28	Page 4.3.26-2, Line 31: This paragraph is confusing. It seems like this paragraph should be written more in terms of the project itself not inducing growth in a floodplain. Since the levee improvements will be localized to the intake facilities, the remainder of the area would not change. The whole paragraph seems out of place for the indirect growth inducement.	This information in Section 4.2.26.2 of the RDEIR/SEIS has been updated and included in Final EIR/EIS Chapter 30 Growth at Section 30.3.2.2 Indirect Growth Inducement Associated with Facility Construction and Operation. This section of the FEIR/EIS includes an assessment of how constructing the water conveyance facilities could facilitate growth within the Plan Area. As noted in this section of the FEIR/EIS, project facilities would not foster growth within the Plan Area because any permanent facilities, including roadways and power transmission lines, would not provide access or services to areas within the Plan Area not already reached by existing roadways or services. Modification to the existing Sacramento River levees

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			to accommodate the intakes would be to perform consistent with USACE standards; however, this action is not expected to facilitate growth because the enhancement of flood protection at the intake sites would not result in an increase in overall flood protection afforded by existing levees within the Plan Area.
2576	29	<p>Page 5-47: Cumulative Analysis and table should include the following projects:</p> <ul style="list-style-type: none"> - West Sacramento General Reevaluation Study - American River Common Features General Reevaluation - River Islands Project <p>All of the above projects have either a draft or final EIS published.</p>	Final EIR/EIS Appendix 3B identifies all the projects that were considered in the cumulative impact assessments for each resource topic. This list includes the River Islands Project. The West Sacramento General Reevaluation Study and the American River Common Features General Reevaluation Study were not included in the list of cumulative projects as they do not occur within the Plan Area. Master Response 9 provides a detailed discussion on the cumulative impact analysis and the process for selecting the projects evaluated.
2576	30	Page 5-57, Line 1: Concur with the statement that "...all of these cumulative projects including the action alternatives would be required to be designed to reduce flood affects prior to project approval" Upon development of the hydraulic models necessary for 408 permitting, DWR and Reclamation shall analyze cumulative hydraulic impacts over the full range of flood events. This additional analysis may require supplemental NEPA documentation.	Please see response to comment 2576-8.
2576	31	Appendix A, Page 3-9, Line 28: The information in transportation should be updated to not only include roadway level of service and pavement conditions associated with construction vehicle trips but also levee conditions (for those routes located upon levees) associated with construction vehicle trips. Measures that will be taken to monitor and/or avoid impacts should be included.	<p>Final EIR/EIS Chapter 19 Transportation includes information on both roadway level of service and pavement conditions. Level of service information is included in Tables 19-3 and 19-4. Pavement condition information is included in Tables 19-5 and 19-6. The criteria and thresholds for traffic analysis and potential impacts were developed as discussed in Section 19.1.2.1, using methodology from the California Department of Transportation Guidelines for Traffic Studies and the Transportation Research Board (TRB) Highway Capacity Manual. Both of these resources are standard references used in the transportation industry to determine potential impacts of a proposed project. Both resources provide capacity thresholds based on the number of lanes and facility type. The transportation impact analysis evaluates these conditions for each of the alternatives and proposes mitigation measures to address impacts on roadway level of service and damage to roadway segments.</p> <p>FEIR/EIS Chapter 5 Geology and Seismicity Impact GEO-5 includes a discussion of construction-related impacts on the stability of roadways and levees as a result of increased vehicle trips, pile driving, and other construction activities. The lead agencies will comply with the USACE Engineering and Design—Design of Pile Foundations, EM 1110-2-2906, 1991 and USACE Engineering and Design—Earthquake Design and Evaluation for Civil Works Projects, ER 1110-2-1806, 1995, both of which would reduce the potential risk for increased likelihood of loss of property or personal injury from structural failure resulting from construction-related ground motions.</p> <p>In addition, the lead agencies have committed to implementing mitigation measures TRANS-2a and TRANS-2b which would limit and in some instances prohibit construction traffic on physically deficient roadway segments. These mitigation measures are described in FEIR/EIS Chapter 19 Transportation.</p>
2576	32	Appendix A, Page 3-28, Line 15: This line describes the perimeter berm as providing the same level of flood protection as the levee at each intake site. Clarify the State intends the levee and perimeter berm to provide 200 year level of protection which is greater than the current levee.	Please see response to comment 2576-8.
2576	33	Appendix A, Page 3-28, Line 17: Recommend deleting "and would increase public flood protection during construction"	The text in Chapter 3 of the FEIR/EIS has been modified to remove the reference to increasing flood protection during construction.

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2576	34	Appendix A, Page 3-31, Line 32: It's unclear what the "design flood condition" is. Recommend clarifying.	The intent of the language is that the drying lagoons would be an element of each intake as such would be afforded the level of flood protection to the same degree as the other intake facilities. This text has been clarified in Chapter 3, Description of Alternatives. Please also see response to comment 2576-8.
2576	35	Appendix A, Page 3-50, Line 34-36: Driving sheet piles into and close by an existing levee could cause vibration-induced damage to the levee. In general, vibratory pile drivers cause lower vibration levels than impact hammers. Levees near pile driving must be monitored. Monitoring may include but not be limited to instrumentation (crest surveying and inclinometers in the slope) as well as frequent visual observation of the levees.	Please see response to comment 2576-27.
2576	36	Appendix A, Page 3-80, Line 3: The Yolo Bypass is a critical facility of the federally authorized Sacramento River Flood Control Project and the Yolo Bypass Wildlife Area is also a federally authorized project. Any modifications within the Yolo Bypass, to include the wildlife area should be coordinated with USACE for 408 permission.	Please see response to comment 2576-8.
2576	37	Appendix A, Page 3-92, Line 14: The nonphysical barriers may require 408 permission. Please coordinate with the USACE team.	Please see response to comment 2576-8.
2576	38	Appendix A, Page 6-2, Line 37: Is this title out of place?	The heading Analysis of Potential Changes in Conditions that Could Affect Flood Management Along Major Rivers has been incorporated as Section 6.3.1.2 Methods for Analysis of Flood Management along Major Rivers of the Final EIR/EIS.
2576	39	Appendix A, Page 6-7, Line 11: Recommend being specific that the design flood elevation will be based on the 200 year flood event.	The lead agencies acknowledge that modification made to the flood control levees as part of the CWF will be made based on State of California and Federal flood protection standards. Please see response to comment 2576-8.
2576	40	Appendix A, Page 6-8, Line 5: Recommend being specific that the design flood elevation will be based on the 200 year flood event.	The lead agencies acknowledge that modification made to the flood control levees as part of the CWF will be made based on State of California and Federal flood protection standards. Please see response to comment 2576-8.
2576	41	Appendix A, Page 6-8, Line 25: The last sentence is confusing. Do you mean any levee alterations outside the new facilities will be designed to provide the same level of protection as they currently have? The sentence prior states the levees at the new facilities will be designed for 200-year level of protection which is greater than current.	The Mitigation Monitoring and Reporting Plan provides a detailed discussion of the performance parameters of SW-7: Implement Measures to Reduce Flood Damage. The intent of the mitigation measure is to ensure that all new and modified flood control features would provide a 200-year level of protection.
2576	42	Appendix A, Page 9: There is no Table 9-14 or Table 9-17 (expected PGA and 1.0-Sa). Also the first actual table in the chapter is numbered 9-26. This is confusing.	Table numbering in the Chapter 9 portion of Appendix A of the RDEIR/SDEIS was carried over from the Draft EIR/EIS. The Lead Agencies regret any confusion this approach may have caused. Table numbering for Chapter 9 of the Final EIR/EIS is consecutive and all references to tables in the Final EIR/EIS are correct.
2576	43	Appendix A, Page 9: Several sections of this chapter reference a seismic study. Please provide this study to the Corps of Engineers.	The Lead Agencies will work with the USACE to provide all requested information.
2576	44	Appendix A, Page 9: Alternative 4 GE0-1through GE0-15. Much of this information is repetitive and could be condensed into fewer impacts.	Because the types and mechanisms of the impacts may differ, the lead agencies organized the impacts according to those that could occur during construction and during operations, and according to those associated with the conveyance facilities and with the restoration opportunity areas. Therefore, the impacts presented reflect the minimum number that was possible, while providing the reader with sufficient

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			information to understand the differences between the hazards.
2576	45	Appendix A, Page 9-13, Line 17: Elsewhere in the document it is stated that the perimeter levee and building pad would be designed to provide protection against the 200 year flood. Please revise for consistency.	The text in the RDEIR/SDEIS Chapter 9 (Appendix A) states that we will exceed PL 84-99 standards, which is consistent with the statement elsewhere in the document that the project would meet a 200-year level of flood protection for new facilities. Therefore, no change to the Chapter 9 text is required.
2576	46	Appendix A, Page 9-23, Line 2-6: There is some good liquefaction information here. Why was this information not included in previous seismic-related impact discussions in Appendix A Chapter 9?	This information was not included in previous seismic-related impact discussions in the Draft EIR/EIS because the DRMS report and levee failure vulnerability group map upon which the revised material is based was discovered after the previous discussion was prepared.
2576	47	Appendix A, Page 9-25, Line 36-41: These lines relate to mitigation measures during construction, while the subject impact (GEO-8) is during operation of the project.	The commenter is correct in pointing out that the text in lines 36-40 (but not line 41) relate to measures to be implemented during construction, contrary to the subject impact (GEO-8), which pertains to the operations phase of the project. Cal/OSHA Workplace Injury and Illness Prevention Program requirements apply to both construction sites and (non-construction site) workplaces. Therefore the text throughout Chapter 9 has been revised accordingly to refer to construction sites during the construction phase and to workplaces during the operations phase.
2576	48	Appendix A, Page 10-9, Line 7-9: The process of jet-grouting creates cement-laden cuttings (spoils) that have a high pH while wet. In order to reduce the pH, settling basins to dry the cuttings would be required. Impacts associated with the settling basins should be evaluated.	Jet grouting does create cement laden spoils that need to be handled, however they can be contained within mobile tanks that are later carried to proper disposal sites instead of constructing temporary retention ponds. Tanks have been used in many urban projects in the San Francisco Bay Area where there is no space to create larger ponds. Depending on the final design, these spoils may undergo centrifugation to decrease moisture content.
2576	49	Appendix A, Page 10-9, Line 7-9: The depth of jet grouting should be included as well as any safety concerns associated with construction.	The depth of jet grouting will be defined when the depth of the tunnels is finalized. Jet grouting treatment will be different for different applications. For a "safe haven" the jet grouting zone may be one half to one diameter below the invert of the tunnel. For the protection of surface structures, the jet grouting zone will depend on the structure, but may range from a depth of 50 ft to the crown of the tunnel. This will be defined during next engineering phases.
2576	50	Appendix A, Page 10-13, Line 19: Add the word, "Other," to "No mitigation is required."	The existing text is correct, by conforming to the CBC and other applicable design standards, potential effects associated with expansive and corrosive soils and soils subject to compression and subsidence would be offset. Therefore, this impact is not considered adverse or significant and no mitigation is required for Impact SOILS-4 under Alternative 4.
2576	51	Appendix A, Page 17: Add Wild and Scenic Rivers Preservation Act & California Wild and Scenic Rivers Preservation Act	There are no federal or state designated Wild and Scenic Rivers in the Plan Area. The FEIS/FEIR has been revised to specifically state this.
2576	52	Appendix A, Page 17: It would be helpful to have a table showing the alternatives and impacts and which are not significant, mitigated to less than significant, and significant and unavoidable. Not sure if a chart like this exists elsewhere in the document.	The Executive Summary of the Final EIR/EIS contains a table identifying all impacts and their levels of significance both before and after mitigation has been applied. The Executive Summary has also been expanded to include a summary discussion and comparison of impacts across alternatives. This additional summary allows readers to more easily determine not only the significance of an impact across all alternatives but also the relative intensity of an impact.
2576	53	Appendix A, Page 17-4: Should be updated with new alternatives. Were KOP's [Key Observation Points] developed based on those alternatives as well?	As described in the Executive Summary, the new alternatives (Alternative 4A, 2D, and 5A) have the same alignment and project components as Alternative 4. However, the primary difference between Alternatives 4 and 4A is the amount of restoration occurring through environmental commitments and the difference between Alternatives 4/4A (Intakes 2, 3, and 5) and Alternatives 2D (Intakes 1, 2, 3, 4, and 5) and 5A (Intake

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			<p>2) are the number of intakes. The location of intakes has not changed and, therefore, the existing KOPs represent these new alternatives. Appendix page 17-4 does not need to be updated because the new alternatives are analyzed in Chapter 4 (refer to pages 4.2-61, 4.3.13-1, 4.4.13-1, and 4.5.13-1) of the RDEIR/RDEIS. Chapter 17 of the FEIS/FEIR includes the analysis for all alternatives, including the new alternatives, within the chapter.</p> <p>It should be noted that the BDCP is no longer the preferred alternative. The preferred alternative is now Alternative 4A and no longer includes an HCP. Alternative 4A has been developed in response to public and agency input. The EIR/EIS analyzes all alternatives.</p>
2576	54	Appendix A, Page 17-5, Line 24: This would be a NEPA effect as well as CEQA. Or is this the same as "nighttime glare"? If so, remove the second subheading. The structure of this page is a little confusing as it's currently written.	<p>Only portions of the document with changes are included in the Appendix A of the RDEIR/RDEIS (refer to Executive Summary page ES-11. Lines 35-40). The sub headers "Daytime and Nighttime Glare" and "Nighttime Lighting" both fall under NEPA Effects for Impact AES-4. The CEQA conclusion did not change and was, therefore, not republished in the in the RDEIR/SDEIS.</p> <p>Final EIR/EIS Chapter 17 Visual and Aesthetic Resources include a discussion of night and glare under Impact AES-4: Creation of a New Source of Light or Glare That Would Adversely Affect Views in the Area as a Result of Construction and Operation of Conveyance Facilities.</p> <p>The impact discussion for this topic falls under both NEPA and CEQA.</p>
2576	55	Appendix A, Page 17-13 Sections 17.3.3.4- 17.3.3.8 only address one AES impact for each alternative. Why is it separate? I'm unclear as to what parts of the original document are being changed in this section since these sections have quite a bit more information in the original document.	Only portions of the document with changes are included in the Appendix A of the RDEIR/RDEIS (refer to Executive Summary page ES-11. Lines 35-40). The entire impact discussion is included in Final EIR/EIS Chapter 17 Visual and Aesthetic Resources.
2576	56	Appendix A, Page 17-43, Line 14: Is this supposed to be under Alternative 1A discussion?	This is referencing Mitigation Measure AES-1a under Impact AES-1 for Alternative 4 (refer to page 17-31).
2576	57	Appendix A, Page 17-47 (2013), Line 21: 17.3.3.1 was missing NEPA summary in the original document. A NEPA summary was not added in the RDEIR.	This is the format of the No Action Alternative. The NEPA analysis is not missing and includes all the text preceding the header "CEQA Conclusion".
2576	58	Appendix A, Page 18-1, Line 16: Rumsey Indian Rancheria should be Yocha Dehe Indian Community, also add Shingle Springs Band of Miwok Indians and Wilton Rancheria.	These changes have been incorporated into Final EIR/EIS to Chapter 18 Cultural Resources.
2576	59	Appendix A, Page 18-3, Line 23: Remove Reclamation, they are no longer a party to the PA [Programmatic Agreement].	These changes have been incorporated into Final EIR/EIS Chapter 18 Cultural Resources.
2576	60	Appendix A, Page 18-9, Line 4-5: The USACE is the only Federal agency currently entering into a Programmatic Agreement. Recommend changing throughout.	These changes have been incorporated into Final EIR/EIS Chapter 18 Cultural Resources.
2576	61	Appendix A, Page 19-102, Line 6 and Page E-14, Line 34: It says that the "diversions are limited during low flows by operational rules." Where can I find these rules? How is the commitment to these rules formalized and regulated? Have these operational rules been verified by appropriate models?	The CWF operational rules will be finalized as part of the State Water Resource Control Board and ESA and CESA environmental review and permitting processes. A discussion of the operational criteria for all alternatives including Alternative 4A provided in Final EIR/EIS Chapter 3 Alternatives at Section 3.3.12, Operational Components and Section 3.6.4.2, North Delta and South Delta Water Conveyance Operational Criteria.
2576	62	Appendix A, Page 19-102, Line 10 and Page E-14, Line 38: How can you model maximum intake (15,000 cfs [cubic feet per second]) at lowest river flows? Based on USGS gage data it would appear that the river does not have enough water for 15,000 cfs at low flows like this summer (Sep 2015). Would this drain the river? This would appear to be more	The CWF operational rules will be finalized as part of the State Water Resource Control Board and ESA and CESA environmental review and permitting processes. A discussion of the operational criteria for all alternatives including Alternative 4A provided in Final EIR/EIS Chapter 3 Alternatives at Section 3.3.12, Operational Components and Section 3.6.4.2, North Delta and South Delta Water Conveyance Operational

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		than a 0.7 ft decrease (pg E-15, ln 2).	Criteria. Final EIR/EIS Appendix 5A Section C CALSIM II and DSM2 Modeling Results at Table C69-2-6 provide information on the surface elevation of the Sacramento River downstream of the North Delta Intakes for Alternative 4A. (Similar information is included for all alternatives included in the Final EIR/EIS, including Alternatives proposing 15,000 cfs diversion facilities.) Differences in predicted surface elevation between No Action conditions and Alternative 4A would be small, ranging from 5-tenths of a foot to 1-tenth of a foot.
2576	63	Appendix A, Page 19-102, Line 13, and Page E-14, Line 41: The reference to EM 110-2-2602 page 3-8 is about the advantages of building dual locks and does not have anything to do with draft depths in the Sacramento River. Please provide the appropriate reference that the depth of 16.5 feet is sufficient for navigation.	The lead agencies acknowledge your concern about navigation depths. Figure 3-1 on page 3-8 of "Planning and Design of Navigation Locks", United States Army Corps of Engineers, EM 1110-2-13-2602 (September 30, 1995) depicts barge and towboat dimensions, with the deepest draft being 9 feet. This is substantially less than the 16.5 foot channel depth specified.
2576	64	Appendix A, Page 19-135, Line 42: If the temporary barge unloading facility is located along the Sacramento River at Walnut Grove, 408 permission will be required to include detailed hydraulic analysis.	Please see response to comment 2576-8. Please refer to Section 1F.4.2 in Appendix 1F of the FEIR/EIS for information on future Section 408 compliance and project features that may require hydraulic analysis. The hydraulic study will analyze all proposed project features, including those that do not affect federal project levees but that may affect hydrology and hydraulics.
2576	65	Appendix A, Page 23-1, Line 36: Physical damage to levees from groundborne vibration should be another primary issue.	Please see response to comment 2576-27. FEIR/EIS Chapter 5 Geology and Seismicity Impact GEO-5 includes a discussion of construction-related impacts on the stability of roadways and levees as a result of increased vehicle trips, pile driving, and other construction activities. The lead agencies will comply with the USACE Engineering and Design—Design of Pile Foundations, EM 1110-2-2906, 1991 and USACE Engineering and Design—Earthquake Design and Evaluation for Civil Works Projects, ER 1110-2-1806, 1995, both of which would reduce the potential risk for increased likelihood of loss of property or personal injury from structural failure resulting from construction-related ground motions.
2576	66	Appendix A, Page 23-67, Line 1: Impact NOI-2 should include a discussion of the impacts to levees from vibration or at least reference chapter 9 for more information.	Please see response to comment 2576-27. FEIR/EIS Chapter 5 Geology and Seismicity Impact GEO-5 includes a discussion of construction-related impacts on the stability of roadways and levees as a result of increased vehicle trips, pile driving, and other construction activities. The lead agencies will comply with the USACE Engineering and Design—Design of Pile Foundations, EM 1110-2-2906, 1991 and USACE Engineering and Design—Earthquake Design and Evaluation for Civil Works Projects, ER 1110-2-1806, 1995, both of which would reduce the potential risk for increased likelihood of loss of property or personal injury from structural failure resulting from construction-related ground motions.
2576	67	Appendix A, Page 23-69, Line 13: Mitigation measure NOI-2 should include practices to monitor and mitigate for vibration impacts to levees or at least reference chapter 9 for more information.	Please see response to comment 2576-27. Final EIR/EIS Chapter 23 Noise, Mitigation Measure NOI-2 Employ Vibration-Reducing Construction Practices during Construction of Water Conveyance Facilities includes monitoring measures for all construction activities that would result in vibration, regardless of the type of structure that could be affected. A more detailed discussion of this mitigation measure is provided in the Mitigation Monitoring and Reporting Plan.
2576	68	Appendix A, Page E-2, Line 23: Remove reference to EO 11998	The reference to EO 11998 has been removed.
2576	69	Appendix A, Page E-4, Line 37: We do not make a preliminary LEDPA [Least Environmentally Damaging Practicable Alternative] concurrence. The LEDPA determination is made in the Corps' Record of Decision. Only in circumstances where there is an MOU describing a preliminary LEDPA process for a specific project would we make a preliminary determination or concurrence.	The lead agencies appreciate the clarification of this topic.
2576	70	Appendix A, Page E-5, Line 1: There is not a preliminary concurrence. The final plan would be approved prior to issuing the permit.	The lead agencies appreciate the clarification of this topic and process.

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2576	71	Appendix A, Page E-9, Line 29: Which functional assessment methodology will be used?	The functional assessment methodology will be determined as the CWA permitting process proceeds.
2576	72	Appendix A, Page E-14, Line 32: Alternative 4A would include intakes 2, 3, and 5	The text at issue appeared in Appendix E of the RDEIR/SDEIS. The text now appears in Appendix 1F of the Final EIR/EIS and has been corrected on page 1F-13 to reflect the correct intakes for Alternative 4A.
2576	73	Appendix A, Page E-16, Line 15: Where is the removal and restoration of the barge facilities described?	A description of the barge landings is provided in Final EIR/EIS Chapter 3 Alternatives at Section 6.1.1.1 Temporary Access and Work Areas for Intake, Canal, and Pipeline/Tunnel Construction. Avoidance and minimization measures will be implemented to avoid or minimize effects on aquatic species and habitat related to barge operations, by establishing specific protocols for the operation of all project-related vessels at the construction and/or barge landing sites. AMM7 also includes monitoring protocols to verify compliance with the plan and procedures for contingency plans. Measures in AMM7 will be included in a Barge Operations Plan. Finally, all footprint related impacts were considered in each resource chapter. As an example, impacts on wildlife habitat and vegetation of the barge landings were considered as part of the impact assessment including the Final EIR/EIS Chapter 12 Terrestrial Biological Resources.
2576	74	Appendix A, Page E-21, Line 11: Concur. Detailed engineering design and hydraulic analysis will be required for the 408 review. The information contained within the current CEQA/NEPA documents does not fully meet this level of detail. Additional NEPA compliance will likely be required after additional information regarding engineering and hydraulic analyses are provided to USACE.	Please see response to comment 2576-27. The lead agencies acknowledge that additional information may be needed to address the Corps need for detailed levee designs for purpose of its Section 408 compliance process. The discussion in Final EIR/EIS Appendix 1F recognizes that additional environmental documentation may be required to complete the Section 408 compliance process.
2576	75	Appendix A, Page E-21, Line 34: Recommend: "As described in the surface water section and with information available at this time,..."	This change has been made in Appendix 1F.
2576	76	Appendix A, Page E-22, Line 17: Evaluation of cumulative hydraulic effects will also be required.	Please see response to comment 2576-27. The lead agencies acknowledge that additional information may be needed to address the Corps need for detailed levee designs for purpose of its Section 408 compliance process. The discussion in Final EIR/EIS Appendix 1F recognizes that additional environmental documentation may be required to complete the Section 408 compliance process.
2576	77	Appendix 3C: Temporary Impacts- Footnote 1 to Table E-1, App E, pg 19, is the only place in the Document where it states that temporary impacts will be considered permanent if they are expected to last more than one year. It should be stated somewhere in the document, either in App 3C or in the main body, that construction impacts lasting more than one year will be considered permanent by the Corps for the Section 404/10 Department of the Army permit.	Throughout the EIR/EIS, impacts are identified as temporary or permanent. These terms apply differently to different resources and are defined, where relevant, in each individual resource chapter (Chapters 5–30). Due to the nature of the impact, in some cases, impacts are treated as permanent, even though the impact mechanism would end following construction of water conveyance facilities. Please refer to Chapter 4 of the EIR/EIS for more information regarding the approach to the environmental analysis.
2577	1	As stated in the SDEIS, the purpose and need for the WaterFix project, as was the case for the BDCP, is to advance the co-equal goals set forth in the Delta Reform Act of 2009. Those are (1) to provide a more reliable water supply for California, and (2) to protect, restore, and enhance the Delta ecosystem. EPA recognizes the crucial public health, economic, and ecological importance of both goals. The proposed project and the alternatives evaluated in the SDEIS support the water reliability component, but largely defer actions necessary to protect water quality and aquatic life to the future. As has been discussed throughout the development of this project, the most essential decision for achieving the desired balance between water reliability and restoration of the Bay-Delta ecosystem is how freshwater flows through the Delta will be managed. This key decision is not described in the SDEIS and is, instead, deferred to future regulatory processes administered by the State of California in consultation with federal resource and regulatory agencies. The decision by the State of California and Reclamation to defer these decisions means that the impacts of the Water Fix project on the Delta ecosystem cannot be	The preferred alternative, 4A, the California WaterFix, includes the elements that made up CM1 of the BDCP, as originally presented in the Draft EIR/EIS. Both alternatives are presented as part of the Final EIR/EIS. The addition of the North Delta Diversion facilities, located outside the sensitive south delta fish habitat, utilizing state of the art fish screens and current technology to minimize fish entrainment and other effects to listed fish species is expected to contribute to the second goal of the Delta Reform Act to protect, restore, and enhance the Delta ecosystem. In addition, through the initial operating criteria and additional measures proposed through the CEQA/NEPA, ESA, and CESA processes, the California WaterFix proposes operations that are protective than existing regulatory protections currently in place under the 2008/2009 BiOps and Bay Delta WQCP implemented through D-1641. It should be noted that DWR and Reclamation have reinitiated consultation for the long term operations for the SWP and CVP. CEQA and NEPA require the lead agencies to determine what the potential impacts may be to the existing environment, and compared to the No Action Alternative, if California WaterFix or alternatives were approved. CEQA and NEPA do not require a specific analysis of how to fix existing issues related to the existing environment or the relative adequacy of existing regulations to protect sensitive resources.

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		<p>fully evaluated at this time, and that any attempt to describe the environmental impacts of the project is necessarily incomplete. Once those decisions are concluded, the evaluation of possible impacts and consideration of alternatives can be completed.</p>	<p>It would be speculative to estimate what, if any, additional flows might be necessary as part of the larger SWP and CVP long term operations, as identified through the reinitiation of consultation process. It would also be speculative to estimate that flows might be imposed as part of the SWP's and CVP's proportionate share of additional meeting revised standards, as identified through the SWRCB's Bay Delta WQCP update. The lead agencies assert that these regulatory processes, and not the CEQA/NEPA analysis for the California WaterFix and alternatives, are the more appropriate forums to determine how the SWP and CVP would go about "achieving the desired balance between water reliability and restoration of the Bay-Delta ecosystem is how freshwater flows through the Delta will be managed."</p> <p>The lead agencies believe that the Final EIR/EIS, which includes the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS, is complete in the evaluation of direct, indirect, and cumulative impacts (using the best available science and modeling), that project description is complete and satisfies the requirements of NEPA (and CEQA), and that the purpose and need and project objectives are also complete and satisfy the requirements of NEPA and CEQA. The lead agencies believe that the Final EIR/EIS, which includes the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS, provides the public and decision-makers with sufficient information regarding the potential impacts and proposed mitigation measures, achieving a good faith effort at full disclosure in taking a hard look at the issues.</p> <p>The lead agencies acknowledge, however, that the document addresses a number of topics for which some scientific uncertainty exists. Such uncertainty can give rise to differing opinions as to what conclusions may be reached.</p>
2577	2	<p>Aquatic Habitat and Water Quality:</p> <p>The project has been significantly revised since the initial DEIS, yet the SDEIS relies on modeling results that are based on the BDCP alternatives. Information in the SDEIS indicates that the modeling completed for the BDCP alternatives is not necessarily representative of the environmental effects resulting from the WaterFix alternatives. NMFS and FWS concluded in 2008 and 2009, respectively, that continued operation of the CVP/SWP would jeopardize the existence of Delta smelt, winter-run Chinook salmon, green sturgeon and several other fish species. Even with the predictive limitations of the modeling, the SDEIS predicts a loss of valuable aquatic habitat for many fish species in the Delta and upstream tributaries due to the combined effects of the WaterFix project, CVP/SWP exports, climate change, and increased water diversions upstream of the Delta in the Sacramento River Basin. These species have experienced sharp population declines in the last decade and showed record low abundance over the last five years. Information presented in the SDEIS shows that the WaterFix project could reduce habitat conditions for Delta smelt, winter-run Chinook salmon, green and white sturgeon, striped bass, and American shad, and result in a decline of longfin smelt abundance. For example, according to the SDEIS, winter-run Chinook salmon and sturgeon may be negatively impacted when migrating past new intakes, because significant volumes of freshwater flows are diverted at the intakes resulting in less water that is also of lower quality downstream of the intakes. The SDEIS also predicts that selenium concentrations in sturgeon would increase by 12-19% as a result of the proposed project, and would exceed the FWS and NMFS benchmark for adverse impacts to sensitive species.</p> <p>The modeling results presented in the SDEIS show predicted exceedances of a salinity standard at both Prisoner's Point and Emmaton. The water quality modeling predicts that the western Delta and Suisun Marsh will become saltier over time, which is likely to cause increased exceedances of chloride criteria near municipal water supply intakes. Mitigation actions are identified in the SDEIS to prevent exceedances, and the compliance history</p>	<p>As noted in the comment, the BDCP is no longer the preferred alternative. The preferred alternative is Alternative 4A and no longer includes an HCP. The lead agencies believe the hydrologic modeling conducted for each alternative, including Alternative 4A, is an accurate tool for helping to assess the environmental impacts that would occur under each BDCP and CWF alternative. The RDEIR/SDEIS modeling used for the impact analysis of Alternatives 4A, 2D, and 5A has been updated for the Final EIR/EIS.</p> <p>The Final EIR/EIS lists several potentially significant impacts related to water quality and sensitive fish species (please also see the analysis presented in the Biological Assessment and CESA Section 2081 Incidental Take Permit Application):</p> <p>Final EIR/EIS Impact AQUA-134: Effects of Contaminants Associated with Restoration Measures on Green Sturgeon provides the results of the evaluation of the potential impacts on green sturgeon as a result of restoration actions occurring under Alternative 4A. The assessment included consideration of changes in the production, mobilization, and bioavailability of methylmercury, selenium, copper, and pesticides in the aquatic system. The assessment concluded that the small amount of area to be restored would not result in a substantial change in exposure potential of green sturgeon to contaminants. FEIR/EIS Impact</p> <p>Final EIR/EIS AQUA-152: Effects of Contaminants Associated with Restoration Measures on White Sturgeon makes a similar conclusion of the potential impacts on white sturgeon as a result of change in exposure potential to contaminants.</p> <p>Final EIR/EIS Impact AQUA-39: Effects of Water Operations on Entrainment of Chinook Salmon considers the overall impact on Chinook salmon as a result of operation of Alternative 4A. The analysis concludes that operation of Alternative 4A would not be adverse and would provide a benefit to the species because of the reductions in entrainment loss and mortality.</p> <p>Master Response 14 provides a discussion of the water quality analysis in the Draft EIR/EIS, RDEIR/SDEIS, and Final EIR/EIS that addresses electrical conductivity and chloride. As noted in Master Response 14, the analysis in the Final EIR/EIS concludes that the operation of the Alternative 4A, as measured at Emmaton,</p>

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		<p>shows that salinity standards have rarely been exceeded in non-drought years. Nevertheless, if the proposed project operations contribute to a general increase in salinity in the Delta, the flexibility that Reclamation and DWR have to operate the system to ensure that water quality criteria are met will be seriously diminished, and the two agencies will have little room for error in operating the system to protect beneficial uses and achieve the co-equal goals.</p> <p>While the impacts stated above may be mitigated by appropriately timed increased flows and habitat restoration, the WaterFix project does not propose additional flows in the Delta, nor does it propose significant habitat restoration. CVP/SWP operation scenarios that propose additional outflow, such as BDCP Alternatives 7 and 8 from the DEIS, could provide substantially more water for resident and migratory fish and provide benefits to aquatic life; however, these were not evaluated as alternatives in the SDEIS.</p>	<p>would not result in significant impacts due to exceedance of EC objectives. In addition, Alternative 4A would have less adverse water quality effects in the western Delta related to EC, and fewer exceedances of the fish and wildlife EC objectives than previously disclosed in the Draft EIR/EIS for Alternative 4 and originally presented for Alternative 4A in the RDEIR/SDEIS. Additional discussion of the EC and chloride analyses is included in Section 2.2.1 of the RDEIR/SDEIS, and Chapter 8, Water Quality and Appendix 8H, Electrical Conductivity, of this Final EIR/EIS.</p> <p>As noted in the methodology discussion in FEIR/EIS Chapter 8 Water Quality, the water quality impact assessment is, in part, dependent on the hydrologic modeling conducted for the BDCP and CWF. Master Response 30 provides an overview of the hydrologic modeling effort conducted for the BDCP and CWF. The modeling results are included in Chapter 5 Water Supply and associated appendices. This analysis provides estimates of Delta outflow and water supply effects for each alternative considered in the Final EIR/EIS.</p>
2577	3	<p>Several pending regulatory actions are important to understanding the full impacts of the project. First, the State Water Resources Control Board (State Water Board) will be acting on Reclamation's and DWR's recent request to add points of freshwater diversion from the south Delta to the Sacramento River in the north Delta (at the northern end of the new conveyance facility). This State regulatory action is likely to include terms and conditions, including flow requirements, that could modify proposed WaterFix operations sufficiently to produce environmental and water supply effects that have not been analyzed in the SDEIS. Additionally, the State Water Board is in the midst of comprehensively updating water quality standards through the Bay-Delta Water Quality Control Plan (Bay-Delta WQCP). The updated standards could result in freshwater flow management provisions and corresponding changes to water supply diversions throughout the watershed that have not been analyzed in the SDEIS. The Delta is listed as impaired for several water quality parameters under Section 303(d) of the CWA [Clean Water Act]. EPA is working closely with the State Water Board to ensure that the revised standards are sufficient to address impaired water quality conditions in the Delta and reverse the declines in the fish species. The updated standards could result in altered environmental and water supply impacts that have not been analyzed in the SDEIS.</p>	<p>The petition for change point of diversion being considered by the State Water Resources Control Board, consistent with the project description in the Final EIR/EIS, is to add a diversion point in the North Delta on the Sacramento River for the SWP and CVP. Prior to the SWRCB in making its decision in this water right hearing process, they require a complete CEQA document be provided by DWR, as such, SWRCB is identified as a Responsible Agency for CEQA compliance purposes. Therefore, this EIR cannot possibly incorporate the SWRCB water rights decision as it is a requirement to be complete, prior to the SWRCB making that decision. The SWRCB has participated in the BDCP/CWF EIR/EIS and it reflects input that staff has requested to assist in supporting the water rights decision-making process. The lead agencies believe the Final EIR/EIS is complete and provides the information necessary for the SWRCB to make a decision regarding the petition.</p> <p>In the notice of the change petition hearing, the SWRCB discussed the timing and relationship between the Bay Delta WQCP update and the CWF hearing. The SWRCB acknowledged that the WQCP update will be addressing broader issues related to appropriate protections of beneficial uses in the Bay Delta but that the hearing on the CWF should not be delayed because of this. It was recognized that, as a part of consideration of the proportionate responsibility of legal users of water in the Delta to meet any additional needs beyond current standards, the WQCP update may require the SWRCB to revisit the water rights decision for the change of point of diversion for the CWF.</p>
2577	4	<p>ESA Section 7 consultation with FWS and NMFS regarding the construction and operation of new conveyance facilities is underway. We [EPA] understand that the FWS and NMFS are not relying solely on the SDEIS for the Section 7 consultation process and that additional information is being generated to identify criteria for operating the new WaterFix facilities, to be included in the Biological Opinions and Incidental Take Permits. This information and such operating criteria could result in environmental impacts that have not been analyzed in the SDEIS.</p>	<p>The lead agencies believe that the EIR/EIS adequately and conservatively evaluates all potential impacts that could result from the proposed project or any of the alternatives evaluated. However, if additional information is presented that could result in environmental impacts, additional CEQA/NEPA analysis would be conducted by the lead agencies. The resource analysts that prepared the biological resources impact assessments in the EIR/EIS also prepared the analysis for the Biological Assessment, supplemental information for the formal consultation under Section 7 of the ESA, and the CESA Section 2081(b) Incidental Take permit Application. The information and analyses within all of these efforts have been coordinated and integrated into this Final EIR/EIS. If the outcome of the ESA Section 7 and CESA Section 2081(b) processes consider additional information or add requirements that change the conclusions in the Final EIR/EIS leading to new significant impacts or substantially increase the severity of already disclosed impacts, additional CEQA and NEPA may be required.</p>
2577	5	<p>Construction of WaterFix's new water intake and conveyance infrastructure would require authorization under Clean Water Act [CWA] Section 404, as well as a Rivers and Harbors Act Section 14 modification of levees permit, from the U.S. Army Corps of Engineers. Water quality and aquatic life analyses in the SDEIS show that the proposed project may cause or contribute to violations of state water quality standards and significant degradation of</p>	<p>The lead agencies recognized that construction of the CWF water intakes on the Sacramento River as well as other construction activities within the project footprint will likely require approvals from other permitting agencies, including the USACE. These additional approvals are discussed in Chapter 1 Introduction of the Final EIR/EIS and specific requirements for the USACE permitting is described in detail in Appendix 1F Supplemental Information of USACE Permitting Requirements. Appendix 1F provides information on Clean</p>

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		waters of the U.S.; therefore, additional avoidance and minimization of environmental impacts and/or compensatory mitigation may be necessary in order to comply with CWA Section 404. It is also likely that additional information and analysis not included in the SDEIS will be required to support those permit decisions and that information and analysis will better inform the overall evaluation.	Water Action Section 404, Rivers and Harbors Act Section 10, Rivers and Harbor Act Section 14, National Historic Preservation Act Section 106, and Executive Order 11988. It should also be mentioned that the wetlands and other waters impact analysis (including the development of mitigation) in the Final EIR/EIS, Chapter 12, Biological Resources, was developed in consideration of the USACE's regulatory requirements. It is expected that the Final EIR/EIS will be consistent with the USACE permitting application process, including the 404(b)(1) alternatives analysis. However, the lead agencies acknowledge that the USACE permitting process, including the Section 408 review process, will generate additional detail that may cause the lead agencies to prepare supplemental CEQA and NEPA compliance.
2577	6	Regulatory processes will develop new data and likely new compliance requirements beyond those provided in the SDEIS. EPA understands that these as yet incomplete regulatory requirements will be addressed through the pending actions by the State Water Resources Control Board, FWS, NMFS, and Corps of Engineers. These key decisions, and the analysis that will support them, are not yet done. Our statutory responsibility is to review the NEPA document that is in front of us at this time; however, the reality is that these future regulatory processes will have an important bearing on the project. Because these subsequent regulatory processes are likely to generate real world operational scenarios that are significantly different from the operations proposed in the SDEIS, the information is not yet available to reach definitive conclusions concerning the environmental impacts of the proposed project.	<p>Please see responses to comments 3, 4, and 5. If adopted, the proposed project would be required to meet any new regulatory standards, as is the case with any project. However, the proposed project was developed with the pending State Water Resources Control Board decision, and ESA Section 7, CESA Section 2081(b), and USACE permitting processes in mind.</p> <p>As previously stated, the EIR/EIS will necessarily need to be complete prior to the SWRCB's (and CDFW's) decision. However, as described in Appendix 3A, Identification of Water Conveyance Alternatives, EIR/EIS, comments and suggestions received from the State Water Board were influential in defining the range and content of alternatives considered in the EIR/EIS, including the State Water Board's Delta Flow Criteria Report, prepared pursuant to the Sacramento-San Joaquin Delta Reform Act of 2009. Scoping comments from the State Water Board included requests for an alternative providing for reduced diversions and an alternative incorporating changes to Delta outflows (and potentially inflows) that would reflect a more natural hydrograph. The Lead Agencies determined that an additional alternative would be required to be responsive to the State Water Board's comments. Informed by these comments, as well as several letters from the State Water Board to the Natural Resources Agency, DWR met with State Water Board staff to identify a general approach to model an increased spring Delta outflow alternative. This alternative was designed to increase spring Delta outflow by approximately 1.5 million acre-feet, on average, above the NEPA baseline assumptions. This became Alternative 8 as analyzed in the EIR/EIS.</p> <p>The proposed operations analysis was performed in parallel with the ESA Section 7 and CESA Section 2081(b) processes. As described in Section 3A.10.6, consideration of outflows necessary to achieve biological goals and objectives for delta and longfin smelt have been explicitly incorporated into the proposed project through a decision tree process that allows for alternative outcomes for water operations based on the results of targeted research and studies. See Master Response 44 for more information regarding the decision tree process.</p>
2577	7	The tunnels that are discussed in detail in this draft NEPA document are an important improvement for water reliability, but the choices that will affect the operation of the tunnels, and thus the overall impacts of the project, will not be made until future regulatory actions are completed. These future decisions will supply the missing pieces necessary to determine the environmental impact of the entire project. The unusual circumstances of this project mean that the information is not yet available for a complete evaluation of environmental impacts -- and for that reason a rating of "3" (Inadequate) for the SDEIS is required -- but EPA expects that the project will continue to move forward, with those necessary additional pieces to be supplied as the later regulatory processes proceed. Under the unique circumstances of this case, the additional data, analysis and public input associated with these future regulatory processes are expected to provide the needed supplemental information to allow a full review of the environmental impacts without requiring another draft supplemental EIS. EPA will have the opportunity to support Reclamation, other federal agencies, and the State of California as they collectively continue to define an environmentally sound and effective project that would operate in a manner	Please see responses to comments 2577-3, 2577-4, 2577-5, and 2577-6. The lead agencies believe that the 2013 Draft EIR/EIS, 2015 RDEIR/SDIES, and Final EIR/EIS are complete in their evaluation of impacts using the best available data at the time respective documents that were prepared. The lead agencies recognize that additional approvals will be needed to implement the CWF and look forward to working with permitting agencies to secure those approvals.

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		that simultaneously supports water supply reliability and enhances the Delta's ecosystem. EPA believes that the upcoming actions by USFWS, NMFS, the State Water Board, and the Corps of Engineers will be critical next steps in the design and review of the project, and EPA looks forward to continuing to work with these agencies as the project moves forward.	
2578	1	<p>Critical Studies Are Not Completed, Therefore The Project Description and Analysis of Impacts Are Incomplete.</p> <p>The Change Petition submitted to the State Water Resources Control Board (SWRCB) makes reference to studies regarding the operation and design of the Project, which are, to date, not completed. These studies related directly to the design and operation of the diversion structures, and as such, indicate that the Project and the corresponding RDEIR/SDEIS are incomplete and insufficient. Further, adaptive management and operating scenarios for the Project have not been completed, and are slated for development at an undetermined time in the future. This information is critical to assess the potential environmental impacts of the Project, rendering the RDEIR/SDEIS inadequate under CEQA, as it fails to properly inform the public of potential environmental impacts.</p>	<p>The lead agencies believe that the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS are complete in their evaluation of impacts, direct and cumulative; that project description is complete and satisfies the requirements of NEPA; and that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies agree that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information with which to make informed comments that have been considered and incorporated into the Final EIR/EIS.</p> <p>For more information regarding adaptive management please see Master Response 33.</p> <p>For more information regarding operational criteria please see Master Response 28.</p> <p>Permitting processes separate from the EIR/EIS process have already begun. For more information regarding permitting please see Master Response 45.</p>
2578	2	<p>The RDEIR/SDEIS Does Not Adequately Explain How the Project Will Achieve the Co-Equal Goals of the Delta Reform Act and Comply With the Delta Plan.</p> <p>Public Resources Code section 29702 sets forth the "co-equal goals" of providing a more reliable water supply and "protecting, restoring, and enhancing the Delta ecosystem." Section 29702 states that the co-equal goals shall include protecting and enhancing the "unique cultural, recreational, natural resource" values of the Delta. The BDCP/California WaterFix Project does nothing to improve water quality and reliability of supply within the Delta -- in fact, diversion Project's proposed intake prevents substantial fresh water inflows from entering the Delta, which will assuredly degrade water quality within the Delta. This degraded water quality will negatively impact senior in-Delta water rights, recreation, fisheries, and the Delta environment in general. Further, now that the Project is no longer a "habitat conservation plan" or "natural community conservation plan," it is unclear how the Project will become part of the Delta Plan as contemplated under Water Code section 85320.</p>	<p>Comment is addressing achievement of co-equal goals and consistency with the Delta Plan. See Master Response 10 for more information about the Delta Reform Act.</p> <p>. In April 2015 state and federal agencies announced a new sub-alternative—Alternative 4A (California WaterFix) —which replaced Alternative 4 (the proposed BDCP) as the state's proposed project. Alternative 4A reflects the state's proposal to separate the conveyance facility and habitat restoration measures into two separate efforts: California WaterFix and California EcoRestore. These two efforts are a direct reflection of public comments and fulfill the requirement of the 2009 Delta Reform Act to meet co-equal goals.</p> <p>DWR's fundamental purpose of the proposed project is to make physical and operational improvements to the SWP system in the Delta necessary to restore and protect ecosystem health, water supplies of the SWP and CVP south of the Delta, and water quality within a stable regulatory framework, consistent with statutory and contractual obligations. By establishing a point of water diversion in the north Delta and new operating criteria to improve water volume, timing, and salinity, the proposed project is designed to improve native fish migratory patterns and allow for greater operational flexibility.</p> <p>The State is proceeding with habitat restoration in the Delta under a separate program. California EcoRestore is an initiative to help coordinate and advance at least 30,000 acres of critical habitat restoration in the Sacramento – San Joaquin Delta over the next four years. Driven by world-class science and guided by adaptive management, California EcoRestore will aggressively pursue habitat restoration projects with clearly defined goals, measurable objectives, and financial resources to help ensure success.</p> <p>RDEIR/SDESIS 4.3.4 (4A) describes whether concentrations of various water quality constituents are expected to increase or decrease with the project, relative to existing conditions and the No Action Alternative. To the extent that concentrations of various water quality constituents are expected to increase, 4.3.4 describes whether these increases are expected to result in impacts to beneficial uses of water in the Delta. For constituents for which adverse impacts were expected, mitigation and other commitments, such as additional evaluation and modeling and consultation with water purveyors to identify additional measures to avoid and minimize or offset these impacts, were introduced to address those impacts.</p> <p>Additionally, adding intakes in the North Delta will allow for operational flexibility that can improve natural flow in the Delta and avoid impacts to migratory fish based on real time data and operations.</p>

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2578	3	<p>The RDEIR/SDEIS Does Not Consider All Potential Impacts Resulting From Land Acquisitions Potentially Associated with the Project.</p> <p>Metropolitan Water District and Westlands Water District have indicated their respective intent to acquire large tracts of land within the Delta (namely, Webb and Holland Tracts, and Bacon and Bouldin Islands). The concern is that the acquisition of these lands will be made to facilitate the Project and potentially circumvent eminent domain proceedings under Water Code section 250. If these properties are to serve as a component of the Project, the cumulative impacts must be analyzed in detail under CEQA. The Project description must include these properties, and the resulting impacts, if they are to be a component of the Project. Further, Webb Tract is immediately adjacent to Bradford Island. Inundating Webb Tract with water will more than likely cause significant seepage on Bradford Island. Properties adjacent to Holland Tract, and Bacon and Bouldin Islands will likely be similarly impacted. These impacts must be addressed.</p>	<p>The EIR/EIS does not present any project components associated with MWD acquisition of Delta Islands. Further, mere purchase of land by itself does not constitute a project that must be reviewed under CEQA because it is not a discretionary action with the potential for physical effects on the environment. For this same reason, the EIR/EIS has determined that this acquisition is not a probable future action that should be evaluated in the cumulative impact discussion. Should any portion of the proposed project change because of this acquisition, additional environmental review for those changes could be required.</p>
2578	4	<p>The Project's Long-Term Impacts Are Not Properly Considered.</p> <p>The environmental documents relating to the Project indicate a 15-year initial term, but acknowledge that the "project will continue indefinitely" (See .4.1-42). The impacts that extend beyond the initial term are not fully considered, and mitigation measures are not proposed. This is partly due to the fact that long-term operating scenarios and studies have not yet been performed, which, as stated above, make the RDEIR/SDEIS inadequate as a matter of law.</p>	<p>For information regarding cumulative impacts, please see Master Response 9.</p> <p>For information regarding the project permit terms, please see Master Response 45.</p>
2578	5	<p>The RDEIR/SDEIS Fails to Address How the Project Will Comply With The Delta Protection Act.</p> <p>The RDEIR/SDEIS fails to explain how the Project meets the requirements of the Delta Protection Act of 1959 (Water Code sections 12200 et seq., hereafter, "Act"). The Act was intended to ensure that water exports from the Delta do not deprive in-Delta users of water required for beneficial uses and salinity control. The RDEIR/SDEIS does not analyze the threshold amount of water available for export that would not result in adverse impacts on in-Delta beneficial uses (including water rights that are senior to the State Water Project and the Central Valley Project, as well as recreation, fisheries, and environmental uses of water).</p>	<p>DWR's fundamental purpose of the proposed project is to make physical and operational improvements to the SWP system in the Delta necessary to restore and protect ecosystem health, water supplies of the SWP and CVP south of the Delta, and water quality within a stable regulatory framework, consistent with statutory and contractual obligations. By establishing a point of water diversion in the north Delta and new operating criteria to improve water volume, timing, and salinity, the proposed project is designed to improve native fish migratory patterns and allow for greater operational flexibility. The proposed project is intended to be environmentally beneficial, not detrimental.</p> <p>In April 2015 state and federal agencies announced a new sub-alternative—Alternative 4A (California WaterFix)—which replaced Alternative 4 (the proposed BDCP) as the state's proposed project. Alternative 4A reflects the state's proposal to separate the conveyance facility and habitat restoration measures into two separate efforts: California WaterFix and California EcoRestore. These two efforts fulfill the requirement of the 2009 Delta Reform Act to meet co-equal goals of providing and more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem.</p> <p>The project CEQA and NEPA documents describe a range of alternatives—including no project and no action alternatives—for water export that include various water withdrawal volumes, locations, and timing. The effects of these alternatives on in-Delta water uses, for example water quality, fish and aquatic resources, and recreation, are analyzed in DEIR/DEIS chapters 8, 11, and 15 and RDEIR/SDEIS sections 3 and 4, and when applicable the effects are characterized as beneficial or adverse.</p> <p>For information on project compliance with legislation related to the Delta, please see Master Response 31 (Delta Reform Act). For information on project effects on salinity, please see Master Response 14 (Salinity).</p>
2578	6	<p>The Project Will Adversely Impact Recreation and Public Trust Resources in the Western Delta.</p>	<p>Mitigation measures related to terrestrial biology, fish, noise, aesthetics, and transportation would be implemented to reduce impacts to recreationists, as well as Mitigation Measure REC-2, which would create alternative locations for bank fishing. Mitigation measures may not reduce all impacts to a less than</p>

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		The western Delta relies on recreation and fisheries as a substantial part of its economy. The RDEIR/SDEIS fails to adequately address the long-term impacts on boating, water recreation, and fishing activities within the Delta, and provides no mitigation measures for these impacts.	significant level, however long term benefits to recreation opportunities in the project area will result. Please see DEIR/DEIS Chapter 15, Recreation; Master Response 13, Public Trust Doctrine; Final EIR/EIS for the BDCP/California WaterFix Appendices 15A, 15B, 15C, and RDEIR/SDEIS Section 4.3.11 for more detail on the impacts of the proposed project on recreational opportunities and the proposed mitigation. For additional information on the economic analysis relating to tourism and recreation, please see Chapter 16 of the Final EIR/EIS, Socioeconomics, sections 16.3.3.2 through 16.3.3.16 and sections 16.3.4.2 through 16.3.4.4.
2578	7	Lower freshwater outflow and increased salinity within the Delta that will result from the Project will negatively impact fish species, boating, and recreation. Further, decrease in fresh water outflow and increased salinity will impact native plants and wildlife, navigation, and aesthetics.	Salinity in the Delta is a function of the amount and timing of freshwater input from the major tributaries, tidal action from San Francisco Bay, and exports from the Delta. During the late winter and spring months of seasonally elevated flows and in wet years, seawater intrusion is limited, and the Delta has mostly low salinity. During low-flow summer and fall months and during dry years, lower freshwater flows result in greater amounts of seawater intrusion. Staff from DWR and Reclamation constantly monitor Delta water quality conditions and adjust operations of the SWP and CVP in real time as necessary to meet water quality objectives set by the State Water Resources Control Board for protection of the agricultural water supply and municipal and industrial drinking water supply, as well as fish and wildlife beneficial uses. See RDEIR/SDEIS section 4.3.4 for a discussion on the proposed projects effects on water quality, salinity, and electrical conductivity. Effects of the alternatives on salinity levels are described in Master Response 14; Chapter 8, Water Quality; and Appendix 8H, Electrical Conductivity, EIR/EIS; and Appendix A of the RDEIR/SDEIS. Modeling results indicate that the implementation of the water conveyance facilities may positively or adversely affect in-Delta water quality, depending on a number of factors including location, time of year, and hydrologic conditions. See tables in Appendices 8E through 8N for specific results related to various water quality constituents (including bromide and chloride). In addition to potential effects associated with the project and alternatives, modeling results for the no-action alternative indicate that with or without the proposed project, rising sea levels will bring saline tidal water further into the Delta than occurs at present.
2579	1	Many of our National Pollutant Discharge Elimination System permit requirements are tied to the conditions in the Sacramento River and the Delta ecosystem. Changes in those conditions can affect Regional San adversely by leading to modifications of its NPDES permit or its facilities that in turn can impose costs to our rate payers that would not otherwise occur. Significant environmental effects will result from the construction and operation of new or modified facilities as proposed by the California WaterFix (Project). Accordingly, Sacramento Regional County Sanitation District is concerned with the Project's large-scale changes and impacts to the Sacramento River and the Delta, which also has the potential to impact our operations, our NPDES permit and ultimately the interests of our region.	The commenter indicates that ramifications of the project could affect existing NPDES permits or its facilities. There are no substantive facts provided to support this conclusion that a reasonable and foreseeable response to the implementation of the project would be construction and operation of new or modified facilities. Therefore, the NEPA and CEQA document cannot reasonably be expected to address these potential effects due to the speculative nature of the potential response. Please refer to Master Response 15 (NPDES Permit Holders) for details on the effects of water quality changes on existing NPDES permit-holders. As stated in Master Response 15... "the water quality assessment presented in the Draft EIR/EIS, RDEIR/SDEIS, and Final EIR/EIS for constituents of concern to NPDES dischargers (e.g., metals, dissolved oxygen, nutrients, turbidity, pesticides), indicate that water quality changes are anticipated to be less than significant, and for those that would be significant, mitigation has been provided to reduce those impacts."
2579	2	Sacramento Regional County Sanitation District previously submitted numerous comments on early versions of BDCP and the 2013 Draft EIR/EIS (DEIR/DEIS) that focused on: the need for using the best-available, sound science; the point that all project related impacts on Regional San need full mitigation; and, the need for creation of a robust and inclusive governance structure. Unfortunately, not only does RDEIR/SDEIS not address Regional San's fundamental concerns, but it also lacks any response to the more than 12,000 public comments previously provided on the DEIR/DEIS and BDCP. By deferring responses to these	Best available science was used for all aspects of the analyses. The comment does not indicate which topics were of concern related to the methodology of analysis. No further clarification is provided. Please note that the BDCP is no longer the preferred alternative. The preferred alternative is now Alternative 4A and no longer includes an HCP. Alternative 4A has been developed in response to public and agency input. The EIR/EIS analyzes all alternatives, including Alternative 4A.

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		previous major comments until the Final EIR/EIS for the Project is completed, is very problematic and perpetuates mistrust among the public. In essence, it allows the lead agencies to avoid addressing large issues and precludes them from proposing modifications to the Project to mitigate significant impacts prior to the final documents being issued.	<p>The issue associated with effects on Regional San does not address the adequacy of the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.</p> <p>For more information about governance, see Master Response 5. The commenter indicated that they have not received responses to their comments on the prior public review environmental documents. These comments have been catalogued, evaluated and responses incorporated into the Final EIR/EIS. Comments received during the public review and other forms of public engagement resulted in changes to the preferred project (Alternative 4A is now the preferred alternative). This necessitated a recirculation of the CEQA/NEPA document. The Final EIR/EIS has incorporated all public review comments and responses. See Master Response 42 for additional details on public comments.</p>
2579	3	The RDEIR/SDEIS documents lack transparency, creating distrust and preventing a clear understanding of the project impacts. The RDEIR/SDEIS lacks transparency by not responding to over 12,000 public comments and concerns. The lack in transparency regarding the comments received on the first version of the BDCP and DEIR/DEIS serves as a case example of a "hide the ball" mentality surrounding the CA WaterFix RDEIR/SDEIS effort. The purpose of an EIR is not only to protect the environment, but to also demonstrate to the public that it is being protected. (County of Inyo v. Yorty (1973) 32 Cal.App.3d 795, 810.) Just one example of how the RDEIR/SDEIS does not satisfy these purposes is its failure to address significant comments on the DEIR/DEIS regarding the methodology and scope of modeling used to assess Project impacts to water quality, water supply and fish. Sacramento Regional County Sanitation District has commented multiple times since the release of the Notice of Preparation in 2010, and again in our July 29, 2014 comments on the DEIR/DEIS, regarding the need to evaluate the impacts of Project-induced reverse flow conditions in the Sacramento River on Regional San's operations. These comments remain unaddressed in the RDEIR/SDEIS. Asking the public to review the revised RDEIR/SDEIS without being able to see comments and responses on the major criticisms and questions of the first documents adds to the lack of clarity, confusion and distrust surrounding the BDCP, the California WaterFix and the California EcoRestore and prevents a clear understanding of the Project's impacts.	<p>As state agencies, the Department of Water Resources and the California Natural Resources Agencies have an obligation to provide the public with educational information that is rooted in fact, based on reasonable assumptions supported by facts and expert opinions substantiated by facts. Doing so for a project of large scale and complexity can be a challenge. The BDCP website, blog, Your Questions Answered, and social media platforms have been the primary vehicle for communicating important project information and correcting misinformation. Brochures, factsheets, webinars and videos are other tools the State has employed to educate the public about the proposed BDCP and the EIR/EIS process. Representatives from the State have also held numerous meetings and briefings around the state to educate stakeholders and provide them with critical information about project developments and the EIR/EIS process. Brochures, factsheets, webinars, reports and other information is kept on the project website, www.BayDeltaConservationPlan.com and is available for review. Historical materials remain available for review and are labeled as achieved or superseded. For more information on the public outreach efforts made during the BDCP and EIR/EIS process, please see Master Response 40.</p> <p>More information on how DWR has developed the project in an open and transparent manner is provided in Master Response 41. Methodology of the modeling is presented in Master Response 30.</p> <p>As explained in the Executive Summary of the RDEIR/SDEIS, all of the comments received during the Draft EIR/EIS 2013–2014 public review period were considered in the development of the RDEIR/SDEIS. The RDEIR/SDEIS does not include responses to comments on the Draft EIR/EIS, though some revisions have been made in response to comments received on the Draft EIR/EIS. Consistent with the requirements of the California Environmental Quality Act (CEQA Guidelines §15088) and the National Environmental Policy Act (Council on Environmental Quality § 1503.4) and policies held by all Lead Agencies governing the implementation of CEQA and NEPA, all comments received on the DEIR/EIS and RDEIR/SDEIS are included with the Final EIR/EIS. Please see Master Response 42 regarding treatment of public comments.</p> <p>For more information regarding the document's length and complexity please see Master Response 38.</p>
2579	4	The size and structure of the RDEIR/SDEIS omits or buries essential information and violates CEQA and NEPA requirements that it actually inform the reader. Like the 2013 DEIR/DEIS, the RDEIR/SDEIS fails to summarize and convey information essential to the understanding of project impacts in a reasonable manner to inform the readers and decision-makers, which is in violation of the National Environmental Protection Act (NEPA's) readability requirement and the California Environmental Quality Act (CEQA). Sacramento Regional County Sanitation District and others, including the Delta Independent Science Board (ISB), objected to the difficulty that the 2013 DEIR/DEIS document's size and structure created in understanding essential information about the Project's effects. These problems are compounded with the RDEIR/SDEIS.	<p>The RDEIS/SDEIS attempts to balance readability, the need for accurate and thorough technical analyses, and responses to public and agency requests for information. Efforts to manage the size and complexity of the document, while maintaining the necessary level of technical detail, included: extensive use of graphs, tables and figures to assist with simplifying complex analyses; a summary comparison of alternative provided at the beginning of the EIS/EIS chapters; and inclusion of a "Reader's Guide" to help navigate through chapters. The legal sufficiency of the EIR/EIS depends on the substantive content, procedural compliance, and overall quality and readability of the document.</p> <p>For more information about the document's length and complexity, and efforts taken to make the document readable please see Master Response 38. For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.</p>
		CEQA requires that EIRs should be organized and written in a manner that makes them	

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		<p>"meaningful and useful to decision-makers and to the public." (Pub. Resources Code, § 21003(b).) As stated by a leading treatise on CEQA, "The legal adequacy of an EIR depends on whether it addresses significant environmental issues and the quality of its analysis on those issues, not the quantity of information it provides." (CEB Practice Under the California Environmental Quality Act, 2nd Ed., §11.20, p. 545 (2/09.)) Thus an EIR should be written in a way that readers are not forced "to sift through obscure minutiae or appendices" to find important components of the analysis. (San Joaquin Raptor Rescue Center v. County of Merced (2007) 149 Cal.App.4th 645, 659; California Oak Foundation v. City of Santa Clarita (2005) 133 Cal.App.4th 1219, 1239.) "Documents that are confusing in their presentation are incomprehensible to the very people they are meant to inform." (San Franciscans for Reasonable Growth v. City & County of San Francisco (1987) 193 Cal.App.3d 1544, 1548.)</p> <p>NEPA incorporates a similar "readability" requirement. NEPA's implementing regulations require an EIS to "be written in plain language - so that decision-makers and the public can readily understand them." (40 C.F.R. § 1502.8. This regulation requires that an EIS be "organized and written so as to be readily understandable by governmental decision-makers and by interested non-professional laypersons likely to be affected by actions taken under the EIS." (Oregon Envtl. Council v. Kuzman (9th Cir. 1987) 817 F.2d 484, 494.) An agency may not avoid its obligation to provide a clear assessment of a project's environmental impacts simply by placing complicated information or analyses in an appendix. (Id. At p. 494.)</p>	
2579	5	<p>The Delta Independent Science Board found the RDEIR/SDEIS "sufficiently incomplete and opaque to deter its evaluation and use by decision-makers, resource managers, scientists and the broader public." (September 30, 2015 correspondence to R. Fiorini et al from Delta Independent Science Board Re. Review of environmental documents for BDCP/CA WaterFix). The ISB cited fundamental flaws in the RDEIR/SDEIS including, but not limited to, "overall incompleteness through deferral of content to the Final EIR/EIS"; specific incompleteness in treatment of adaptive management, habitat restoration, levees and long-term effects; and inadequacies in presentation." As a result of these overwhelming structural, organizational and content flaws, the ISB concluded that the RDEIR/SDEIS "fails to adequately inform weighty decisions about public policy." Regional San concurs with this assessment.</p>	<p>The lead agencies believe that 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS are complete in their evaluation of impacts, direct and cumulative, that project description is complete and satisfies the requirements of NEPA, that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies agree that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS.</p> <p>Please refer to comment letters #1448 and #2546 to see responses to the Delta Independent Science Board's comments.</p> <p>For more information regarding adaptive management please see Master Response 33.</p>
2579	6	<p>From a structural perspective, the RDEIR/SDEIS fails to fulfill its essential purpose as an informational document due to its confusing mix of new, old and partially edited impact sections; its lack of clear and concise summary tables; its omission of blocks of text from the revised impact chapters (without any strikeout to inform the reader which sections were deleted from the prior draft); its failure to integrate figures into text; its reliance on multiple appendices and exhibits to appendices; and its cross references to old (DEIR/DEIS and BDCP) and new (RDEIR/SDEIS) documents. All of the deficiencies force the reader to toggle back and forth between multiple documents to attempt to piece together all the information the RDEIR/SDEIS is relying on to support its impact assessments and determinations.</p>	<p>The RDEIS/SDEIS attempts to balance readability, the need for accurate and thorough technical analyses, and responses to public and agency requests for information.</p> <p>For more information about the document's organization, length and complexity, and efforts taken to make the document readable please see Master Response 38.</p>
2579	7	<p>The RDEIR/SDEIS documents amount to nearly 8,000 pages that refer back to portions of the previous 40,000 page BDCP and DEIR/DEIS documents. Some portions of the BDCP and DEIR/DEIS that are referenced in the RDEIR/SDEIS were not revised and updated so that they would be relevant to the changes in the new California Water Fix alternatives. Instead of providing one clearly written and organized EIR/EIS, the public is required to muddle through four main confusing documents (BDCP, DEIR/DEIS, RDEIR/SDEIS: Appendix A Revisions, RDEIR/SDEIS: New Alternatives) with puzzling reference to each other as well as a</p>	<p>To assist reviewers, the Lead Agencies provided a "Document Review Road Map" at the beginning of the RDEIR/SDEIS. Chapter 1, Section 1.3, of the RDEIR/SDEIS describes the contents of the document and provides references to the locations where readers may find specific discussions and analyses. Table 1-2 in the RDEIR/SDEIS identifies the exact portions of the Draft EIR/EIS that are modified in the RDEIR/SDEIS. To avoid presenting thousands of pages of unchanged content, the Lead Agencies did not provide the entire Draft EIR/EIS within the RDEIR/SDEIS. Because the entire Draft EIR/EIS was not presented a second time, the RDEIR/SDEIS contains cross-references to the earlier document. The Final EIR/EIS contains the full contents</p>

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		large number of cross references to multiple tables, figures and appendices that are scattered throughout the numerous documents that collectively comprise the environmental documents of the Project.	of the Draft EIR/EIS and RDEIR/SDEIS without references to earlier documents. See Master Response 38 for further discussion of document organization.
2579	8	<p>Information is not presented clearly in the RDEIR/SDEIS and in some instances the omissions of clear and concise summaries of the key elements of the project appear designed to mislead the public about the Project's true scope. The following are some examples illustrating the lack of clarity in the documents:</p> <p>The Project intends to divert water from Sacramento River through intake facilities. The most obvious piece of information that should be described in the RDEIR/SDEIS is the amount of water being diverted across all seasons, by month, and water year type. However, the RDEIR/SDEIS lacks a clear description of, and amount of, water diversion, and instead confuses and misleads readers by constantly referencing other documents. Simple tables and graphs should be included up front with the Project description, showing the exact amount of proposed water diversion alongside the existing flows in the Sacramento River for each season, month, and water year type. Instead, this important information is hidden and not easy to find. The only table that gives some clue about the flow at different times of the year and different water year type is Table B.7-28 (Appendix B). This table shows Sacramento River flows downstream of the proposed intake will be substantially reduced because of the Project's diversions, but this important information is not mentioned in the Executive Summary nor in the Alternative Descriptions. This reduction of flow compared to the existing condition should be clearly shown for all 12 months of the year and for every year type in graphs and other tables.</p> <p>Even the most essential components of the project, such as river flow volumes into the Delta under Scenario H3 and Scenario H4 during different water years are difficult to locate and understand in the RDEIR/SDEIS. Despite all the revisions and improvement the new documents claim to have accomplished in this recirculation, finding information is even more complicated, or inadequate.</p>	Model results for Alternatives 2D, 4A, and 5D and the No Action Alternative related to surface water flows and diversions are presented in Chapters 5 and 6, and Appendix 5A, Section C, of the Final EIR/EIS in addition to the model results previously presented in the Draft EIR/EIS. See Master Response 30 for more information about modeling. There was no attempt to mislead the public. Rather, the Lead Agencies have attempted to balance thoroughness with readability and concision.
2579	9	<p>Information is not presented clearly in the RDEIR/SDEIS and in some instances the omissions of clear and concise summaries of the key elements of the project appear designed to mislead the public about the Project's true scope. The following are some examples illustrating the lack of clarity in the documents:</p> <p>The RDEIR/SDEIS does not clearly describe whether the water intakes will operate by gravity or pumping. In all the sections where new alternatives are described (including the Executive Summary), the method of conveyance between the "Intermediate Forebay" and Clifton Court Forebay is clearly described as gravity. However, the method of the diversion at the intakes and conveyance through the "single-bore" twin tunnels to the Intermediate Forebay is not identified.</p>	<p>Section 3.1 of the RDEIR/SDEIS describes changes to the proposed water conveyance announced in December 2014; "Allow water to flow from the Sacramento River and through screened intakes, initial tunnels, an intermediate forebay, main tunnels, and into Clifton Court Forebay entirely by gravity at certain river stages (previously, only flows between the intermediate forebay and Clifton Court Forebay would be conveyed by gravity)."</p> <p>There was no attempt to mislead the public. Rather, as noted in Master Response 38, the Lead Agencies have attempted to balance thoroughness with readability and concision.</p>
2579	10	<p>Information is not presented clearly in the RDEIR/SDEIS and in some instances the omissions of clear and concise summaries of the key elements of the project appear designed to mislead the public about the Project's true scope. The following are some examples illustrating the lack of clarity in the documents:</p> <p>CEQA dictates that the "existing conditions" should normally be the baseline for the impact analysis. Under NEPA guidelines, there is no requirement to use a baseline other than the existing conditions. The RDEIR/SDEIS is making assumptions for the purposes of analysis and</p>	The CEQA baseline assumes that the Proposed Project is not implemented, and reviews two scenarios: 1) consideration of existing conditions without the project, a "no build scenario" (State CEQA Guidelines Section 15125[a]) and is called Existing Conditions in this EIR/EIS; and 2) consideration of "reasonably foreseeable" future conditions without the project which is called the No Project Alternative in this EIR/EIS. This second scenario is equivalent to the No Action Alternative, identified below, and throughout this EIR/EIS, will be examined under that heading. The No Project Alternative allows decision makers to use the EIR to compare the impacts of approving the Proposed Project with the future conditions of not approving the Proposed Project in the year 2060. Under CEQA generally, the No Project Alternative may not be used as

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		<p>"Physical Modeling" that are very confusing and unclear. The RDEIR/SDEIS does not provide a simple clear basis for the No Action Alternative (NAA), the Early Long-Term (ELT), and the Late Long-Term (LLT). It describes some mandated work of improvement and restoration as "considered part of the NAA" which actually is part of Alternative 4 but not part of the new preferred Alternative 4A. The RDEIR/SDEIS does not clarify which assumptions were taken into consideration for modeling. Relying on work that is not part of Alternative 4A or NAA is very misleading. Because of these unclear assumptions and lack of a clear baseline throughout the document, it is very difficult for the public to analyze the true impact of the Project.</p>	<p>the sole baseline for assessing the significance of impacts unless the No Project Alternative is identical to existing conditions. (CEQA Guidelines § 15126.6(e)(1).)</p> <p>As the NEPA baseline, the No Action Alternative, sometimes referred to as the future no action condition, considers no action conditions to include continuation of operations of the SWP and CVP as described in the 2008 USFWS and 2009 NMFS BiOps and other relevant plans and projects that would likely occur in the absence of the Proposed Project and which are well-defined enough to allow for meaningful analysis.</p> <p>The EIR/EIS has both NEPA and CEQA analysis with comparisons made against each respective baseline, with each separate require analysis clearly marked within each resource chapter. Where appropriate and where changes had occurred since the release of the Draft EIR/EIS that would result in a change in impact, baseline discussions were updated. Please see Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, for more detail about how each of these conditions was defined. For additional detail about how the baseline was chosen, please see Master Response 1.</p> <p>Please note that Alternatives 4A, 2D and 5A utilize a new NEPA baseline (No Action Alternative ELT) which examines baseline conditions approximately 15 years in the future.</p>
2579	11	<p>Information is not presented clearly in the RDEIR/SDEIS and in some instances the omissions of clear and concise summaries of the key elements of the project appear designed to mislead the public about the Project's true scope. The following are some examples illustrating the lack of clarity in the documents:</p> <p>In general, flow downstream of the intakes is described as bypass flow, but in terms of overall amount of water left in the river and when describing the impacts due to reduced flow, it is mostly described as Delta outflow. Most tables and graphs show the overall Delta outflow vs. exports, which tend to mislead readers that there is no change in the river flow. This confuses the reader regarding the reduction in flow downstream of the intakes, which, in fact, are significant. In the absence of a clear presentation of proposed diversions and bypass flows over different monthly and water year conditions, it is very difficult for the public to understand or assess the impact of reduced flow downstream of the intakes.</p>	<p>In the Final EIR/EIS, changes in flows in the Sacramento River immediately downstream of proposed Intake Number 5 and at Rio Vista are presented for Alternatives 2D, 4A, and 5A as compared to the Existing Conditions and No Action Alternative in Appendix 5A, Section C, in addition to the model results previously presented in the Draft EIR/EIS for these locations. It should be noted that the primary purpose of the North Delta Bypass Flows is to maintain appropriate flows in the Sacramento River downstream of the proposed intakes and to avoid reverse flows due to operation of the proposed intakes. There was no attempt to mislead the public. Rather, as noted in Master Response 38, the Lead Agencies have attempted to balance thoroughness with readability and concision.</p>
2579	12	<p>Three BDCP/CA WaterFix-related changes to the Sacramento River and Delta that could adversely impact Sacramento Regional County Sanitation District and its operations are Sacramento River flows, temperature and fish passage. As to these parameters, there are critical omissions in the modeling that formed the basis for the RDEIR/SDEIS's impact analysis. The lead agencies for the BDCP/CA WaterFix have only performed CALSIM II modeling, based on monthly average flow, and not the DSM2 model, based on hourly flow. The insufficiency in modeling completely bypasses the tidal influence and reverse flow and other important water quality impacts in the Sacramento River that can only be fully analyzed through hourly or sub-hourly modeling. In addition, if the Delta ecosystem is further impaired by water project operations, regulatory pressures could increase on other entities. Therefore, safe fish passage is an important element to ensure the Project will not make conditions in the Delta worse.</p> <p>The effect of these omissions is that the RDEIR/SDEIS does not rely on substantial evidence to support its impact determinations in numerous areas, such as: reverse flow, water quality and fish passage. The modeling and analytical omissions must be corrected, and the RDEIR/SDEIS impact analyses that depend on these models must be revised.</p>	<p>Analyses of effects of the Proposed Project were based on best available data and scientific methods. Effects on river flows were described in Chapter 6 of the DEIS/EIS and RDEIS/SDEIS Appendix A, Chapter 6. Effects on fish and fish passage are described in Draft EIR/EIS Chapter 11, RDEIR/SDEIS Section 4 and Final EIR/EIS appendices on Fish and Modeling.</p> <p>RDEIR/SDESIS 4.3.4 (4A) describes whether concentrations of various water quality constituents, including water temperature, are expected to increase or decrease with the project, relative to existing conditions and the No Action Alternative. To the extent that concentrations of various water quality constituents are expected to increase, 4.3.4 describes whether these increases are expected to result in impacts to beneficial uses of water in the Delta. For constituents for which adverse impacts were expected, mitigation and other commitments, such as additional evaluation and modeling and consultation with water purveyors to identify additional measures to avoid and minimize or offset these impacts, were introduced to address those impacts.</p> <p>Additionally, adding intakes in the North Delta will allow for operational flexibility that can improve natural flow in the Delta and avoid impacts to migratory fish based on real time data and operations.</p> <p>For more information regarding water quality see Master Response 14. For more information regarding modeling, including tidal influence and reverse flow, see Master Response 30. As part of preparing the Final</p>

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			EIR/EIS, the DSM2 model was used by the project proponent to model the change in frequency of reverse flow events at Freeport and potential effects on operations of the Freeport Water Project and SRWTP. An additional environmental commitment will be added to the Final EIR/EIS to develop an operational rule curve for use of the North Delta diversion facilities such that these facilities can be operated in a manner that would not result in reverse flow conditions that would exceed the SRWTP's ability to accommodate such events based on its storage basin capacity.
2579	13	Two to 12 miles upstream of the proposed new water intakes, Sacramento Regional County Sanitation District currently discharges secondary treated effluent into the Sacramento River at Freeport. Because there is a lack of information regarding new alternatives related to river flow changes, it is difficult to assess the potential impacts the Project will have on Regional San's operations, and our ability to meet future water quality standards and/or National Pollutant Discharge Elimination System permit obligations. Reverse flows as a result of tidal influence are observed near our outfall. Regional San's wastewater treatment plant is required to maintain a minimum of 14:1 ratio between the Sacramento River flow at Freeport and Regional San's treated effluent discharge rate. When river flow rates drop such that the 14:1 ratio cannot be maintained, Regional San must divert the treated effluent to on-site emergency storage basins (ESBs), with a capacity of 302 million gallons, until river flow rates return to levels that allow the treated effluent to be discharged. We are concerned that BDCP/CA WaterFix related changes to flows in the Sacramento River could cause Regional San to divert effluent to the ESBs more often, or even necessitate expansion/upgrades of the ESBs to handle higher volumes of diverted effluent. Either of these consequences could adversely affect Regional San and its operations, and were not evaluated in the RDEIR/SEIS, despite repeated requests.	<p>The Final EIR/EIS includes model results for Alternative 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The model results include monthly flow data along the Sacramento River near Freeport based on the CALSIM II model results. Disaggregated data was calculated during preparation of the EIR/EIS using the DSM2 model to indicate changes during tidal cycles.</p> <p>In the final EIR/EIS modeling of Alternative 4A and corresponding No Action Alternative the Fremont Weir notch was included unlike the DEIRS modeling of Alternative 4 (included Fremont Weir notch) and No Action Alternative (did not include Fremont Weir notch). Given that Fremont Weir notch is modeled as part of both Alternative 4A and No Action Alternative in the final EIR/EIS, the Freeport flows are similar between the both scenarios, as shown in the Appendix 5A Section C.</p> <p>See Master Response 15 for more information regarding effects of water quality changes on NPDES permit holders. See Master Response 30 on for more information on tidal influence and reverse flows.</p>
2579	14	As far back as June 16, 2010, Sacramento Regional County Sanitation District submitted a comment letter to BDCP (Subject: Evaluation of Proposed Bay Delta Conservation Plan North Delta Diversions on Sacramento River Flow at Freeport) raising concern about reverse flow impacts and related effects on Regional San's operations. At that time, key BDCP staff and management met with Regional San and provided assurances that tidal influence and reverse flow impacts would be mitigated by the amount of tidal habitat restoration and that future documents and models would illustrate this point. This concept was further bolstered at the 2014 Delta Science Conference by ICF and CH2MHILL's poster presentation number 90 titled "Habitat Restoration and Water Diversion Effects of the Proposed BDCP on the Hydrodynamics of a Key River Junction within the Sacramento-San Joaquin Delta, California."	<p>The Final EIR/EIS includes model results for Alternative 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The model results include monthly flow data along the Sacramento River near Freeport based on the CALSIM II model results. Disaggregated data was calculated during preparation of the EIR/EIS using the DSM2 model to indicate changes during tidal cycles.</p> <p>See Master Response 30 (Modeling) for more information on tidal influence and reverse flows.</p>
2579	15	In the 2013 version of BDCP and associated DEIR/DEIS, a DSM2 hourly model was performed. Flow Science, Inc., recognized experts in hydrodynamic modeling, evaluated the 2013 BDCP flow-related impacts on Regional San, including Alt4H3 and Alt4H4, which are modified to a certain degree, but are still part of the Alternative 4A. Flow Science used BDCP model data to determine how the proposed BDCP alternatives would impact Sacramento Regional County Sanitation District's ability to discharge effluent, and if the discharge disruptions would require upgrades to our emergency storage basins. Flow Science's 2014 technical memorandum was submitted to BDCP as an attachment to Regional San's July 2014 comment letter. This work was based on simulated Sacramento River hourly flow rates (at Freeport) from BDCP DSM2 modeling obtained from the California Department of Water Resources (DWR). When Regional San requested this information to evaluate the same question in the context of the RDEIR/SDEIS, DWR informed Regional San that DSM2 modeling was not performed for the new alternative 4A and thus only CALSIM II monthly	<p>The Final EIR/EIS includes model results for Alternative 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS. The model results include monthly flow data along the Sacramento River near Freeport based on the CALSIM II model results. Disaggregated data was calculated during preparation of the EIR/EIS using the DSM2 model to indicate changes during tidal cycles.</p> <p>See Master Response 30 (Modeling) for more information on tidal influence and reverse flows and Master Response 15 (NPDES) for information pertaining to water quality effects on current NPDES holders.</p>

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		average flow data were provided. It is concerning that Project proponents would not utilize hourly flow rates in the RDEIR/RDEIS for understanding the Project's impacts, rather than monthly average flow rates, which would tend to mask the potential impacts of the Project.	
2579	16	In 2014, Flow Science concluded that the assumptions included in the BDCP model regarding future effects of sea level rise and extensive BDCP habitat restoration seemed to conceal the effects that the new export facilities would have on Sacramento River flows and the Sacramento Regional County Sanitation District emergency storage basins. However, BDCP/CA WaterFix includes only limited habitat restoration (only that which mitigates construction impacts), and no appropriate time step modeling data with RDEIR/SDEIS have been provided. Despite our extensive and numerous comments on this issue, the RDEIR/SDEIS and new alternatives do not address reverse flow impacts to Regional San's operations, impacts to Delta water quality or impacts to the Delta ecosystem. Instead, Alternative 4A amplifies Regional San's original concerns due to the removal of the 65,000 acres of habitat restoration work included in the previous preferred Alternative 4. To help Regional San evaluate the potential effect on its operations, Flow Science was again retained by Regional San to conduct a comparison and analysis between the new preferred Alternative 4A, Scenarios H3 and H4, and the Alternative 4 (Attachment 2- 2015 Flow Science Tech Memo). Based on the limited monthly average flow modeling and data provided by the lead agencies, Flow Science determined that, statistically, the flow scenarios of Alternative 4A are indistinguishable from those of Alternative 4. Therefore, it is reasonable to assume that the impacts of Alternative 4A would be similar to those of Alternative 4 or even worse because of Alternative 4A's removal of thousands of acres of habitat restoration that tended to reduce the effect of the new North Delta Diversions (NDD) on flows and Regional San's operations. Unfortunately, the lead agencies have not conducted and released sufficient modeling to determine the impacts with any certainty. The potential for more reverse flow events cannot be adequately analyzed using a model based on monthly average flow, as was done in the RDEIR/SDEIS. In order to properly evaluate this potential impact, new modeling using appropriate methodology must be performed and the issue must be addressed clearly in a revised DEIR/DEIS.	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS. The model results include monthly flow data along the Sacramento River near Freeport based on the CALSIM II model results. Disaggregated data was calculated during preparation of the EIR/EIS using the DSM2 model to indicate changes during tidal cycles.</p> <p>See Master Response 30 (Modeling) for more information on tidal influence and reverse flows and Master Response 15 (NPDES) for information pertaining to water quality effects on current NPDES holders.</p>
2579	17	Another potentially adverse effect of the BDCP/CA WaterFix on Sacramento Regional County Sanitation District is a change in ambient river water temperature. Sacramento Regional County Sanitation District currently operates under National Pollutant Discharge Elimination System permit requirements that allow it to discharge treated effluent based on a temperature schedule approved by the Central Valley Regional Water Quality Control Board. The temperature schedule is based on river and effluent temperatures, and any changes to either could affect Regional San's ability to comply with the thermal discharge requirements in its NPDES permit. If the changes in river temperature cause Regional San to be noncompliant with thermal requirements applicable to the discharge, or lead to modification of permit requirements, there is a possibility that Regional San would be required to build cooling towers to cool its effluent before it is discharged to the Sacramento River. The capital cost of cooling towers is expected to be tens of millions of dollars. The construction and operation of the cooling towers would also have associated environmental impacts that are not considered in the RDEIR/SDEIS. Regional San specifically commented on this concern in the July 2014 comment letter along with a modeling expert's opinion. The RDEIR/SDEIS did not specifically evaluate the potential temperature impacts to Regional San's operations, and our concern remains.	<p>As shown in Figure 4.3.2-4 of the RDEIR/SDEIS, lower Sacramento River flow at Freeport would change minimally between Alternative 4A and Existing Conditions and the No Action Alternative (NAA). Comparison to the NAA is most relevant because model runs for the NAA and Alternative 4A both incorporate key assumptions for climate change and higher water demands in 2025, whereas model runs depicting the Existing Condition do not. Hence, comparison of the NAA to Alternative 4A best identify the effects of the Proposed Project, and do not also include effects of future climate change and increased water demands.</p> <p>Flows at Freeport are critical to meeting Bay-Delta water quality and flow standards identified in the State Water Resources Control Board's D-1641 and thus would be maintained at levels that support implementation of Alternative 4A and compliance with D-1641 standards. In addition, lower Sacramento River water temperatures at Freeport are generally in equilibrium with ambient air temperatures and thus are not controlled at this point in the system by reservoir releases. This coupled with the fact that flows at Freeport would change minimally under Alternative 4A means that river temperatures at Freeport are expected to change negligibly (i.e., by only tenths of a degree), relative to temperatures that would occur at Freeport under the NAA.</p> <p>Regional San operates the Sacramento Regional Wastewater Treatment Plant (SRWTP) to the thermal limitations in the NPDES permit for this facility. Each of the NPDES permit limitations are stipulated as an allowable increase in river temperature (relative to background temperature) for 25% of the river</p>

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			<p>cross-section or at the river surface, and a difference between effluent and river temperature. Compliance with the SRWTP thermal limitations is affected by the effluent flow, river flow ratio, and the differential between the temperature of the effluent and the river background temperature. Where modeling shows that river flows would change negligibly, or not at all, under Alternative 4A, relative to the NAA, such conditions would not adversely affect the ability of the SRWTP to comply with its NPDES thermal limitations, relative to its ability to comply under the NAA. Likewise, because river temperatures at Freeport are expected to change negligibly, if at all, under Alternative 4A, relative to the NAA, such minimal changes in river temperature at Freeport would not substantially change the ability of the SRWTP to comply with its thermal NPDES permit limitations. Although minor changes in flows and river temperature would occur under Alternative 4A, relative to the NAA, they would not be of sufficient magnitude and duration to change Regional San's overall thermal compliance record relative to compliance under the NAA. Also, minor changes in river flow and temperatures that may occur under Alternative 4A, relative to conditions under the NAA, would not cause the Regional Water Quality Control Board to modify the thermal limitations in the NPDES permit or cause Regional San to build cooling towers to cool its effluent when such modifications would not be required under the NAA.</p> <p>For additional information related to effects on current NPDES permit holders, please refer to Master Response 15. Please refer to Master Response 14 for additional information regarding water quality including potential effects on water temperature.</p>
2579	18	<p>In addition, although tidal influence and reverse flow generally contribute to an increase in the river temperature, the RDEIR/SDEIS impact analysis of the new alternatives includes no section attributed to Project impacts on river temperature. Since proper modeling has not been performed to assess the impacts of reverse flow, temperature impacts have also not been adequately addressed. A clear example of lack of temperature analysis can be seen in section 4.3.4 (Water Quality) under the Impact WQ-32: Effects on Microcystis Bloom Formation Resulting from Facilities Operation and Maintenance. In this section, it is stated that Alternative 4A could result in an increase of residence time and temperature, but that it is uncertain. The document then goes on to conclude, without the support of substantial evidence or analysis, that the Project will not have any impact on Microcystis. The impacts of the current drought on river temperature has provided clear proof that increases in temperature and residence time contributes to Microcystis growth. The RDEIR/SDEIS's failure to perform any hourly modeling undermines its ability to accurately analyze temperature impacts in the river.</p>	<p>Sacramento Regional County Sanitation District commented on the analysis of impacts related to water temperature and residence time with potential for subsequent effects related to Microcystis blooms. Please refer to Master Response 14 for how residence time and temperature were considered in the upstream of Delta region and within the Delta relative to the effects of the alternatives versus the effects of climate change, and regarding new information to support the Microcystis assessments for Alternatives 4A, 2D, and 5A. Master Response 30 provides additional details regarding the models used to evaluate impacts.</p>
2579	19	<p>To provide Delta smelt protection while traveling past the screened intakes, the approach velocity must never be greater than the river's sweeping velocity at the face of the screen. The July 2011 BDCP Fish Facilities Technical Team Technical Memorandum described the river velocities (sweeping speed) necessary to provide adequate protection for delta smelt traveling past the North Delta Diversion screens. When the velocity of diverted water (approach velocity) exceeds the river's sweeping speed, small fish have a high risk of becoming impinged on the screens, which can result in injury, increased predation risk, and mortality. When the Sacramento River's outflow is low, tidal influences can cause the river's velocity to temporarily slow down, stop, and even reverse in direction. When the river's sweeping speed is reduced, the approach velocity also needs to be reduced to maintain the experimentally determined 1:1 water diversion ratio, which is protective for delta smelt and other small fish. This means that during tidal reversal periods, no water should be exported at the northern water diversions. Tidal reversals can occur twice a day and last for many hours.</p>	<p>As described in the EIR/EIS, it is the intent of the Proposed Project to incorporate appropriate recommendations from the July 2011 Fish Facilities Technical Team Technical Memorandum and any subsequent memoranda prepared by the Fish Facilities Technical Team as well as criteria developed by USFWS, NMFS, and CDFW. Water diversions at the north Delta intakes only occur in the model when there is a positive downstream sweeping velocity. Master Response 17 provides the additional information on proposed operational criteria to mitigate effects on fish.</p>

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2579	20	The diversion of water at the northern intake is also likely to cause increased periods of flow reversals near the intake screens. Therefore hourly flow rates should be modeled and discussed in a revised Project description as well as revised fisheries impact analysis. It is possible that most water diversions will still occur at the southern pumping facilities during dry years to achieve water quality requirements in the Delta, which might limit North Delta Diversion water exports to periods when reverse flows will not occur. Additional modeling to address this issue and determine the proportion of time that water can safely be exported at the Northern Delta versions must be performed.	<p>The Final EIR/EIS includes model results for Alternative 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The model results include monthly flow data along the Sacramento River near Freeport based on the CALSIM II model results. Disaggregated data was calculated during preparation of the EIR/EIS using the DSM2 model to evaluate flows and elevations using 15-minute time steps. It should be noted that the CALSIM II model assumptions related to the North Delta Bypass Flows were specifically developed to reduce or eliminate diversions at the north Delta intakes during periods that would cause reverse flow patterns along the Sacramento River and adjacent tributaries, including Sutter and Steamboat sloughs (see Appendix 5A, Section B, of the EIR/EIS). Therefore, tidal flows in the Sacramento River would be similar under the action alternatives and the No Action Alternative and adjacent tributaries, including Sutter and Steamboat sloughs.</p> <p>As indicated in Appendix 5A, Section C, the south Delta intakes would be used in all months in all water year types except when there were extremely small allocations for the CVP and/or SWP water contractors. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS.</p> <p>Additional information on the proposed operational criteria to mitigate potential effects on fish can be found in Master Response 17. See Master Response 30 on for more information on modeling.</p>
2579	21	Impacts to Sacramento Regional County Sanitation District must be fully mitigated. The California Water Fix creates significant impacts on tidal influence and reverse flow in the Sacramento River near Freeport that can greatly impact Regional San's operation. First, the California Water Fix has taken out all of the previously proposed 65,000 acres of tidal habitat restoration. That amount of habitat restoration work was still not enough to mitigate impacts to Regional San, as stated in the Regional San's July 2014 comment letter and supported by associated modeling work submitted along with Regional San's comments. Second, the RDEIR/SDEIS has not addressed the issue or modeled the impacts of Project-induced reverse flows in the North Delta, as discussed above. The only references to reverse flows in the RDEIR/SDEIS are to those in Old and Middle River. BDCP/California Water Fix RDEIR/SDEIS must conduct complete analysis on the tidal influence and reverse flows, and any impacts to Regional San's operations must be fully mitigated.	<p>The potential for impacts related to project-induced reverse flows in the North Delta is addressed in the responses to Comments 2579-13 through 2579-16, above.</p> <p>Master Response 30 provides additional details regarding the models used to evaluate impacts.</p> <p>State and Federal agencies developed the modified Proposed Project (Alternative 4A/California WaterFix) in response to public and agency input. Alternative 4A reflects the State's proposal to separate the conveyance facility and habitat restoration measures into two separate efforts: California WaterFix and California EcoRestore. The Proposed Action includes habitat restoration as necessary to mitigate significant environmental effects and satisfy applicable CWA, ESA and CESA standards. Please see Master Response 22 for additional information regarding the adequacy of mitigation measures. See Master Response 15 for additional information regarding effects of water quality changes on NPDES holders.</p> <p>Sacramento Regional County Sanitation District indicated that they have not received comments on the prior public review environmental documents. Sacramento Regional County Sanitation District's comments have been catalogued, evaluated, and responses incorporated into the Final EIR/EIS. Comments received during the public review and other forms of public engagement resulted in changes to the preferred project (Alternative 4A is now the preferred alternative), which necessitated a recirculation of the CEQA/NEPA document. Please see Master Response 42 for additional information on responses to comments on the Draft EIR/EIS. See Part II Responses to Comments on the Draft EIR/EIS and RDEIR/SDEIS of the Final EIR/EIS for specific comment responses.</p>
2579	22	The BDCP/California Water Fix does not meet the requirements of the Delta Reform Act. In particular, the Delta Reform Act requires attainment of co-equal goals, one of which includes ecosystem restoration. With the elimination of 65,000 acres of wetlands restoration from the Project, the possibility of attaining the co-equal restoration goal is also essentially eliminated. The Project appears to rely on assumptions regarding differential improvement in fish losses as a result of Project operation, (i.e. less severe fish losses due to diminished reliance on South Delta pumps). However, no analysis is provided to demonstrate that the significant fish losses that will continue to occur in the South Delta and the new losses that would occur in the North Delta will not continue to severely impact	<p>State and Federal agencies developed the modified Proposed Project (Alternative 4A/California WaterFix) in response to public and agency input.. Alternative 4A reflects the State's proposal to separate the conveyance facility and habitat restoration measures into two separate efforts: The project objectives and purpose and need statement in this Final EIR/EIS are consistent with the coequal goals for the Delta in the Sacramento-San Joaquin Delta Reform Act of 2009 (Delta Reform Act). Alternative 4 remains a viable alternative.</p> <p>As a plan prepared to meet the rigorous standards of the federal and state Endangered Species Acts, the Proposed Project is intended to be environmentally beneficial, not detrimental. By establishing a point of</p>

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		fish populations. As a covered action under the Delta Plan, the Delta Reform Act requires that the BDCP/California Water Fix demonstrate consistency with the plan and the coequal goals.	water diversion in the north Delta and new operating criteria to improve water operations, the Proposed Project is designed to improve native fish migratory patterns and allow for greater operational flexibility. The project proposes to stabilize water supplies, and exports could only increase under certain circumstances. Water deliveries from the federal and state water projects under a fully implemented Alternative 4A are projected to be about the same as than the average annual amount diverted in the last 20 years. Although the Proposed Project would not increase the overall volume of Delta water exported, it would make the deliveries more predictable and reliable, while restoring an ecosystem in steep decline. Please see Master Response 31 for additional information regarding compliance with the Delta Reform Act.
2579	23	The Delta Reform Act requires the guidelines for an EIR/EIS to specifically call for an adaptive-management plan. The RDEIR/SDEIS does not adequately take into consideration the steps going forward for adaptive-management. The Delta Independent Science Board review clearly calls out this inadequacy of the RDEIR/SDEIS.	DWR recognizes and intends to fully comply with its obligations under the 2009 Delta Reform Act. Please see Master Response 31 for how the Proposed Project meets these obligations. See Master Response 33 for an overview of the Adaptive Management Plan (AMP), how the AMP will be used to address scientific uncertainties, and an evaluation of its effectiveness during implementation of the proposed action. Please refer to comment letters #1448 and #2546 to see responses to the Delta Independent Science Board's comments.
2579	24	The Delta Reform Act requires a comprehensive analysis of a reasonable range of flow criteria, rates of diversion, and other operational criteria to identify the remaining water available for export and other beneficial uses. The RDEIR/SDEIS fails to include this analysis or an evaluation of the range of the flows necessary to recover the Delta and restore fisheries under a reasonable range of hydrologic conditions.	Please see Master Response 31 for a discussion of how the Proposed Project complies with the 2009 Delta Reform Act with respect to operational criteria. Master Response 4 and Appendix 3I of the Final EIR/EIS, BDCP Compliance with the 2009 Delta Reform Act, describes how the EIR/EIS range of alternatives was developed to comply with the Delta Reform Act.
2579	25	The Delta Reform Act requires that construction of a new Delta conveyance facility shall not be initiated until arrangements have been made to pay for the cost of mitigation required for construction, operation and maintenance of any new Delta conveyance facility. However, the RDEIR/SDEIS does not clearly specify the mitigation measures needed nor does it plainly identify the linkages to impacts of the Project so that the financial obligations are apparent.	The construction of the water delivery facilities, including mitigation, is estimated to cost \$14.9 billion, an amount that would be paid for by the state and federal water contractors who rely on Delta exports. The range of costs for water varies widely among contractors south of the Delta. Costs depend on the source of water, transport facilities, energy requirements, among other factors. The final cost of water from the new conveyance facilities would be determined by numerous factors. A number of these significant factors, such as the project yield and allocation of costs, have yet to be determined. Please see Master Response 5 for more information regarding costs and funding of implementing the Proposed Project in order to comply with the 2009 Delta Reform Act. Mitigation measures for impacts to resource areas are listed in each respective chapter of the Final EIR/EIS. For more information regarding Environmental Commitments please see Appendix 3B of the Final EIR/EIS. Additional discussion of the adequacy of the proposed mitigation measures can be found in Master Response 22.
2579	26	The Delta Reform Act also requires that the EIR/EIS provide special attention to water quality impacts. Not only is the water quality impact analysis inadequate due in part to the omissions in the project description and flaws in modeling, but a number of water quality impacts identified in the RDEIR/SDEIS are deemed to be significant and unavoidable.	Please see Master Response 31, Compliance with Delta Reform Act and Master Response 14, Water Quality, for information on the impact analysis and modeling constraints. Additionally, Master Response 10 provides a discussion on significant and unavoidable impacts associated with the proposed action that do not preclude it from being approved.
2579	27	The flow tables and operational scenarios in the RDEIR/SDEIS do not mention the August 2010 Delta flows report that was issued by the State Water Board in specific response to a mandate under the Delta Reform Act of 2009. The RDEIR/SDEIS also does not mention the multiple workshops that have been held by the State Water Board and Delta Science Program to develop scientific information that will be used in the final adoption of Delta flow requirements or the schedule for adoption of Delta flow standards by the State Water Board.	Both the Draft EIR/EIS and the RDEIR/SDEIS reference the State Water Resources Control Board's August 2010 Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem (see Section 3.4.1.2 Operational Components of Chapter 8 of the DEIR/EIS and Appendix A, Chapter 8 of the RDEIR/SEIS). An alternative concept based on the 2010 Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem report was considered in Appendix 3A, Identification of Water Conveyance Alternatives Conservation Measure 1, of the Draft EIR/EIS. Please see Master Response 31 for more information regarding use of the State Water Resources Control Board's flow recommendations. It is recognized that numerous meetings, workshops and hearings have occurred by various entities. The project will need to

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			comply with all applicable regulations at the time of project initiation and/or whenever new regulations are in force.
2579	28	In a July 2013 letter by Delta Stewardship Council (Council) staff and consultants, the requirements in the Delta Reform Act of 2009 to address Delta flow requirements in the DEIR/DEIS were re-emphasized, having been previously raised in letters submitted in April 2012 and June 2010. The Council's letter states that the Delta Reform Act requires that the DEIR/DEIS include a comprehensive analysis of a reasonable range of flow criteria, rates of diversion, and other operational parameters. The 2013 letter also reiterated that the DEIR/DEIS must take into account the State Water Board's August 2010 "Development of Flow Criteria for the Sacramento/San Joaquin Delta Ecosystem." The Delta Reform Act intended that the results of the 2010 State Water Board study would be used to inform planning decisions for the BDCP. The Council's 2013 letter asked that the State Water Board's 2010 flow criteria be addressed directly in the DEIR/DEIS.	An alternative concept based on the State Water Resources Control Board 2010 Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem report was considered in Appendix 3A, Identification of Water Conveyance Alternatives Conservation Measure 1, of the Draft EIR/EIS. However, this potential alternative was not evaluated in detail because the flow recommendations in the 2010 report could not be achieved without adverse impacts to cold water management for fisheries in the Sacramento, Feather, and American rivers, and without reductions in non-SWP and non-CVP water rights diversions. The purpose and need of this EIR/EIS would not allow changes to non-SWP and non-CVP water rights. However, Alternatives 7 and 8 in the EIR/EIS reflect similar flow criteria in a manner that would only affect SWP and CVP water rights. Because the EIR/EIS alternatives cannot affect senior water rights, Alternatives 7 and 8 could not fully meet the Delta outflow and tributary flow objectives in the 2010 Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem. Please see Master Response 31 for more information regarding use of the State Water Resources Control Board's flow recommendations and compliance with the Delta Reform Act.
2579	29	Review of the DEIR/DEIS indicated that the State Water Resource Control Board 2010 Delta flow criteria were mentioned in Section 3 and that one alternative (Alternative 8) considered a "version" of the recommendations that the State Water Board made in its report. However, it is not clear that the evaluation of Alternative 8 was adequate to meet the requirements of the Delta Reform Act. Moreover, the criteria were not clearly considered in the development or analysis of the new alternatives in RDEIR/SDEIS. Regardless of whether the California Water Fix Project intends to be a NCCP, the importance of flow, and the extensive body of work developed by the State Water Board and Council relating to Delta flow objectives, are an essential element of an adequate environmental analysis of the proposal to shift the diversions north and potentially increase (either in volume or frequency, or both) fresh water diversions from the Delta. In February 2014 the Delta Science Program held a workshop to identify the best available science to inform the State Water Board's decisions regarding Delta outflow requirements included in the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan). In May 2014 the Delta Science Program released a Delta Outflow and Other Stressor report to the State Water Board that was written by an expert panel with the charge of: "...reviewing and assessing the provided written materials and oral presentations in order to identify the best available science to inform the State Water Board's decisions on Bay-Delta Plan requirements related to Delta outflow and related factors (Delta outflow requirements)." A similar report was released in 2014 on Delta Inflow and Other Related Stressors. The California Water Fix must be revised to address the most current best available science into the California Water Fix and RDEIR/SDEIS related to the State Water Board flow objectives.	Please see response to Comment 2579-28 for information regarding the alternative concept developed based on the State Water Resources Control Board 2010 Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem report. Appendix 3I of the Final EIR/EIS, BDCP Compliance with the 2009 Delta Reform Act, describes how the BDCP range of alternatives was developed to comply with the Delta Reform Act. Please also see Master Response 31 for more information regarding the Proposed Project's compliance with the Delta Reform Act. The California WaterFix project would be required to comply with any flow objectives provided in the State Water Resources Control Board Bay-Delta Water Quality Control Plan, currently being updated.
2579	30	The BDCP/California Water Fix and the RDEIR/SDEIS fail to properly consider the anti-degradation requirements of the federal Clean Water Act, in general. Under the federal anti-degradation policy, "major federal actions" that affect water quality (pursuant to NEPA and the Endangered Species Act) trigger the application of the federal anti-degradation policy and requirements. Those requirements prohibit actions that would lower water quality in areas where existing water quality objectives are not attained (e.g. Tier I waters) [USEPA, Region 9, 1987, Guidance on Implementing the Anti-degradation Provisions of 40 CFR 131.12, June 3]. The RDEIR/SDEIS does not adequately articulate or address the Project's inconsistency with those requirements, which are an important element of water	Please refer to Master Response 14 for information regarding potential impacts to water quality including an antidegradation analysis and discussion of the relevance of federal and state antidegradation policy considerations in the CEQA/NEPA process. As explained in Master Response 14, the revised analysis in the RDEIR/SEIS and Final EIR/EIS supports the determination that the impacts of Alternatives 4, 4A, 2D, and 5A on electrical conductivity (EC) will be less than significant with mitigation.

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		<p>quality standards. Specifically, the document fails to address the significant degradation of 303(d) listed waters that would result from the Project, (e.g. significantly increased occurrence of violations of electrical conductivity standards at various locations in the Delta). Such degradation is not allowed under the Clean Water Act. The surface water quality impact assessment must be revised to adequately address the requirements of the federal anti-degradation policy, which places significant constraints on the Project in terms of required mitigation. As noted in the USEPA letter on the DEIR/DEIS dated August 26, 2014, alternatives must be offered which would, at minimum, not contribute to an increase in the magnitude or frequency of exceedance of water quality objectives in the Delta. Without such changes to the proposed Project, USEPA indicated that it would result in violation of Clean Water Act requirements. The RDEIR/SDEIS fails to address this serious deficiency, and instead confirms that the proposed Project will further degrade ambient EC levels in the Delta, resulting in increased violations of EC water quality objectives in a 303(d)-listed water body. Such action is prohibited under the antidegradation provisions of the Clean Water Act.</p>	
2579	31	<p>The BDCP/California Water Fix documents fail to adequately address the impacts of water project operations on the Delta fishery, including past and future impacts of entrainment and the loss of hundreds of millions of larval, juvenile and adult fish as a result of the Project. Most problematic, the Project and associated CEQA/NEPA documents fail to ensure that the Delta fishery will be restored or even that it will not continue to be in crisis or get worse as a result of the Project. The BDCP/ California Water Fix and RDEIR/SDEIS are fundamentally flawed due to their failure to provide an adequate assessment of the current CVP and SWP operations on the Delta ecosystem.</p> <p>The BDCP/ California Water Fix and RDEIR/SDEIS fail to address the effects of the Project in comparison to nutrient impacts from other sources. For instance, the Project documents assert that nutrients from future wetlands are beneficial, whereas nutrients from municipal and other sources are detrimental. The BDCP/ California Water Fix and RDEIR/SDEIS fail to provide a mass balance of nutrients in the Delta that would allow for the fair assessment of various sources.</p>	<p>The assessment of the fisheries has been substantial. Please see Chapter 11 (Fish and Aquatic Resources) DEIR/S, Appendices 11A-11D of the DEIR/S, Section 4 and appendices of the REDEIR/SEIS, and the Final EIR/S (Chapter 11 and various appendices). Operations of the Proposed Project are considered in the EIR/S, in Chapter 15, Recreation. Impact REC-5: “Result in long-term reduction of recreational fishing opportunities as a result of the operation of the proposed water conveyance facilities” would be less than significant with no mitigation required. For information regarding the Project and associated EIR/S documents addressing the restoration of the Delta fishery, please refer to Master Response 3 regarding purpose and need. Regarding nutrients, the conceptual model for the large-scale restoration proposed under the action alternatives is that of the USFWS (2008) biological opinion, that suggests tidal habitat restoration could export productivity. It is acknowledged that there is uncertainty in this outcome, and there are no quantitative tools available to make estimates of this potential effect. See Master Response 30 that discusses the modeling. Additionally, the environmental documents have several appendices presenting the modeling approach conducted for the assessments. Monitoring would assess the effects. Note, however, that the preferred alternative (Alternative 4A, California WaterFix) proposes restoration to the extent needed to mitigate for new facility construction impacts, which would be a considerably less extent of restoration than for the action alternatives. Therefore, the Lead Agencies consider that the fisheries effects have been adequately assessed based upon current science.</p>
2579	32	<p>The BDCP/California Water Fix and RDEIR/SDEIS fails to adequately consider the effects of residence time and temperature changes associated with the Project. While the RDEIR/SDEIS evaluates Microcystis and other harmful aquatic species, the document does not acknowledge that the Project will likely make such conditions significantly worse in the South Delta and may create new areas of impact by creating low flow conditions and increased residence times in the Lower Sacramento River on a regular basis. Lack of freshwater inflow is considered to be one of the greatest stressors on Delta ecosystem health (State of Estuary Report 2015). Even if the total amount of water exported by the Project remains unchanged, the amount of water entering into the Delta below the North Delta Diversion (NDD) will be reduced when they are operating. Insufficient analysis is provided to predict the likely impact of the additional 3-30% reduction in freshwater inflow due to water diversion at the NDD’s. Low Delta inflow can effect cyanobacteria blooms, fish reproduction, water temperatures and many other important ecological parameters. A specific analysis of how the reduced inflow due to Project operations would affect the ecosystem needs to be considered when establishing bypass flow criteria at the NDD.</p>	<p>The assessment under Chapter 8, Water Quality, of the EIR/EIS in Impact WQ-34 considered the change in Delta outflow and resulting change in Delta water quality due to each alternative. Please refer to Master Response 14 for addition information regarding how residence time and temperature were considered in the upstream of Delta region and within the Delta relative to the effects of the alternatives versus the effects of climate change, and regarding new information supporting the Microcystis assessment for Alternatives 4A, 2D, and 5A.</p>

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2579	33	The BDCP/California Water Fix and RDEIR/SDEIS documents provide inadequate consideration of the cumulative effect of historic SWP/CVP water operations and the Project on the Delta food web, a low productivity estuarine system. Mass transport of phytoplankton and nutrients in the exports is not accounted for in the analysis of the Delta ecosystem. Additionally, the impact of invasive species (clams, macrophytes) on the food web and the effect of the Project on the proliferation of those invasive species are not addressed. To ensure water quality and ecosystem health is not impacted and to support adaptive management and real time decision making, the BDCP/CA WaterFix must contribute funding and resources to the Delta Regional Monitoring Program and future associated modeling efforts.	<p>The analysis included the direct, indirect and cumulative effects in all of the topical areas. Under the Proposed Project, reduced pumping in the south Delta would generally be expected to have beneficial effects to fish species, as it relates to entrainment of food web materials at the south Delta under current operations. However, operations at the north Delta diversions (NDD) would create an additional site for entrainment, although the benefits of reduced pumping in the south Delta likely outweigh the potential negative effects at the NDD, given a large fraction of Delta phytoplankton is derived from in situ production within the Delta. Increased contributions from the highly productive San Joaquin River under the Proposed Project (as a result of less south Delta pumping) could also provide a mechanism for increased transport of food web materials to downstream areas. Please refer to Chapter 6 of the CWF Biological Assessment for details on the food web entrainment analysis.</p> <p>For more information on the history of changes in the Delta and stressors, please see Appendix 1A, Final EIR/EIS, and Master Response 23. Chapter 11 of the Final EIR/EIS includes information on the effects of alternations in the Delta and upstream watersheds on the aquatic ecosystem, and Appendix 11A describes stressors on covered fish species analyzed in the EIR/EIS. In addition, Appendix 5 in the 2013 BDCP provides more information on abiotic and biotic stressors in the Delta.</p> <p>Also, see the Nonnative Species Section in Chapter 11 for more information on invasive clams in the Delta.</p> <p>Please see Chapter 3 in the Final EIR/EIS for an updated discussion on the Collaborative Science and Adaptive Management Program (CSAMP) under the Proposed Project. The project proponents will collaboratively work and integrate with existing science programs to inform and improve CVP and SWP operations and work to address uncertainties and fill important knowledge gaps related to the Delta ecosystem and listed species.</p>
2579	34	Overall, the BDCP/California Water Fix, with the habitat restoration elements removed from the original proposed project, represents a "piecemeal" approach to satisfying the Delta Reform Act requirements for new water facilities in the Delta. The original proposal took credit for poorly defined restoration projects occurring late in a 50-year project period. Issues pertaining to the restoration projects included concerns regarding mercury bioaccumulation, invasive clam proliferation, loss of Delta agricultural lands, etc. It appears that the Project proponents determined that these issues were too difficult to tackle, leaving the proposal to be a water conveyance project, with no clear ecosystem benefits. The Project proponents point to the likely benefits of the EcoRestore project, to be done by others, in an effort to gain some form of ecosystem restoration credit. Without addressing that project directly, this appears, from a public perspective, to be some form of "shell game" that fails to demonstrate consistency with the co-equal goals.	<p>Please see Master Responses 8 (Lead Agencies Analyzed Project as a Whole) and 31 (Compliance with the Delta Reform Act). A modified Proposed Project (Alternative 4A/California WaterFix) is being considered. Alternative 4A reflects the state's proposal to separate the conveyance facility and habitat restoration measures into two separate efforts: California WaterFix and California EcoRestore. Alternative 4 remains a viable alternative.</p> <p>As stated in Section 4.1 of the RDEIR/SDEIS, the Proposed Action "would help resolve many of the concerns with the current south Delta conveyance system while otherwise helping to reduce threats to endangered and threatened species in the Delta through limited but substantial amounts of habitat restoration, as necessary to mitigate significant environmental effects and satisfy applicable ESA and CESA standards." Restoration actions that are independent of Proposed Action, such as EcoRestore, are evaluated as part of the cumulative impact analysis. The cumulative analysis included consideration of impacts related to mercury bioaccumulation (RDEIR/SDEIS section 5.2.2.4), invasive clam proliferation, and loss of Delta agricultural lands (RDEIR/SDEIS section 5.2.4.9). Please refer to Master Response 4 for additional information regarding the proposed Alternative 4a.</p>
2579	35	The governance of BDCP/California WaterFix is important because all of the decisions that could have significant impacts on local entities will be made under the governance framework proposed by BDCP/ California WaterFix (e.g., adaptive management, facility design and construction, research, public outreach, land acquisition, etc.). With a plan as far-reaching and consequential as BDCP/ California WaterFix, it is important that governance be representative. Unfortunately, the BDCP/ California WaterFix proposed governance structure gives great authority to water exporter interests, but does not provide local entities (such as local government and special districts such as Sacramento Regional County Sanitation District) any official voice in future BDCP/ California WaterFix actions or adaptive management decisions. As described in Appendix D, section 3.4.1.4.5 of the	The Proposed Project is a joint RDEIR/SDEIS prepared in compliance with the requirements of CEQA and NEPA. Before the selection and approval of an alternative considered, the Lead Agencies must comply with the necessary state and federal environmental review requirements. This document, along with the BDCP Draft EIR/EIS, and Final EIR/EIS are intended to provide sufficient CEQA and NEPA support for approval of the Proposed Project or any of the action alternatives for either compliance strategy. As implementation of the Proposed Project or any of the action alternatives will require permits and approvals from public agencies other than the Lead Agencies, the CEQA and NEPA documents are prepared to support the various public agency permit approvals and other discretionary decisions. These other public agencies are referred to as responsible agencies and 20 trustee agencies under CEQA (State CEQA Guidelines Sections 15381 and

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		RDEIR/SDEIS, the Real Time Operations Team is dominated by water supply interests and does not consist of a single local representative. Also, in the BDCP Chapter 7, key decisions associated with implementation of the BDCP are deferred to the Implementation Office, which will be led by a Program Manager to be selected by, and report to, the Authorized Entity Group. The Authorized Entity Group will be established to provide program oversight and general guidance to the Program Manager regarding implementation of the Plan. The Authorized Entity Group will consist of the Director of DWR, Regional Director for Reclamation, and a representative from both the State Water Contractors and Federal Water Contractors. Clearly, this is not configured to include local stakeholder interests, as virtually all of the governance and implementation authority remains in the control of water supply interests. The RDEIR/SDEIS does not propose any significant changes to the governance structure laid out in the original BDCP, despite extensive public comments and concern.	15386) and cooperating agencies under NEPA (e.g., USACE and EPA). Many of the comments are focused on issues not addressing the adequacy of the EIR/S; however, Master Responses have been prepared. Please refer to the following Master Responses for more details: <ul style="list-style-type: none"> • Master Response 44- Decision Tree • Master Response 33- Adaptive Management • Master Response 5- Governance Structure and Implementation • Master Response 41- Transparency for public involvement
2579	36	Sacramento Regional County Sanitation District continues to be troubled that the BDCP/California WaterFix governance structure lacks any meaningful role for local stakeholders. Although there is a Stakeholder Council, which allows many stakeholders, including local counties and agencies, to convene and hold meetings on BDCP/California WaterFix-related issues, this group has no authority in decision-making matters for BDCP/WaterFix—even for issues that directly affect local counties, communities, or special districts. As currently structured, disputed matters will be raised to the Authorized Entity Group and the Permit Oversight group. However, there is a lack of balance between the two groups that could lead to an inherent bias towards water exporter interests. This imbalance must be corrected and could possibly be solved by adding local county representation on the Authorized Entity Group, thus making both groups have four members each.	This comment is an opinion about the decision-making process and roles of advisory groups for the California WaterFix operations. Decisions about operations including adaptive management will be made by DWR in consultation with the appropriate regulatory agencies. Please see Master Response 5 for more information regarding Governance Structure and Implementation. No comments on the content or process of the EIR/EIS are presented.
2579	37	In our (Sacramento Regional County Sanitation District) previous comment letter we referenced a list of major concerns from the Delta ISB review, dated May 15, 2014, explaining how the science in the BDCP effort falls short of what the project requires. Many of these concerns remain with the current version of the RDEIR/SDEIS, Although the planned amount of habitat restoration has been reduced, many of the impact assessments hinge on overly optimistic expectations about the feasibility, effectiveness, or timing of the proposed conservation actions, especially habitat restoration. As an example, the planned channel margin habitat restoration is intended to provide juvenile salmon new nursery habitats, including increased food supply, hydraulic refuge, and predator refuge. However, rather than specifying a total acreage of habitat to be restored or ensuring that the restored habitat will benefit juvenile salmon, rather than predatory fishes, clams, or harmful algae production, the project specifies that 5.5 miles of habitat restoration will occur – which is not a large area. (Section 4.1.3.3, page. 4.1-27, line 3).	The Lead Agencies strived to use the best available science throughout the effects analysis. The use of specific scientific data and findings was often vetted with fisheries managers to ensure it was the best available. A variety of data were obtained for the Proposed Project process: quantitative data from peer-reviewed published literature on topics specific to the Plan Area; peer-reviewed published literature outside the Plan Area but on topics relevant to the Proposed Project; unpublished quantitative data from within the Plan Area and from outside of the Plan Area; qualitative data or personal communication with topical experts; and expert opinion if no other sources were available. See Master Response 30 for a discussion of the adequacy of the models. The commenter is referring to channel margin extent that would be restored under Alternative 2D. Note that the preferred Alternative (4A) would restore 4.6 levee miles of channel margin habitat (RDEIR/SEIS, Section 4.1.2.3). The difference reflects the smaller extent of habitat affected by the facility footprint (3 intakes for Alternative 4A, versus 5 intakes for Alternative 2D). In both cases, the restoration mitigates the construction and operational effects of the north Delta intakes. For responses to comments related to the Delta Independent Science Board’s letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.
2579	38	In our (Sacramento Regional County Sanitation District) previous comment letter we referenced a list of major concerns from the Delta ISB review, dated May 15, 2014, explaining how the science in the BDCP effort falls short of what the project requires. Many of these concerns remain with the current version of the RDEIR/SDEIS, The Project has many uncertainties that are considered inconsistently and incompletely, with modeling not used effectively to bracket a range of uncertainties or to explore how	The Lead Agencies strived to use the best available science throughout the effects analysis. The use of specific scientific data and findings was often vetted with technical subject matter experts to ensure it was the best available. A variety of data were obtained for the Proposed Project process and the best available modeling was conducted. The modeling incorporated into the EIR/EIS analyses does not provide absolute values, but provides a comparison of conditions under the Proposed Project and other action alternatives to conditions under the Existing Conditions and the No Action Alternative so the decision makers can select the

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		uncertainties may spread. This is especially true regarding the potential impacts of increased reversed flows in the Sacramento River downstream of the North Delta Diversion (Section 3.6.1.1, page 3-29, line 13).	most appropriate alternative. It is acknowledged in Chapter 5 that the model results are only to be used in a comparative manner, and that absolute conditions in the future probably will be different. Therefore, it was determined that an uncertainty analysis was not required for this EIS. See Master Response 30 for a discussion of the adequacy of the models. For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.
2579	39	In our (Sacramento Regional County Sanitation District) previous comment letter we referenced a list of major concerns from the Delta ISB review, dated May 15, 2014, explaining how the science in the BDCP effort falls short of what the project requires. Many of these concerns remain with the current version of the RDEIR/SDEIS, The analyses still neglect important downstream effects on San Francisco Bay. As an example, the plan should recognize that while Microcystis cannot grow in the San Francisco Estuary, Microcystis grown in the Delta can travel downstream and enter the Estuary where the cells will die and release their harmful toxins (Section 4.2.7, page 4.2-46, line 17).	The RDEIR/SEIS found that the modified reservoir operations, operation of the conveyance facilities, and residence time/temperature throughout the Delta would not change in a manner that would result in greater frequency of Microcystis blooms in the Delta. Therefore, the preferred Alternative 4A would have a less than significant impact to Microcystis in the Delta, and thus in San Francisco Bay. Master Response 14, Water Quality, has been prepared to address assessment methodology, water quality data sources, salinity, dissolved organic carbon, selenium, mercury, pesticides, temperature and Microcystis. Master Response 30 addresses comments regarding modeling. For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.
2579	40	In our (Sacramento Regional County Sanitation District) previous comment letter we referenced a list of major concerns from the Delta ISB review, dated May 15, 2014, explaining how the science in the BDCP effort falls short of what the project requires. Many of these concerns remain with the current version of the RDEIR/SDEIS, many details of how adaptive management will be implemented are left to a future management team without explicit prior consideration of potential alternative management actions that could be enacted or the specific thresholds for implementing actions. The funding for enacting projects identified through adaptive management is also uncertain, because the adaptive management project funds can also be used to purchase water for the Environmental Flow Program. California Water Fix should provide independent and guaranteed funding for both of these programs (Section 3.4.22.5, page D.3-86, line 15).	The adaptive management and monitoring program will be further developed during project implementation. As part of this development, more specific and detailed goals and objectives may be developed that are based on the final requirements of the Biological Opinion, state 2081(b) incidental take permit, and other relevant permits and regulatory requirements. Because those requirements are not final, such goals and objectives are premature. DWR and Reclamation will be held accountable to the requirements of the Biological Opinion and state 2081(b) incidental take permit through the permit requirements and the enforcement authority of the U.S. Fish and Wildlife Service and National Marine Fisheries Service (through the Endangered Species Act) and the California Department of Fish and Wildlife (through the California Endangered Species Act). DWR and Reclamation have provided a description of the proposed Adaptive Management and Monitoring program as it stands today to provide a more complete picture of the proposed action. Monitoring is a requirement of CEQA as well as many of the permits that will be required as part of the compliance requirements. As described on p. 4.1-20 of the RDEIR/SDEIS, collaborative science and adaptive management will be funded through a combination of mitigation funds from participating state and federal water contractors, and available supplemental state and federal funding. Please refer to Master Response 5. For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.
2579	41	Section 4 of the current document continues the pattern of a lack of sound science. For example, the criterion of protection of delta smelt by having an impact on less than 5% of the population may be inadequate, given the extremely low density of delta smelt currently thought to be present in the Delta. Population size is so poorly understood as to make this metric impractical, and may be so low that it is equal to or less than the effective population size necessary to preserve genetic diversity and prevent a genetic bottleneck of the population as it (hopefully) recovers. In such an instance, every individual is likely to matter. (Section 4.2.10, page 4.2-51, line 8) In addition, the document states that there could be a 2% decrease in longfin smelt spawning flows, "relative to Existing Conditions when climate change effects are accounted for under No Action Alternative (ELT) conditions, but not to an adverse level". However, the level which would constitute an adverse level is not defined or well understood. This level needs to be defined, in order for the reader to be able to assess the relative impact of a 2% decrease, and to be able to compare this to other potential impacts to spawning habitat. Similarly, "a small-to-moderate impact from summer water flows and temperatures" is anticipated, but the level of effect is not properly quantified or	As noted in several responses above (for example, Letter 2579-37 and -38), the best available science was used throughout the analysis process. See Master Response 30 for a discussion of the adequacy of the models. The various analyses also included an acknowledgement that there are uncertainties associated with the dynamics affecting the fish populations. There are a number of existing efforts underway as part of the Collaborative Science and Adaptive Management Program and Longfin Smelt settlement agreement, related to the 2008/2009 USFWS/NMFS SWP/CVP BiOps and DFW ITP, to address uncertainties related to the smelts and salmonids. Also, as noted above, the modeling provides a comparison of the magnitude of effects between the alternative and the existing condition and the conditions in the No Action scenario. The environmental documents have disclosed the uncertainty associated with the science. As noted, the level in which there is an adverse effect is not known to science today. The environmental documents, using the best available modeling and knowledge of the species, has concluded that when comparing the future conditions that if the alternative is implemented, there would be a 2% decrease in flows. This effect has been deemed not adverse due to the limited change associated with spawning habitat when contrasted with the effects of not implementing the alternative. Master Response 30 addresses comments regarding

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		justified, so it is not possible for the reader to assess this impact in the context of other potential habitat alterations. (Section 4.2.10, page 4.2-53, lines 22-25).	modeling.
2579	42	The 2015 Delta Independent Science Board review of the RDEIR/SDEIS, also retains the majority of Sacramento Regional County Sanitation District May 15, 2014, criticisms. "The Current Draft remains deficient in due regard for several aspects of habitat restoration: landscape scale, timing, long-term monitoring, and the strategy of avoiding damage to existing wetlands."	Since 2006, the Proposed Project has been developed based on sound science, data gathered from various agencies and experts over many years, input from agencies, stakeholders and independent scientists, and more than 600 public meetings, working group meetings and stakeholder briefings. All of the documents, studies, administrative drafts, and meeting materials have been posted online since 2010 in an unprecedented commitment to public access and government transparency. Please refer to comment letters 1448 and 2546 to see responses to the Delta Independent Science Board's comments. The topics that are considered deficient in the comment have been addressed in numerous master responses. Please refer to the following master responses as well as the Delta ISB letters: Master Response 17-Biological Resources (levels of impacts and mitigation) Master Response 22- Mitigation, Environmental Commitments, Avoidance and Minimization and Alternative-Specific Environmental Commitments Master Response 3- Adaptive Management and Monitoring For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.
2579	43	The 2015 Delta Independent Science Board review of the RDEIR/SDEIS, also retains the majority of Sacramento Regional County Sanitation District May 15, 2014, criticisms. "We commented previously that modeling was not used effectively enough in bracketing uncertainties or exploring how they may propagate or be addressed. In the Current Draft, uncertainties and their consequences remain inadequately addressed, improvements notwithstanding."	As described in response to Comment 38, the purpose of the EIR/EIS analyses is not to provide a comparison of the effects resulting from the no action contrasted with the alternative. The decision makers can select the most appropriate alternative. It is acknowledged in Chapter 5 that the model results are used in a comparative manner, and that absolute conditions in the future probably will be different. Therefore, it was determined that an uncertainty analysis was not required for the environmental documents. See also response Master Response 30 for a discussion related to the adequacy of the modeling.
2579	44	The 2015 Delta Independent Science Board review of the RDEIR/SDEIS, also retains the majority of Sacramento Regional County Sanitation District May 15, 2014, criticisms. "We did not find examples of how adaptive management would be applied to assessing - and finding ways to reduce - the environmental impacts of project construction and operations." "...the Current Draft retains unwarranted optimism, as on page 4.3.25-10: "By reducing stressors on the Delta ecosystem through predator control at the north Delta intakes and Clifton Court Forebay and installation of a nonphysical fish barrier at Georgiana Slough, Alternative 4A will contribute to the health of the ecosystem and of individual species populations making them stronger and more resilient to the potential variability and extremes caused by climate change." The scientific basis for this statement is lacking, and an adaptive or risk-based management framework is not offered for the likely event that such optimism is unfulfilled."	The comment has extracted a quote out of the section addressing climate change and resiliency. As noted on page 4.3.25-8 "Whereas the other sections are organized to identify effects of Alternative 4A and how to mitigate any significant impacts, this section's function is to analyze and disclose how Alternative 4A would affect the Delta's resiliency and adaptability to expected climate change. While climate change is already ongoing and would occur under the ELT timeframe, effects of Alternative 4A on the resiliency and adaptability would be greater under LLT conditions as climate change effects are expected to be more pronounced. Nevertheless, an assessment of conditions under the ELT timeframe is provided below." This assessment is built upon the modeling and effects analysis that were provided in Chapter 11 Fish and Aquatic Resources (DEIR/S) and Section 4 (RDEIR/SDEIS). See also: <ul style="list-style-type: none"> • Master Response 44- Decision Tree • Master Response 33- Adaptive Management • Master Response 5- Governance Structure and Implementation • Master Response 22- Mitigation, Environmental Commitments, Avoidance and Minimization and Alternative-Specific Environmental Commitments

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			<ul style="list-style-type: none"> Master Response 3- Adaptive Management and Monitoring <p>For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.</p>
2579	45	The Delta Plan requires that all covered actions "document use of best available science." (2013 Delta Plan Policy GP 1, p. 53.) Regional San's 2014 comments, along with those submitted on the RDEIR/SDEIS, including the expert reports from Flow Science and others who commented on the DEIR/DEIS and/or the RDEIR/RDEIS, demonstrate that the Project and its environmental review documents do not document the use of best available science. In this critical respect, the California Water Fix and its EIR/EIS are inconsistent with both the language and intent of the Delta Reform Act and Delta Plan.	<p>The lead agencies believe that the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS are complete in their evaluation of impacts (using the best available science), direct and cumulative, that project description is complete and satisfies the requirements of NEPA, and that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies believe that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS.</p> <p>For more information regarding the Proposed Project's compliance with the Delta Reform Act, please see Master Response 31. Master Response 30 addresses comments regarding modeling.</p>
2579	46	Another example of failing to use best available science is "The Important Regional Action" in the BDCP, which appears to be retained since it was not recirculated as strikeout. It incorrectly characterizes the role of ammonia in the estuary. Regional San has previously commented on the "Important Regional Actions" section of BDCP, including a comment letter to Secretary Laird and Ms. Olson on September 6, 2013, attached to Regional San's 2014 comments. We take exception to the fact that our suggested changes to the Important Regional Action section were not incorporated in this version of the 2013 BDCP, or California Water Fix and the RDEIR/SDEIS since it was not recirculated as strikeout. Inaccurate scientific information in the BDCP document can be misused in future documents and is another reason for removing this section. Section 3.5.1 of the BDCP lists ammonia load reduction as an Important Regional Action that must occur if BDCP intends to achieve its fish recovery targets. As described in our July 2014 detailed comments, there are a number of serious problems with this section: ammonia load reductions at Regional San are not among the activities that BDCP applicants plan to undertake in order to obtain their incidental take permits; an incomplete scientific literature set is used; disputed scientific claims are used without regard to their merit; and claims regarding an increase in productivity are unsubstantiated. Its inclusion is not insignificant to Regional San. The mis-characterization of scientific "facts" in Section 3.5.1 is not a fair representation of the current understanding of ammonia's role in the Delta and Suisun Bay and is another example of best available science not being employed. As described in detail in our 2014 comment letter, this section of the BDCP overstates the magnitude and certainty of the effects of reduced ammonia loadings by including only a portion of the scientific literature on this topic. One of the most comprehensive scientific reviews of ammonia's role in the estuary, completed by the San Francisco Estuary Institute, was not even included as a reference in this section. See http://www.sfei.org/sites/default/files/SuisunSynthesis1_Final_March2014_0.pdf The section also relies on, and presents as fact, information that has not been peer reviewed and contains grossly deficient methods descriptions, and makes bold, unsubstantiated claims about increases in productivity due to ammonia load reductions. Accordingly, the Ammonia Load Reduction portion of the Important Regional Action section should be deleted because: it provides no useful benefit; it perpetuates disputes that are now moot since Regional San is spending approximately 1.7 billion dollars to upgrade its treatment plant, of which nearly a billion dollars is to significantly reduce ammonia and nitrate in its treated effluent. BDCP/California Water Fix further confuses the role of nutrients in the estuary by describing BDCP/ California Water Fix -related nutrients as beneficial while also	<p>As explained in the Executive Summary of the RDEIR/SDEIS, all of the comments received during the Draft EIR/EIS 2013–2014 public review period were considered in the development of the RDEIR/SDEIS. The RDEIR/SDEIS does not include responses to comments on the Draft EIR/EIS, though some revisions have been made in response to comments received on the Draft EIR/EIS. Consistent with the requirements of the California Environmental Quality Act (CEQA Guidelines §15088) and the National Environmental Policy Act (Council on Environmental Quality § 1503.4) and policies held by all Lead Agencies governing the implementation of CEQA and NEPA, all comments received on the DEIR/EIS and RDEIR/SDEIS are included with the Final EIR/EIS. Please see Master Responses 42 regarding treatment of public comments.</p> <p>Numerous comments were received that focused on various elements of the BDCP. Where the comments focused on elements of the BDCP that overlap with the elements of Alternatives 2D, 4A, or 5A (e.g., CM1 as it comprises of the North Delta Diversions, tunnels, and supporting facilities), specific responses are presented. Where comments raised issues as to whether the BDCP and other HCP/NCCP alternatives in the 2013 Draft EIR/EIS were potentially feasible and could function as an alternative for purposes of meeting CEQA and NEPA's requirements to analyze a reasonable range of alternatives to the proposed project (e.g., issues regarding the BDCP Effects Analysis or financial feasibility), responses are presented generally in Master Response 5. Where comments submitted on the BDCP were focused on elements outside the scope of the environmental analysis or viability of the BDCP and other HCP/NCCP alternatives within the context of CEQA/NEPA (e.g., request of specific revisions to the BDCP related to mapping or references), no specific responses are provided and further consideration will be given to these comments, and any revisions to the Draft BDCP would only be made, if an HCP/NCCP alternative was ultimately approved at the conclusion of the CEQA/NEPA process.</p>

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		claiming that nutrients from Regional San (and other sources) are harmful. It is disingenuous and paradoxical for Project proponents to argue that Regional San must remove nutrients from its discharge while simultaneously claiming that BDCP/ California Water Fix conservation measures/environmental commitments will improve the Delta ecosystem by adding nutrients.	
2579	47	Page 4.1-5, line 17 and 4.1-6, line 37 An adaptive management program alone will not ensure the ongoing welfare of native species. Adaptive management is excellent in principal, but there have been very few successfully implemented examples of adaptive management in the Delta thus far, so it is an environmentally dangerous stretch to count on this process working effectively and adequately for these aims in the future.	Please see Chapter 3 in the Final EIR/EIS for an updated description of the Collaborate Science and Adaptive Management Program (CSAMP), including information on the CSAMP structure and decision-making processes. Actions taken through the CSAMP will be based on sound science and targeted research actions to improve our understanding of effects from CVP and SWP operations and other management actions on listed species and resolve key knowledge gaps on the Delta ecosystem. New science from the CSAMP will help inform and improve future CVP and SWP operations to minimize potential effects to listed species. Additional details regarding Adaptive Management and Monitoring can be found in Master Response 33.
2579	48	Page 4.1-6, line 30 BDCP should not purchase water to supply the spring outflow criteria, it should come from a reduction in water available for export.	The text referred to in this comment has been modified in the Final EIR/EIS to not include acquisition of water related to spring outflow criteria. The model results presented in the Final EIR/EIS do not include water acquisition methods.
2579	49	Page 4.1-7, Table 4.1-2 The table describes the intakes operation with "Low-Level pumping", but it has been described in numerous BDCP Public Meetings that the intakes are completely operated through gravity. Subsequent text does not make the method clear either. Notice in all the areas where Alternative 4A is described (including Executive Summary), the method of conveyance between the "Intermediate Forebay" and Clifton Court Forebay is clearly described as gravity, whereas method of conveyance through the intakes and the single-bore tunnels to the Intermediate Forebay is not identified. The table refers to "Table 3-16 in the Draft EIR/EIS" and "Section 3.6.4 of the Draft EIR/EIS" numerous times to further define the operation of Alternative 4A. Table 3-16 and Section 3.6.4 of the DEIR/DEIS has not been updated and revised in the RDEIR/SDEIS. Table 3-16 describes operation as "constant low level pumping" in numerous places.	Proposed north tunnels for Alternative 4A will carry water by gravity from the intakes to the intermediate forebay. From the intermediate forebay, the two main tunnels will carry water under gravity to a pumping plant located at the north-east corner of the Clifton Court forebay (CCF). Pumps at the pumping plant will lift the water into the North CCF. During periods when the Sacramento River stage is higher than proposed North CCF water surface elevations, it is possible to achieve gravity flow from the intakes to NCCF (no pumping will be required). Low level pumping would occur when the water in the Sacramento River falls below 5,000 cfs. This mode of operation would allow for movement of water through the system to prevent stagnation. The comment does not question any environmental issues.
2579	50	Table 4.1-2, Executive Summary, Appendix B, Section 4.3.1 (Water Supply), Section 4.3.2 (Surface Water), and additional sections of RDEIR/SDEIS lack a clear picture of how much water is being diverted by the proposed Alternative 4A. Table 4.1-2 refers to other sections and tables that are not updated and do not reflect accurate information. This information needs to be presented graphically, as plots of river flow and diversion flow over time for a year, for each water year type. Tables 5-4 through 5-6 do not show the amount of water at Freeport and below. Tables 6-2 through 6-9 only show flows for January-March of Wet Years. Tables B.2-1, B.2-2, and B.2-3 only show flows for January-March of Wet Years as well.	The Final EIR/EIS includes CALSIM II and DSM2 model results for Alternative 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. Graphic and data are presented in this appendix. A master response has also been prepared addressing modeling issues (See Master Response 30).
2579	51	Page 4.1-13, line 16 Reverse flow in the Sacramento River is somehow completely left out of operation sequences. The Real-Time Operation Decision-Making Process does not mention reverse flow in the river and what precautions and operations are in place to monitor and operate for it.	Please see Section 3.6.4.2 in Chapter 3 of the Final EIR/EIS for information on Old and Middle River reverse flows and real-time operations. The Adaptive Management will be responsible for implementing (see Master Response 33 for additional details): Overview of the Adaptive Management Approach The AMP will be implemented through a series of distinct steps meant to identify scientific and/or

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			<p>management uncertainties, develop research actions to reduce that uncertainty, and incorporate new information into management actions. The Adaptive Management Program is comprised of four components, referred to as “phases,” of adaptive management: (1) Plan; (2) Assess; (3) Integrate; and (4) Adapt. The scope of the AMP consists of 5 primary objectives:</p> <ol style="list-style-type: none"> 1. Inform and improve on: <ol style="list-style-type: none"> a. Operation of SWP/CVP facilities within the Delta under the existing BiOps and CESA authorizations and the new CWF joint BiOp and 2081(b) permit. b. Design of fish facilities, including the proposed NDD fish screens. c. Habitat restoration and non-operational mitigation relative to in-Delta SWP/CVP operations under existing and new BiOps and CESA authorizations. 2. Ensure the ongoing SWP/CVP operations and future construction and operation of the CWF are implemented in a way that reflects the current state of scientific understanding and improves the viability of the species to the extent possible. 3. Maintain and improve water supply reliability, to the extent possible. 4. Communicate (provide transparency) to the broader community of state, federal and local agencies, the public, universities, scientific investigators, public water agencies and nongovernment stakeholders how existing operations will be assessed, how new scientific investigations will be prioritized, and carried out, and how the results of those investigations will be integrated into adaptive management decisions. 5. Build on and support existing efforts of the Interagency Ecological Program, Collaborative Science and Adaptive Management Program, Delta Stewardship Council/Delta Science Program, and other relevant individual agency science initiatives.
2579	52	<p>Page 4.1-18, line 36 and 4.1-20, line 21</p> <p>Collaborative science should allow the opportunity for scientific input from all informed organizations, not just those included in the CAMT. This could be done by allowing public comments at the end of CAMT meetings, and by providing an annual public review of the Collaborative Science and Adaptive Management Program (AMMP), with written responses to submitted questions.</p>	<p>This section regarding collaborative science has been updated and appears in Chapter 3, Section 3.6.4.4 Final EIR/EIS.</p> <p>For more information regarding adaptive management please see Master Response 33 and transparency is discussed in Master Response 41.</p>
2579	53	<p>Page 4.1-19, line 10</p> <p>The Delta Science Program may coordinate a peer review, but does not conduct peer review with their own staff. This should be made clear in the text.</p>	<p>This has been clarified in Section 3.6.4.4 of the Final EIR/EIS.</p>
2579	54	<p>Page 4.1-20, line 47</p> <p>Collaborative science and monitoring conducted to support the proposed project should be fully supported by project funding, and receive sufficient funding to allow comprehensive and determinate studies.</p>	<p>Funding for the science and monitoring program will be provided. Please refer to Master Response 5 for a discussion of who is paying and the associated governance plan.</p>

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2579	55	<p>Page 4.1-27, line 3</p> <p>The channel margin restoration projects need to provide sufficient shallow-water and riparian habitat to provide salmonids with the envisioned benefits. If river margins are going to provide trees to create woody debris, vegetation to feed invertebrates, and fish rearing habitat, it will need sufficient near-shore area to produce a variety of tidal depths (at low slopes) and function as a connection between the terrestrial environment and the river. Adding a couple feet of submerged bench at the waterward side of a rip-rapped levee would not be likely to provide the plan's described benefits (such as foraging opportunities, rearing habitat, resting spots, and refuge). It is more likely that set-back levees would need to be constructed to allow a natural transition between the river and landscape that will produce an effective channel margin enhancement. Therefore 5.5 levee miles of channel margin restoration should be designed to maximize marginal habitat width (surface area), as well as meeting the total required distance.</p>	<p>Design and implementation of environmental commitments, including channel margin enhancement, will be guided by the best available science and input from resource experts to maximize benefits to listed species. The comment does not identify any issues related to the adequacy of the environmental documents.</p>
2579	56	<p>Page 4.1-42 to 43, General Comment</p> <p>The Assumption for the Purposes of Analysis and Physical Modeling sections are very confusing and unclear. They do not provide a simple clear basis for No Action Alternative, Early Long-Term, and Late Long-Term. It describes some mandated work of improvement and restoration as "considered part of the NAA" which was part of Alternative 4 but not part of 4A, but then does not clarify if those assumptions were taken into consideration for modeling NAA. It is very misleading to rely on work that's not part of Alternative 4A or NAA. Because of this assumption and lack-of-clarity throughout the document, it is difficult to analyze the true impact of the project (Alternative 4A) because of a lack of clear baseline conditions.</p>	<p>Please refer to Master Response 1 regarding baseline conditions.</p> <p>For more information regarding alternatives to the Proposed Project please see Master Response 4. For more information regarding habitat restoration, please see Master Response 22.</p> <p>Appendix 5F of the Final EIR/EIS has been provided to address the comparison of alternatives 2D, 4A and 5A to the RDEIR/SEIS modeling results.</p> <p>Master Response 30 addresses comments regarding modeling.</p>
2579	57	<p>Page 4.1-43, Physical Modeling</p> <p>The modeling work described in this section along with the associated detail of modeling provided in the Appendix B (Supplemental Modeling Results for New Alternatives) are inadequate. The modeling work performed for the new alternatives is only CALSIM II monthly average and not DSM2 hourly. This does not meet BDCP's 2013 modeling standard when DSM2 hourly modeling was performed to analyze the impact. No significant results and conclusion can be obtained from the very limited modeling that has been performed for the new alternatives.</p>	<p>The Final EIR/EIS includes model results for Alternative 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS. The model results include monthly flow data along the Sacramento River near Freeport based on the CALSIM II model results. Disaggregated data were calculated during preparation of the EIR/EIS using the DSM2 model to indicate changes during tidal cycles. Therefore, since the comparison of the data indicated that the effects of 4A were generally consistent with the previously circulated RDEIR/SDEIS, it was not necessary to conduct additional modeling. See Master Response 30 for additional details regarding the adequacy of the modeling.</p>
2579	58	<p>Page 4.2-19, lines 15-42</p> <p>The text correctly states that the ongoing upgrades to the Sacramento Regional Wastewater Treatment Plant (SRWTP) will decrease the concentration of ammonia in the Sacramento River downstream of the SRWTP relative to Existing Conditions, that the Delta environment is not Clean Water Act Section 303(d) listed for ammonia, and that no ammonia-related impairments currently exist. However, the text goes on to state that a decrease in ammonia concentrations would be anticipated "for all areas that are influenced by Sacramento River water" and includes "various locations in the Delta and at Jones and Banks Pumping Plants where Delta water is exported to the SWP/CVP Export Service Areas". This statement should be clarified because according to Kudela, the majority of the ammonia currently discharged by SRWTP is taken up by phytoplankton and/or converted to nitrate well upstream of the current Delta water export facilities. [Kudela (USCS) final report to Regional San]. As such,</p>	<p>The reduction in ammonia and conversion to nitrate originating from the SRWTP discharge as it is transported along the Sacramento River, as cited by the commenter's report, is acknowledged. The assessment approach generally considers conservative transport. Further, the assessment is appropriate in stating that in areas where ammonia is influenced by the Sacramento River, concentrations would likely decrease, and areas not influenced by the Sacramento River would likely see concentrations similar to Existing Conditions, given the similarity in the ammonia concentrations of the Delta source waters. Thus, no change to the assessment is needed.</p>

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		the upgrades to the SRWTP are expected to decrease ammonia concentrations in locations along the Sacramento River where SRWTP-derived ammonia currently occurs, given particular seasonal and flow conditions, but ammonia concentrations are currently already lowered substantially by the time that any Sacramento River water is routed to the South Delta.	
2579	59	<p>Page 4.2-33, lines 38-45</p> <p>The text correctly states that the ongoing upgrades to the SRWTP will include processes for nitrification and partial denitrification. However, the text goes on to state that "actual nitrate concentrations would likely be higher than the modeling results indicate at certain locations under the No Action Alternative (ELT)"... "because the mass balance modeling does not account for contributions from the SRWTP". This statement should be clarified because the majority of the ammonia currently discharged by SRWTP is taken up by phytoplankton and/or converted to nitrate by the time the water has passed downstream of Rio Vista [Kudela (USCS) final report to Regional San]. As such, the upgrades to the SRWTP are expected to increase nitrate concentrations only in locations along the Sacramento River where SRWTP-derived ammonia currently occurs, because in the future the ammonia will already have been converted to nitrate prior to discharge to the river.</p>	The reduction in ammonia and conversion to nitrate originating from the SRWTP discharge as it is transported along the Sacramento River, as cited by the commenter's report, is acknowledged. Based on the comment, the approach presented in Impact WQ-15 is conservative in its assumption that nitrate may be higher than modeling results show. Even with this conservative assumption, the impact would be less than significant for all alternatives. No change to the assessment is needed.
2579	60	<p>Page 4.2-34, lines 14-18</p> <p>The text states that "in the Delta region, nitrate concentrations would be higher than indicated in the modeling results for areas receiving Sacramento River water, including Banks and Jones pumping plants". This statement should be clarified because the majority of the ammonia currently discharged by SRWTP is taken up by phytoplankton and/or converted to nitrate well upstream of the current Delta water export facilities, by the time the water has passed downstream of Rio Vista [Kudela (USCS) final report to Regional San]. As such, the upgrades to the SRWTP are expected to increase nitrate concentrations only in locations along the Sacramento River where SRWTP-derived ammonia currently occurs, because in the future the ammonia will already have been converted to nitrate prior to discharge to the river.</p>	Please see Response to Comment 2579-59.
2579	61	<p>Page 4.2-46, line 17</p> <p>Microcystis grown in the Delta can be advected downstream into San Francisco Bay, where the cells will lyse and release microcystin. In this manner, microsystem may pose a risk to wildlife in the bay, even though Microcystis will not grow in the salty water.</p>	A Master Response (Master Response 14- Water Quality) has been prepared to address assessment methodology, water quality data sources, salinity, dissolved organic carbon, selenium, mercury, pesticides, temperature and Microcystis. A master response has also been prepared addressing modeling issues (Master Response 30).
2579	62	<p>Page 4.2-46, line 20</p> <p>It is interesting to see that the reduction in total nitrogen load (associated with the SRWTP improvements) are expected to have minimal effect on water quality degradation, primary productivity, or phytoplankton community composition in the San Francisco Bay. What is the basis for this conclusion and would a similar lack of effect be expected in the Delta?</p>	The basis for the conclusion is provided in the more detailed discussion for the No Action Alternative at the late long-term timeframe, in Impact WQ-34 in Section 8.4.3.1, No Action Alternative, in Chapter 8, Water Quality, as noted by the cross-reference to this section.
2579	63	The Surface Water impact section completely lacks taking into account tidal influence and reverse flow in Sacramento River near the proposed intakes.	Potential changes in tidal conditions are presented in Chapters 8 and 11 with respect to effects on water quality and aquatic resources, respectively. The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The model results include monthly flow data along the Sacramento River near Freeport based on the CALSIM II model results. Disaggregated

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			data were calculated during preparation of the EIR/EIS using the DSM2 model to indicate changes during tidal cycles. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS. See also Master Response 13 for additional details on water quality.
2579	64	<p>Page 4.3.2-2, line 28</p> <p>Stating that Sacramento River flow at Freeport will only decrease by 1% of the 110,000 cfs channel capacity under Alternative 4A compared to NAA is very misleading and irrelevant to measuring any impact. The channel rarely flows at the capacity, therefore, stating 1% reduction from capacity seems to downplay the true impact of the flow reduction.</p> <p>Page 4.3.2-3, line 16</p> <p>Stating that Sacramento River flow at locations upstream of Walnut Grove will only decrease by 9% of the 110,000 cfs channel capacity under Alternative 4A compared to NAA is very misleading and irrelevant to measuring any impact. The channel rarely flows at the capacity, therefore, stating 9% reduction from capacity seems to downplay the true impact of the flow reduction. 9,000 cfs of diversion at a more realistic river flow of 20,000 cfs will cause a reduction of 45%. During the summer of a dry year like 2015, the river flow is more in the 7,000 cfs range. Showing numbers like 45% reduction, and 7,000 cfs flow, would be more realistic and transparent. It is impossible to determine impacts due to flow reduction when unrealistic numbers and scenarios are presented.</p>	The text referred to in this document is related to an analysis to determine if implementation of Alternative 4A would affect flood management in the Sacramento River as compared to the Existing Conditions and No Action Alternative. Changes in monthly flows in the Sacramento River under Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions are presented in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The model results include monthly flow data along the Sacramento River near Freeport based on the CALSIM II model results. Disaggregated data was calculated during preparation of the EIR/EIS using the DSM2 model to indicate changes during tidal cycles.
2579	65	<p>Page 4.3.4-23, lines 28-33</p> <p>This text is one of numerous locations in the RDEIR/SDEIS where the suggestion is made that modeling results may show exceedances when, in reality, such exceedances would not occur. The statement is made that sensitivity analyses were performed to assess this question. Attachment 1 to Appendix 8H contains a discussion of this additional analysis. Review of Attachment 1 indicates that the sensitivity analysis did not change the finding that the proposed alternative would cause increased exceedances of electrical conductivity standards at numerous locations in the Delta, particularly in comparison to existing conditions, which is the basis for current impaired waters listings for electrical conductivity. The conclusion is that the language which poses uncertainty regarding possible "false positive" exceedances should be dismissed with regard to the larger point that the proposed alternative will significantly degrade electrical conductivity levels in the Delta. This conclusion is based on the information presented in the BDCP EIR/EIS and the RDEIR/SDEIS.</p>	Please see Master Response 30 for discussion regarding the RDEIR/SDEIS modeling approach and Master Response 14 (the section discussing conductivity starts on page 14) for additional details on water quality.
2579	66	<p>Page 4.3.4-3, line 3</p> <p>Why is it assumed that there will be a minor increase in ammonia under Alternative 4A, compared to the No Action Alternative (ELT)? The water intake is downstream of SRWTP's discharge, so ammonia concentrations should receive the same level of dilution with the new project in place.</p>	The changes in Sacramento River ammonia shown in Impact WQ-1 for Alternative 4A are due to changes in Sacramento River flow at Freeport modeled by CALSIM. Note that the modeling of Alternative 4A was updated for the Final EIR/EIS (see Master Response 14 and 30 for more details on water quality and modeling), and the ammonia assessment with the revised Sacramento River flows at Freeport shows no change in long-term average ammonia concentrations downstream of the SRWTP discharge relative to the No Action Alternative (ELT).
2579	67	<p>Page 4.3.4-25, line 35, (also Appendix 8H, page 8H-2, lines 18 and 19)</p> <p>The statement is made that "DWR and USBR have every intention of operating SWP and CVP facilities by fine tuning reservoir storage and exports in real time to meet D-1641 standards...". In fact, no guarantee or certainty is provided that real time management of</p>	As noted in the RDEIR/SDEIS Appendix A - Chapter 8 Appendix 8H Attachment 1, due to several limitations in the CALSIM II and DSM2 modeling, it is not possible to demonstrate 100% compliance with the D1641 water quality standards. However, as noted in the Chapter 8, of the final EIR/EIS Alternative 4A results in similar degree of compliance as the No Action Alternative.

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		the SWP/CVP will eliminate the adverse degradation of electrical conductivity levels in the Delta. Additionally, some of the areas of degradation are not at D-1641 compliance points. Further, there are far too many constraints on system operation to allow for promised mitigation of electrical conductivity violations to consistently occur, especially during drought conditions when the impacts are most severe (see Tables EC-15A through EC-15D in Appendix 8H).	Please see Master Response 30 for discussion regarding the RDEIR/SDEIS modeling approach and Master Response 14 (the section discussing conductivity starts on page 14) for additional details on water quality.
2579	68	Page 4.3.7-24, line 7 Excluding fish with screened intakes does not guarantee their safe passage by water diversions. The diversion can also kill fish that contact the screen and become injured or stuck to the screen's surface. It is important to provide proper diversion flows (>0.2 feet per second) and sweeping flows (≥ the diversion flow rate) to provide delta smelt the best chance at passing by the intakes.	The North Delta Diversion would be operated to meet agency fish screen criteria for delta smelt, and the design is such that approach velocity is less than or equal to 0.2 feet per second (not >0.2 feet per second as the commenter suggests). The Biological Assessment of Alternative 4A (California WaterFix) for ESA-listed fishes includes additional analysis of the potential for injury, which, as noted in the Final EIR/EIS would be expected to be limited to a very small proportion of the population.
2579	69	Page 4.3.7-24, line 10 Although few Delta smelt are likely to occur in the vicinity of the North Delta Diversion, predation losses should be evaluated and water operations should be managed, to limit delta smelt predation risk.	The North Delta Diversion would be operated to meet agency fish screen criteria for delta smelt, which would minimize the potential for effects, but predation risk would still exist – this would be challenging to evaluate for delta smelt, but has been evaluated for other species migrating past the intakes such as Chinook salmon. CM15 aims to reduce predatory fish abundance at the NDD in an adaptive management framework.
2579	70	Page 4.3.7-25, line 18 It seems likely that water temperature south of the North Delta Diversion would increase, due to reduced flow and increased residence time. The effects of this potential temperature increase should be considered for Delta smelt.	Analysis of potential water temperature effects for Alternative 4A (California WaterFix) is provided in Section 4 New Alternatives: 4A, 2D and 5A and incorporates substantial analysis from the RDEIR/SEIS and in Chapter 11 Fish and Aquatic Resources of the DEIR/S. Water operations are expected to have little effect on water temperature, which largely varies as a result of atmospheric conditions, particularly given the relatively small differences in inflow to the Delta as a result of the alternatives. This was illustrated in the DSM2-QUAL temperature modeling undertaken for the California WaterFix Biological Assessment submitted in August 2016.
2579	71	Page 4.3.7-29, line 13 While it is beneficial to reintroduce sediment collected at the north Delta intakes into tidal restoration projects, which could assist local accretion or increase the system's total suspended sediments, the transferred sediments should be tested for contaminants before application, and cleaned as necessary.	As described in Chapter 3 of the EIR/EIS, the reintroduced sediments would need to be tested and approved for reintroduction, consistent with a permit from the RWQCB.
2579	72	Page 4.3.7-31, line 1 Delta smelt are able to bioaccumulate contaminants. The majority of Delta smelt only live for 1 year, and therefore the total amount of contaminants they bioaccumulate is likely to be lower than the amount found in fishes that have lived for greater than one year.	As the commenter notes, delta smelt would be expected to bioaccumulate some contaminants, but the sort life span would be expected to limit this bioaccumulation, so that the conclusion of the RDEIR/SEIS remains the same, particularly given the small extent of restoration proposed under Alternative 4A.
2579	73	Page 4.3.7-31, line 18 Tidal habitat restoration could have negative impacts on delta smelt if they are colonized by the wrong organisms, therefore it is important to adaptively manage these habitats to go beyond intending to provide benefits and actually do provide recognizable benefits for Delta smelt.	The Adaptive Management Program that will govern CWF includes adaptive management of habitat restoration required under the current BiOps as well as CWF. For more information regarding the collaborative science and adaptive management program please see Chapter 3 of the Final EIR/EIS and Master Response 33 Adaptive Management and Monitoring.
2579	74	Page 4.3.7-41, line 3 Fish abundances and entrainment losses should not be averaged across water year types in	Although reference is made to analyses across all water years, the results are also presented by water year, with the range of results discussed. Therefore, those data have been incorporated into the EIS/R in Chapter

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		the analysis. Greater amounts of water will be removed from the Delta during critically dry years compared to current operations. During these years, water would also continue to be extracted from the southern pumps. Planned operations should be careful to consider fish entrainment during critically dry years when population abundances are reduced. A large reduction in entrainment during wet years does not reduce the critical risk that increased entrainment during dry years would pose to protected fishes, when these fish are also most impacted by other stressors. Most Delta smelt live for a single year, therefore requiring the greatest protection during the most stressful environmental conditions, or the species may not persist to benefit from improved conditions in wetter years.	11 Fish and Aquatic in the DEIR/S and Section 4 New Alternatives: 4A, 2D and 5A of the RDEIR/SEIS.
2579	75	Page 4.3.7-41, line 41 How will the amount of outflow required to prevent a reduction in longfin smelt abundance be determined for Mitigation Measure AQUA-22d?	As described in Chapter 11 of the EIR/EIS, requirements of the CDFW incidental take statement and science developed through the Adaptive Management Program will be used to make appropriate adjustments to operations, including outflow, to minimize effects on Longfin Smelt. Characteristics of necessary outflow (e.g., timing and magnitude) will be developed through a research program to be undertaken as part of the CDFW incidental take permit for the preferred alternative, Alternative 4A (California WaterFix).
2579	76	Page 4.3.7-47, line 31 To understand the current effects of entrainment, the proportion of juvenile winter-run Chinook Salmon entering the Delta should be compared to the number of juvenile winter-run Chinook Salmon entrained, because entrainment into the pumps can only affect those fish that have made it to the Delta.	Due to a number of factors, it was determined that this analysis would not be conducted. As noted in the text: “...although the salvage-density method gives estimates of entrainment loss or salvage in numbers of fish and there are a number of factors included in the calculations such as multipliers applied for prescreen loss and normalization to population size, it is most appropriate to view the results comparatively, i.e., to compare relative differences between scenarios as opposed to examining the estimates of total number of fish lost to entrainment or salvaged. In essence, the salvage-density method provides an entrainment index that reflects export pumping weighted by each covered species’ seasonal pattern of abundance in the Plan Area, as reflected by historical salvage data. This same caveat applies to the other salmonids, the sturgeons, and the lampreys, which all use the salvage-density method.”
2579	77	Page 4.3.7-49, line 9 Why does the bioenergetics model expect that each striped bass would only eat 7.3 juvenile winter-run Chinook salmon per year? Striped bass could easily eat many more salmon. It is more likely that the predator-prey encounter rates will control bass predation rates. Reducing the number of striped bass near the diversions could reduce the encounter rates in the project area, but new predators will quickly enter the area if it is a favorable feeding location. It might be more effective to research methods that would deter predatory fish from occupying the project area than continuously removing them.	The estimates of consumption by striped bass reflect a number of assumptions, including the density of prey; with relatively low prey density, selection of the prey may also be relatively low (see public draft BDCP EIR/EIS Effects Analysis, Appendix 5F Biological Stressors, Section 5.F.3.2.1). Removal of fish is only one aspect of Environmental Commitment 15; as described in Chapter 4.1.2.3 of Chapter 4 of the RDEIR/SEIS, removal of refuge habitat could also occur, which would deter occupation of certain areas, similar to the commenter’s suggestion.
2579	78	Page 4.3.7-65, line 42 If a 5% predation loss occurs at each intake, 5% of the original population would be lost in the first intake, 4.8% would be lost at the second (due to the reduced number of fish passing the diversion) and 4.5% would be lost at the 3rd. Therefore the cumulative estimated predation loss for juvenile salmonids reaching the north Delta would be 14.3%, and should not be reported as 12%.	The estimate of 12% accounts for fish entering the Yolo Bypass and mortality between the Fremont Weir and the north Delta intakes (see Section 5.F.5.3.1.1 CM1 Water Facilities and Operation in Appendix 5.F of the public draft BDCP).
2579	79	Page 4.3.7-65, line 34 There should be a greater discussion of how bypass flows will be managed to protect juvenile salmonids. Management providing adequate fish protection may limit the amount of water available for export under some low-flow conditions and should be further	The assumptions related to management of bypass flows are described in Appendix 5A Section B of the EIR/S. Limitation of water for export is accounted for in the modeling, which reduces allowable north Delta exports at times when migrating juvenile salmonids would be anticipated to enter the Delta. Implementation would involve real-time monitoring of fish presence in order to minimize the potential for

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		investigated.	impacts. Therefore, the effects to salmonids have been addressed.
2579	80	<p>Page 4.3.21-10, lines 3-12</p> <p>The use of qualitative estimates of the change in Delta water residence time under Alternative 4A is inadequate (in any case, there should be a reference to the source of the qualitative estimation). While there may be uncertainty regarding the hydrodynamic impacts of the environmental commitments on long-term average residence times in the Delta for Alternative 4A, there should be much less uncertainty regarding the effects of operation of the water conveyance facilities and these effects should have been modeled quantitatively. In addition, the use of a long-term average residence time is inadequate, given the very high variability of flows under California hydrological conditions, within a given year (winter storms, spring freshet, low summer baseline), and across the range of wet to critically dry years. Knowing the impact of the operation of the conveyance structures on Delta water flows and hydraulic residence time on shorter time scales is critical, particularly for diversions during low-flow summer periods when water temperatures are likely to be high, increasing the probability of Microcystis blooms, and the probability of stressful high water temperatures for temperature-sensitive fish species.</p>	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in addition to the model results previously provided in the Draft EIR/EIS. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS. The DSM2 model results (which were used in the analysis of residence times) represent 15-minute intervals.</p> <p>Because the Alternatives 2D, 4A, and 5A contain a lower acreage of tidal restoration, relative to Alternatives 2, 4, and 5, which have modeled residence times, residence times under these alternatives are not expected to increase as substantially as under the other alternatives, and thus significant impacts with regard to Microcystis are not expected under these alternatives, relative to the No Action Alternative. Please refer to Master Response 30 (Modeling assumptions) and Master Response 14 (Water Quality) for address of residence time considerations and approach for the impact assessment of Alternative 4A (and 2D and 5A).</p>
2579	81	<p>Page 4.3.25-9, lines 14-35</p> <p>Conveyance structures are described as methods to increase adaptability of water management downstream of conveyance, in response to climate change. The text needs to be expanded to discuss the potential negative impacts of having substantially less flow downstream of conveyance, and also the potential negative effect on freshwater and brackish zooplankton and fish species regarding potential changes in the X2 location, due to diversions occurring at the conveyance.</p>	Section 4.3 25 is the discussion related to climate change and resiliency. These types of effects referenced in the comment were discussed in Chapter 11, Fish and Aquatic Resources of the DEIR/S.
2579	82	<p>Page 4.4.4-57, line 1 through 4.4.4-62, line 33</p> <p>The revised BDCP document would have been much more informative if it had provided side-by-side comparisons of Alt. 4A vs. Alt. 4, NAA, 2D, and 5A. For example, the likely effects of alternative 2D are difficult to assess because, for several potential impacts, comparisons are made to Existing Conditions, Alt.4, and Alt. NAA, but not to the preferred Alt. 4A. Furthermore, the water modeling was only done qualitatively (in contrast to Alternative 4).</p>	The pages cited by this comment are the water quality assessments for Microcystis (Impacts WQ-32 and WQ-33) and San Francisco Bay (Impact WQ-34) for Alternative 2D. Please see Master Responses 14 (Water Quality) and 30 (Modeling) regarding the assessment of Microcystis in the RDEIR/SDEIS and revisions made for the Final EIR/S. Regarding the San Francisco Bay assessment, this assessment utilized quantitative changes in Delta outflow with known Delta water quality conditions to make qualitative determinations regarding changes in San Francisco Bay. Quantitative modeling results for water quality were not available for San Francisco Bay, necessitating the qualitative approach.
2579	83	<p>Page 4.4.21-10, line 10 to 4.4.21-12, line 4</p> <p>The use of qualitative estimates of the change in Delta water residence time under Alternative 2D is inadequate, as was noted in more detail in comments on the Public Health section for Alternative 4A.</p>	<p>Please note that the preferred alternative is now Alternative 4A and no longer includes an HCP or Conservation Measures. Alternative 4A has been developed in response to public and agency input.</p> <p>This comment is a general opinion about the adequacy of the analysis of Alternative 2D. No specific details are given. The assessment under Chapter 8, Water Quality, of the EIR/EIS in Impact WQ-34 considered the change in Delta outflow and resulting change in Delta water quality due to each alternative. Please refer to Master Response 14 for addition information regarding how residence time and temperature were considered in the upstream of Delta region and within the Delta relative to the effects of the alternatives versus the effects of climate change, and associated Microcystis. The text in the RDEIR/SEIS indicated that there is no model available to analyze the residence time; therefore, the effects had to be analyzed qualitatively.</p>
2579	84	Page 4.5.3-56, line 33 through 4.5.3-62, line 19	Please see Letter 2579-84.

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		The use of qualitative estimates of the change in Delta water residence time under Alternative 5A is inadequate, as was noted in more detail in comments on the Public Health section for Alternative 4A.	
2579	85	Page 4.5.21-10, line 3 through 4.5.21-11, line 42 The use of qualitative estimates of the change in Delta water residence time under Alternative 5A is inadequate, as was noted in more detail in comments on the Public Health section for Alternative 4A.	Please see Letter 2579-84.
2579	86	Page 3-30, line 3 More research studies are needed to optimize the planned fish refugia within the North Delta Diversion structures, so that they will provide the theorized benefits. Additional research is needed to understand the appropriate light levels and interior flow (approach) velocities that will behaviorally direct fish into entering refugia. In general, juvenile salmon are more likely to enter a structure when there is a low-inflow velocity and there is moderate light levels. Juvenile salmonids will also tend to avoid entering darkened structures. Therefore additional lighting and a slow approach velocities may need to be added within the refugia to encourage small fish to use them. If the predator restriction bars at the refugia's inlet are too deep and prevent fish from observing the refugia's interior, then bars may also deter fish from using the refugia. Fish refugia will need to be monitored and flushed occasionally, because small predatory fish are likely to enter refugia, grow larger, and consume small fish as they enter the refugia (including the species that the refugia were installed to protect).	As stated in the section referenced by the commenter, the design concepts for fish refugia are in their infancy. The lead agencies will use the best available science to develop final designs that will provide fish resting areas and protection from predators. The comment does not address any environmental issues addressed in the environmental documents.
2579	87	Page 3-92, line 8 It would be more appropriate to rescue and salvage all of the capturable fish that become stranded during the construction activities, rather than to salvage only the covered fish species.	The section cited by the commenter makes no specific reference to only covered fish species being salvaged and rescued; all stranded fishes would be subject to the salvage and rescue plan. The comment does not address any environmental issues addressed in the environmental documents.
2579	88	Page 3-92, line 11 The floating fish guidance structure is an idea worth testing to a further extent, but it needs one major revision in design. The panels should reach the bottom of the riverbed to effectively guide fish, or many fish will simply swim beneath it. This could be done by having a screen that sits on the river bottom and comes 2/3 of the way to the surface connected to a sliding screen that floats at the surface and projects 2/3 of the way to the bottom of the river. The screens would then overlap and provide a single barrier at all water column depths, which should help increase the number of juvenile salmon into entering into preferred channels at river junctions (and could potentially be more effective than the Bio Acoustic Fish Fence).	Refinement of nonphysical barrier type and design would occur during implementation of the proposed action. The comment does not address any environmental issues addressed in the environmental documents.
2579	89	Page 8-83, Table 8-60a As shown in the table, residence times during the summer and fall will be significantly increased at numerous locations in the Delta under Alternative 4 H3 in comparison to Existing Conditions and also the No Action Alternative. Significant increases in average residence time are predicted to occur in Cache Slough, East Delta and South Delta. It is well	The impact assessment considers change in residence time, relative to the No Action Alternative, shown in Table 8-60a as one factor in determining whether the action alternative would have an adverse effect on Microcystis, as further discussed in Microcystis within Section 8.3.1.1, Constituent-Specific Considerations Used in the Assessment, and within each individual impact assessment in Impact WQ-32. See Master Response 14 that provides more details regarding water quality.

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		established that temperature and residence time are prime factors driving Microcystis blooms in the Delta. Given the predicted increases in Delta water temperatures which are predicted through climate change modeling, the increased residence times associated with the proposed alternative will lead to increased occurrence, spatial distribution and magnitude of Microcystis blooms in the Delta. (See pages 8-82, 8-103 and also the Cyanobacteria white paper prepared for Central Valley Regional Water Board-led science effort on Delta water quality problems).	
2579	90	Page 11-112, lines 6-8 Juvenile covered fish species and juvenile striped bass may benefit from the Fall X2 action, and the greater abundance of adult striped bass may increase predation on juveniles of covered species and negate the benefits from increased habitat, therefore the overall effect is uncertain without additional studies.	As discussed for Impact AQUA-201 in Chapter 11, Section 11.3.5, in Appendix A of the RDEIR/SDEIS, the density-dependent relationship between early life stages and subsequent life stages of striped bass, particularly adults, means that changes in juvenile abundance may not be reflected in adult abundance. In addition, the inclusion of the fall X2 action in the NAA and various Alternatives, including the preferred Alternative 4A, would be expected to result in little difference in juvenile striped bass abundance.
2579	91	Page 11-106, lines 37-44 Impact AQUA-NAA4 (spawning and egg incubation habitat for covered fish species): NAA will result in changes to flows that will have significant effects on green and white sturgeon spawning in the Feather River, and significant effects on fall-run Chinook salmon and steelhead spawning in the American River. These effects should be further evaluated, and fully mitigated.	The level of analysis is sufficient to provide an appropriate comparison between the action alternative and the NAA and doing the deeper level of analysis would not help elucidate the impacts of the preferred alternative. Also, there is no action being undertaken by the project proponents in the NAA. Therefore, there is no requirement to mitigate for any effects.
2579	92	Page 11-107, lines 37-39 Impact AQUA-NAA5 (rearing habitat for covered fish species): NAA will result in changes in flows that are expected to affect rearing conditions for all salmonids and sturgeon somewhere in the system. These effects should be further evaluated, and fully mitigated.	The level of analysis is sufficient to provide an appropriate comparison between the action alternative and the NAA and doing the deeper level of analysis would not help elucidate the impacts of the preferred alternative. Also, there is no action being undertaken by the project proponents in the NAA. Therefore, there is no requirement to mitigate for any effects.
2579	93	Page 11-109, lines 1-3 Impact AQUA-NAA6 (migration habitat for covered fish species): NAA in drier water year types, will result in mean monthly flows at Rio Vista up to 28% lower than under Existing Conditions. These effects should be further evaluated, and fully mitigated.	As described earlier in the section, the biological effect of flow changes was estimated to be relatively small in the Delta (e.g. with reference to results from the Delta Passage Model). Upstream effects were concluded to be significant.
2579	94	Page 11-109, lines 13-15 Impact AQUA-NAA6: NAA could have a significant effect on salmonids and sturgeon through degradation of upstream conditions due to reduced flows and increased temperatures that may affect migration. These effects should be further evaluated, and fully mitigated.	The level of analysis is sufficient to provide an appropriate comparison between the action alternative and the NAA and doing the deeper level of analysis would not help elucidate the impacts of the preferred alternative. Also, there is no action being undertaken by the project proponents in the NAA. Therefore, there is no requirement to mitigate for any effects.
2579	95	Page 11-111, lines 30-33 Impact AQUA-NAA12 (spawning and egg incubation habitat for non-covered species): NAA may affect downstream spawning conditions for some non-covered fish species, when climate change effects are accounted for (due to changes in water storage volumes upstream of the Delta to meet Fall X2 targets. These effects should be further evaluated, and fully mitigated.	The level of analysis is sufficient to provide an appropriate comparison between the action alternative and the NAA and doing the deeper level of analysis would not help elucidate the impacts of the preferred alternative. Also, there is no action being undertaken by the project proponents in the NAA. Therefore, there is no requirement to mitigate for any effects.
2579	96	Page 8H-6, Table EC-4 Compared to existing conditions, which are the basis for current 303(d) listings for EC in the	The modeling results presented in Table EC-4 of ix B of the RDEIR/SDEIS are only one consideration in the determination of impacts to EC due to the Alternative 4. See discussion in Impact WQ-11 for Alternative 4 for the final determination of which locations would have significant/adverse impacts to EC due to the

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		Delta, the proposed Alternative will significantly increase violations of water quality objectives for electrical conductivity at (1) Sacramento River at Emmaton, (b) San Joaquin River at San Andreas, (3) Old River at Tracy Bridge, and (4) San Joaquin River at Prisoners Point. This proposed degradation of EC conditions in impaired waters is not allowed under the federal antidegradation provisions of the Clean Water Act.	alternative. Mitigation measure WQ-11 is provided to lessen these effects. Also, please refer to Master Response 14, pages 16-17 (Water Quality) regarding assessment of water quality degradation and antidegradation policy considerations in the EIR/S.
2579	97	<p>Page B-357, Table B.7-28-Differences (Percent Differences) between Pairs of Model Scenarios for the Sacramento River Downstream of the North Delta Diversion Facility, Year-Round</p> <p>Table B.7-28 is the only table that gives some clue about the flow at different times of the year and different water year type; this table is not mentioned in the Executive Summary and Alternative Descriptions. This table shows Sacramento River flows downstream of the proposed intake will be substantially reduced because of the Project diversions. This reduction of flow compared to the existing condition should be clearly shown for all 12 months of the year and for every year type in graphs and other tables. The other limited amount of tabulated flow information provided in the document show peak seasonal flow and wet years, which is not a clear representation of the project. This information should be plainly stated and shown in the documents, not just buried in Appendix B.</p>	<p>The Final EIR/EIS includes CALSIM II and DSM2 model results for Alternative 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS.</p> <p>For more information regarding modeling please see Master Response 30</p>
2579	98	<p>Page D.3-11, line 32</p> <p>Reverse flow occurrence is likely to increase in the Sacramento River downstream of the North Delta Diversion including in the river reaches near Georgiana Slough and the Delta Cross Channel, due to the reduction of tidal wetland restoration in the revised plan. It is unlikely that water operations will be able to prevent increased reverse flows at these junctions without limiting NDD to high outflow conditions. Therefore water diversion at the NDD intakes may pose an increased risk to juvenile salmon. The simplest method to avoid increasing reverse flows south of the NDD is to cease NDD water export when Sacramento River flows are low.</p>	Water diversions do not occur at the north Delta intakes when flows in the Sacramento River at Freeport are less than 5,000 cfs, and only minimal diversions to maintain the pumps occur when flows are generally less than 9,000 to 15,000 cfs depending upon the month and other conditions (see Chapter 3, Description of Alternatives, in the EIR/EIS). Also, water diversions at the north Delta intakes only occur in the model when there is a positive downstream sweeping velocity. See response to comment Letter 2579-17 and 18.
2579	99	<p>Page D.3-64, line 3</p> <p>Predator removal programs need to be careful not to only target large-sized predatory fishes. Reductions of larger-sized predatory fish can allow for a greater density of smaller-sized predatory fish to inhabit an area, which are still of sufficient size to consume juvenile covered fish species. Increased numbers of smaller-sized predatory fish are likely to increase the predator encounter rates for juvenile covered fish species, potentially resulting in greater total numbers of fish consumed. Therefore if predatory fish are going to be removed during the feasibility assessment study or fishing tournaments, it is important to remove all predatory fish of sufficient size to consume juvenile fish (not just the largest individuals captured). This would help to control one of the potential unexpected foodweb responses due to predatory fish removal.</p>	CM15 Localized Reduction of Predatory Fishes would focus on predatory fishes of a variety of sizes that are potentially could consume juvenile salmonids. Comment does not address any other environmental issues.
2579	100	<p>Page D.3-86, line 3</p> <p>The funding to implement adaptive management changes should not need to compete with funding to support the Environmental Flow Program. These activities support separate needs, and need to be funded separately. Implementation of necessary adaptive management projects should not limit Environmental Flow Program funding and vice-versa.</p>	Funding is discussed in Master Response 5. Comment does not address any other environmental issues.

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2579	101	In response to public comments on the Draft EIR/EIS, the recent RDEIR/SDEIS put forth a different preferred alternative called "Alternative 4A," or the "California Water Fix." One major difference between Alternative 4 and Alternative 4A is that the latter includes significantly less habitat restoration than the former. (The majority of habitat restoration activities have been separated into a different program called "California EcoRestore," which will undergo separate environmental review.) As for the modeling of Alternative 4, modeling of Alternative 4A included comparable sub-alternatives H3 and H4. The actual operational conditions of the new Alternative 4A are proposed to be between the conditions of H3 and H4. The RDEIR/SDEIS provided limited monthly modeling results for Alternative 4A under H3 and H4 conditions to serve as "bookends" on the Alternative 4A operational conditions. (footnote 2: It is important to note that the RDEIR/SDEIS is quite non-committal regarding the proposed operating conditions of Alternative 4A. Although the RDEIR/SDEIS states that operations will be somewhere between H3 and H4 (Appendix B, pp. B-1, B-2), it also states that operations will be adaptive based on the results of ongoing scientific review of operations (p. 4.1-5, 4.1-18). Thus, the RDEIR/SDEIS seems to leave the door open to Alternative 4A operating conditions that fall outside the "bookends" of H3 and H4.)	Considerable scientific uncertainty exists regarding the Delta ecosystem, including the effects of CVP and SWP operations and the related operational criteria. To address this uncertainty, DWR, Reclamation, DFW, USFWS, NMFS, and the public water agencies will establish a robust program of collaborative science, monitoring, and adaptive management. For more information regarding adaptive management please see Master Response 33. Operation of the new north Delta facilities would be guided by strict regulations that are set by the SWRCB. The Proposed Project would be permitted to operate with regulatory protections, including river water levels and flow, which would be determined based upon how much water is actually available in the system, the presence of threatened fish species, and water quality standards.
2579	102	At Sacramento Regional County Sanitation District's direction, Flow Science undertook to evaluate the potential impact of Alternative 4A on Regional San operations. Flow Science's methodology in this evaluation was severely limited compared to past efforts due to a dearth of modeling data available from DWR. In the past, Flow Science was able to obtain output data from DSM2 Delta modeling simulations of the proposed BDCP scenarios (Flow Science, 2014). These output data included records of projected hourly flow rates for the Sacramento River at Freeport. Flow Science used these DSM2 output data as input to a specialized code that evaluates the effect of relevant BDCP alternatives on the required frequency, duration, and volume of diversions to the Regional San ESBs. However, in the latest round of BDCP modeling associated with the RDEIR/SDEIS, no DSM2 modeling data were available since Alternative 4A was not modeled using DSM2. DWR confirmed this fact when contacted by Regional San. Thus, instead, Flow Science used CALSIM II output data, which were available for Alternative 4A. CALSIM II is a model used by DWR and the U.S. Bureau of Reclamation (USBR) to simulate the operations of the system of reservoirs and rivers that feed into the Sacramento-San Joaquin River Delta. CALSIM II is typically used to generate the boundary conditions for DSM2, which simulates flow and transport in the Delta itself. Unlike DSM2, CALSIM II operates on a monthly timestep. Thus, although CALSIM II generates flow rate data for the Sacramento River at Freeport, it does so only on a monthly basis. Since Regional San diversions to ESBs are sensitive to flow rate changes in the Sacramento River on an hourly and sub-hourly basis, monthly CALSIM II output data were inadequate for a detailed modeling evaluation of Regional San operations. Therefore, Flow Science employed simple statistical methods to the CALSIM II data in order to evaluate Alternative 4A.	<p>Specific CALSIM II model runs were not conducted for the analyses presented in the RDEIR/SDEIS. The Final EIR/EIS includes CALSIM II and DSM2 model results for Alternative 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS.</p> <p>DSM2 data covering water years 1922-2003 for Alternative 4A (California WaterFix) were made available on February 3, 2016, following development for the working draft Biological Assessment. See: http://cms.capitoltechsolutions.com/ClientData/CaliforniaWaterFix/uploads/lveo5_BA_ModelingData.pdf</p> <p>The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS.</p>
2579	103	Flow Science conducted a statistical analysis of monthly CALSIM II data for Alternative 4A, Sub-alternative H3 (Alt4AH3) relative to the corresponding data for Alt4H3. Flow Science used a Student's t-test to determine whether the calculated mean monthly flow rates at Freeport for Alt4H3 were statistically different from the calculated mean monthly flow rates for the corresponding proposed "California Water Fix" alternative, Alt4AH3. A Student's t-test is a statistical analysis that can be used to determine whether two datasets satisfy the "null hypothesis", i.e., to test whether the two datasets have mean	<p>This comment describes the Student's t-test statistical analysis performed by the commenter on the DEIRS Alternative 4H3 and RDEIR Alternative 4AH3 CALSIM II results.</p> <p>Master Response 30 provides extensive details regarding the model methodology.</p>

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		<p>values that are statistically identical or not. To run the test, a t-distribution value is calculated from the expected values of the two datasets, the number of samples in each dataset, and the calculated standard deviation of the two datasets combined. This t-distribution value is then compared to a 95%-confidence critical value that depends on the number of data in the dataset. If the t-value is lower than the critical value, then the null hypothesis is satisfied, i.e., the two datasets likely do not have statistically different mean values. If the t-value is higher than the critical value, then the null hypothesis is not satisfied, i.e., the two datasets likely have statistically distinct mean values.</p> <p>A similar analysis was made for Alternative 4A, Sub-alternative H4 (Alt4AH4): a Student's t-test was used to determine whether the calculated mean monthly flow rates at Freeport for Alt4H4 were statistically different from the calculated mean monthly flow rates for Alt4AH4. Note that Alternative 4 in the recent RDEIR/SDEIS is different from the original Alternative 4 presented in the Draft EIR/EIS. Since only early long-term (ELT) scenarios were modeled for Alternative 4A, ELT results for Alternative 4 were used.</p> <p>Flow Science also used the Student's t-test method to compare low-flow sub-sets of the CALSIM II output for Alternative 4A and Alternative 4. Impacts on River flow rates during low flow periods are most important to Regional San operations since it is during such periods that a reduction in River flow could force increased diversions to ESBs. Flow Science used a threshold of 9,000 cubic feet per second to distinguish low flow periods from regular and high flow periods. This threshold value was chosen since it is roughly equivalent to 14 times the maximum discharge capacity of the Regional San diffuser (410 MGD, or 634 cubic feet per second). Below this threshold it becomes increasingly likely that Regional San effluent discharge must be restricted (and emergency storage basins diversions initiated) in order to comply with the 14:1 discharge requirement.</p>	
2579	104	Attachments 1 and 2 show the results of Flow Science's statistical analysis of Alt4AH3 and Alt4AH4, for the entire 82-year CALSIM II modeling period (October 1921 through September 2003). Results suggest that the modeled mean monthly flow rate in the Sacramento River at Freeport for Alt4AH3 is statistically indistinguishable from that for Alt4H3. Similarly, results suggest that the modeled mean monthly flow rate for Alt4AH4 is statistically indistinguishable from that for Alt4H4.	The results presented in this comment are consistent with the definition of Alternative 4A and information presented in the Final EIR/EIS. Comment does not address environmental issues.
2579	105	ATT 1: Table 1 - Results of statistical analysis of Alt4AH3 for complete 82-year CALSIM II output data record (October 1921 through September 2003).	This comment describes an attachment to the comment letter and is responded to related to text connected to the attachment.
2579	106	ATT 2: Table 2 - Results of statistical analysis of Alt4AH4 for complete 82-year CALSIM II output data record (October 1921 through September 2003).	The response is the same as 105 above.
2579	107	Attachments 3 and 4 show the results of Flow Science's statistical analysis of CALSIM II monthly flow rate output data for Alt4AH3 and Alt4AH4 under low-flow conditions only (i.e., Sacramento River flow at Freeport < 9,000 cfs). Results suggest that the mean monthly low-flow rate in the Sacramento River at Freeport for Alt4AH3 is statistically indistinguishable from the mean monthly low-flow rate for Alt4H3. Results in Attachment 4 are similar for Alt4AH4.	The results presented in this comment are consistent with the definition of Alternative 4A and information presented in the Final EIR/EIS.
2579	108	ATT 3: Table 3 - Results of statistical analysis of Alt4AH3 for low-flows only (i.e., CALSIM II	This comment describes an attachment to the comment letter and a response to text in the letter related to

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		output flow rate at Freeport < 9,000 cubic feet per second).	this material is provided above.
2579	109	ATT 4: Table 4 - Results of statistical analysis of Alt4AH4 for low-flows only (i.e., CALSIM II output flow rate at Freeport < 9,000 cubic feet per second).	Please see responses above, specifically 108.
2580	1	Given the volume of material to review and resource limits during the available timeframe, we (U.S. Fish and Wildlife Service) were not able to provide a thorough review of the complete document.	For more information regarding the document's length and complexity please see Master Response 38. Please see Master Response 39 for more information about the public review period. For information on public outreach please see Master Response 40.
2580	2	Reclamation should ensure that the SDEIS, in its final form, will accurately represent the project description and analyses in the biological assessment (BA) for the California Water Fix Section 7 consultation for which the U.S. Fish and Wildlife Service is currently providing technical assistance. Examples include: a. The October 1, 2015 draft California Water Fix BA project description includes modified mitigation/compensation measures that, if included at the time of formal consultation, should also be included in the final EIS/EIR. b. The final EIS/EIR project footprint descriptions should be consistent with language in the final California Water Fix BA. c. We suggest that the final EIS/EIR use the California Water Fix BA Section 7 Proposed Action simulation to represent Alternative 4A's operations and to evaluate their effects.	A biological opinion is not required prior to the release of the Draft BDCP/California WaterFix EIR/EIS. For the Proposed Action, the USFWS and NMFS will conduct an internal ESA section 7 consultation prior to issuance of a Section 10(a)(1)(B) permit. These federal agencies will coordinate the ESA consultation process and other environmental review processes, such as the National Environmental Policy Act (NEPA), consistent with federal regulations. In addition, the USFWS and NMFS will consult with the United States Bureau of Reclamation (Reclamation) to complete biological opinions or a joint biological opinion prior to federal action to carry out the proposed action. For more information please see 1.1.5.2 of Section 1 Introduction of the RDEIR/SDEIS.
2580	3	The final EIS/EIR should include a full disclosure of the impacts of truck traffic on the Stone Lakes National Wildlife Refuge (SLNWR) including wildlife, visitor experience (aesthetics) and safety (accident analysis) as well as those measures to be adopted and implemented to mitigate those environmental impacts. We recommend that the Record of Decision identify mitigation measures we have proposed as being incorporated into Reclamation's proposed action.	For a discussion on mitigation please see Master Response 22. Environmental Commitments are discussed in Appendix 3B of the Final EIR/EIS. Please also see Chapter 19, Transportation, of the Final EIR/EIS. Please also see response to comment 2580-17.
2580	4	For the purposes of NEPA we (U.S. Fish and Wildlife Service) suggest that the terminology environmental commitments be changed to mitigation.	Environmental Commitments, AMMs, and CMs, are addressed in Appendix 3B, of the Final EIR/EIS. For more information on mitigation please see Master Response 22.
2580	5	ES.2.3 p.ES-19 line 12- Is "50" supposed to be "SA"? ES.2.3 p.ES-20 line 12 -Is "replace" supposed to be "supplement"? ES.2.3 p.ES-20 line 38- Please replace "E:I ratio" with San Joaquin River Inflow-to-Exports ratio" to be clear.	The reference to Alternative 5D (not 50) has been corrected to Alternative 5A. Supplement is correct. Correction made. E:I ratio has been corrected to Delta export: import ratio.
2580	6	ES.3.1.1.2 p.ES-22 line 14-This text, "Updated reservoir carryover storage for the Existing Conditions baseline." appears to refer to changes made for Sec7 modeling (which didn't even resimulate Existing Conditions) - which is not discussed anywhere else in this document. Please clarify with elaboration or delete.	The text referred to in this comment has been removed in the Final EIR/EIS.
2580	7	ES.1.4.2 pES-12 lines 15-22- Are the analyses discussed here based on the reasonably applicable modified H3 and H4 simulations (reruns without 25,000 acres of restoration, with the EMM standard returned to Emmatton and no Fremont Weir described in Appendix Bas	The text referred to in this comment has been revised in the Final EIR/EIS using model run results for Alternative 4A instead of extrapolation of model results for Alternatives 4H3 and 4H4. For more information

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		sensitivity runs)? The modified simulations' results would seem to form a much more reasonable basis for comparisons than the original H3 and H4 results. The impact analyses alluded to here should use the more representative modified H3 and H4 simulation results, not the less representative original H3 and H4 simulation results. Alternatively, this section of the Executive Summary would be a perfect spot to provide the rational for using the old modeling in the impact analyses, if that is what was done.	on modeling and the proposed project please see Master Response 30.
2580	8	Table 4.1-2 Marked improvement in clarity. Table 4.1-2, p.4.1-7 North Delta operations - Third Column: The author should disclose that the modeling did not include the May-protection proviso for pre-Dec 1st pulses. CMI criteria as proposed in the Draft BDCP has the same disconnect.	The text referred to in this comment has been modified in the Final EIR/EIS.
2580	9	Table 4.1-2, p.4.1-8 South Delta operations: The author should explicitly indicate what "average" means. The intent is to use the same definitions used in current implementation of the existing Biological Opinions' Reasonable and Prudent Alternative actions, even though the modeling generally uses monthly values. Table 4.1-2, p.4.1-8 South Delta operations- Third Column: The author could add "To compute a Dec monthly allowable Old Middle River requirement, the balance of days were assumed to have an OMR flow as low as -8000 cubic feet per second." Table 4.1-2, p.4.1-8 South Delta operations: Feb & Mar using forecast frequency consistent with current practices most likely means 90% exceedance which would be expected to low ball protections compared to modeling. Table 4.1-2, p.4.1-8 South Delta operations: March text needs an "s" on "dry year"	The text referred to in this comment has been modified in the Final EIR/EIS.
2580	10	Table 4.1-2, p.4.1-9 Spring outflow: Please indicate the Alternative's nature, i.e., to have the Mar-May average Delta outflow closely approximate the NAA's to prevent the Alternative from degrading longfin smelt abundance relative to the NAA condition at Early Long Term. Table 4.1-2, p.4.1-9 Spring outflow- Third Column: The Oroville component is no longer envisioned as necessary. The author should clarify that the text here only applies to the old modeling used for the range-of effects analysis of Alt 4A.	The text referred to in this comment has been modified in the Final EIR/EIS.
2580	11	Table 4.1-2, p.4.1-10 Export to inflow ratio- Second Column, First Bullet: The author should replace "Operation criteria" with "Monthly ratios" to more precisely indicate what of D-1641 is being retained. Table 4.1-2, p.4.1-10 Export to inflow ratio- Second Column, Second Bullet: A full reading of the foundational material for the genesis of the E/1 standard indicates south Delta entrainment was a primary purpose, but not the only purpose of E/1. The text should be softened to reflect that.	The text referred to in this comment has been modified in the Final EIR/EIS.
2580	12	Top section - Application of Flow Criteria, p.4.1-11: The water-year type based criteria in Table 4.1-2 are constrained using the frequency of year types projected to exist at the Early Long Term, not observed hydrologic conditions. A discussion of the difference ought to be included here.	The text referred to in this comment has been modified in the Final EIR/EIS.
2580	13	Section 4.2.4, p.4.2-3, first bullet and Section 4.2.5, p.4.2-12, first bullet-The author may	The discussion of the text referred to in this comment has been modified in the Final EIR/EIS.

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		want to start the sentence with "General effects" since the referenced DEIR/EIS sections contains generalities and then specifics for only the Late Long Term condition.	
2580	14	Section 4.3 p.4.3.1-1- p.4.3.26-7 and Section 4.3.4 p.4.3.4-1, lines 24-25-. In the final EIS/EIR, the past modeling results and impact analyses based on Alternative 4 H3 and H4 referenced in these sections (and anywhere else Alternative 4A is being discussed) should be replaced with modeling results and impact analyses done for/based on the Section 7 BA project description.	The Final EIR/EIS includes model run results for Alternative 4A instead of extrapolation of model results for Alternatives 4H3 and 4H4.
2580	15	Section 4.3.4 p.4.3.4-1, lines 18-23- Why isn't the relocation of the EMM water quality standard back from Three Mile Slough to Emmaton not listed here?	The Final EIR/EIS describes the use of water quality standard along the Sacramento River at Emmaton under Alternative 4A.
2580	16	Appendix B Section B.I.4 p.B-3- The list of parameters presented is too short. Results for more Delta parameters, e.g., Emmaton electrical conductivity, residence time, etc. should be included to fully disclose the adequacy of the H3 and H4 simulations to represent Alternative 4A conditions.	The Final EIR/EIS includes a wider range model run results for Alternative 4A instead of extrapolation of model results for Alternatives 4H3 and 4H4.
2580	17	<p>The BDCP proposes to construct two tunnels along the Sacramento River to convey water south. The project is in close proximity to the Stone Lakes National Wildlife Refuge and will be impacted by it in a number of ways. One impact that is of great concern is the increase in traffic on roads that bisect the Refuge. According to the report, traffic will increase 10 fold, with a vehicle passing by the Refuge every 5 seconds from 6 am to 7 pm for the next 7-10 years.</p> <p>This increase in traffic will have negative effects on 1) wildlife populations; 2) visitor experience; and 3) safety of staff, cooperators, and visitors on roads including Hood-Franklin Road, Lambert Road, Twin Cities Road and River Road, impacting the ability of the Refuge to meet the purposes for which it was established (Fish and Wildlife Act of 1956, Refuge System Improvement Act 1997. The issues associated with the increase in traffic are not adequately addressed in the document. Furthermore, the condition of Hood-Franklin Road from Interstate 5 to SR 160 and Lambert Road from Herzog Road to Franklin Blvd are listed as "Deficient". These roads can still be used based on mitigation measures 1b and 1c, yet impacts to the Refuge are not listed nor addressed in any mitigation measures.</p>	<p>The lead agencies acknowledge the importance of these roads for access to the refuge and would like to clarify the traffic data provided in Table 15. The hourly volume range is the net change in traffic volumes. For example, for Hood Franklin Road, the net increase is from (85 to 151) to (160 o 226), or a maximum of 75 vehicles. This equates to one vehicle every 48 seconds. In addition, this would be the maximum number of vehicles and would not occur for every hour between 6 AM and 7 PM. Lastly, based on the location of the Stone Lakes National Wildlife Refuge and nearby construction sites, the length of construction activity is not anticipated to occur over the entire seven (7) year time period.</p> <p>Mitigation Measure TRANS-1b specifies limiting construction activity to hours with more capacity to avoid operational deficiencies on affected roadways. Mitigation Measure TRANS-1c also seeks to work with affected jurisdictions to enhance capacity of congested roadway segments where construction traffic will substantially affect transportation facilities. However, some significant impacts may be unavoidable as discussed on page 19-122 of Draft EIR Chapter 19, Transportation.</p> <p>The lead agencies acknowledge that construction truck traffic may degrade the physical condition of the roadway segments as discussed on the Recirculated EIR/EIS, Chapter 19, page 19-133. The proponents are committed to minimizing and remedying the impacts of construction truck traffic. The lead agencies also acknowledge concerns about transportation impacts on Delta roadways and agree with the need to avoid further deterioration of these roads. Table 19-26 of the Recirculated EIR, Chapter 19, Transportation, identifies roadway segments that are deficient. Mitigation Measures TRANS-2a, b, and c seek to eliminate or minimize traffic on those segments or to improve the condition of those pavement sections if use by construction traffic cannot be avoided. Mitigation Measure TRANS-2c also includes remediation of roads to conditions prior to BDCP construction.</p> <p>Additionally, the Draft EIR, Chapter 19, Transportation, page 19-36 identifies interference with emergency services as an effect. Impact TRANS-3 further discusses this problem and its effects. Mitigation Measure TRANS-1a includes provisions to ensure that construction vehicles allow continual access for emergency vehicles at the time of an emergency. Mitigation Measure TRANS-1c also seeks to work with affected jurisdictions to enhance capacity of congested roadway segments where construction traffic will substantially affect transportation facilities.</p> <p>Please also see Chapter 19, Transportation, of the Final EIR/EIS.</p> <p>As discussed in Impact BIO-184 (see Chapter 12 of the Final EIR/EIS), Effects on Habitat and Populations of</p>

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			<p>Common Wildlife and Plants, effects of construction traffic on wildlife moving in the vicinity of Stone Lakes NWR would be minimized by AMM20 Greater Sandhill Crane, which includes a measure for the installation of a vegetation screen or other noise and visual barrier along Hood Franklin Road for the benefit of cranes, which would be a minimum of 5 feet high (above the adjacent elevated road, if applicable) and which would provide a continuous surface impenetrable by light. This measure would potentially direct wildlife wishing to cross Hood Franklin toward the overcrossing of the canal that links the Stone Lakes properties just east of the town of Hood. The overcrossing includes strips of terrestrial habitat on either side of the canal.</p>
2580	18	<p>Roads and high traffic volumes reduce landscape connectivity which affects wildlife populations in the following ways:</p> <p>a: Roads and traffic limit the regular movement of animals to different habitats (e .g. wetland to grassland) to meet daily, seasonal, and basic biological needs such as reproduction, feeding, and sheltering.</p> <p>b: Roads and traffic affect use of habitats adjacent to roadways with some species having a higher degree of aversion to traffic and associated noise.</p> <p>c: Roads and traffic limit the ability for areas to be recolonized, and ability of young to find and establish new territories.</p> <p>d: Roads and traffic increase wildlife mortality due to collisions, which can affect reproduction success. At sufficiently high rates of mortality, areas become population sinks, which can then affect regional populations.</p> <p>Significant increases in traffic volume that bisect habitat can affect the ability for the Stone Lakes National Wildlife Refuge to meet its federal mandates and purposes for establishment. Impacts to landscape connectivity are evident along the east side of the Refuge which is bordered by Interstate 5. The increase in volume of traffic since its construction in the late 1970's has affected a wide variety of animal species which is evident by the number of carcasses Refuge staff observes on a weekly basis along the roadway. For example, barn owls are regularly found dead from collisions along the roadway. From April to September of 2015, 10 barn owl carcasses were observed along the 3.8 mile stretch of freeway from Laguna Blvd to Hood-Franklin Road. The number of collisions has been increasing over the years, as habitat conditions improve and the birds fly across Interstate 5 to access foraging areas. Additional species killed along Hood-Franklin and Lambert Road include: gopher, garter and king snakes, Western meadowlark, red winged blackbird, western pond turtle, rabbit, opossum, striped skunk, coyote, American coot and unidentified ducks. River otter are another species that have been killed along roadways as individuals follow drainages from lakes to seasonal waterbodies.</p> <p>The harmful effects of an increase in traffic underscore the need to maintain and restore essential movements of wildlife across roads to maintain population movements and genetic interchange. This is particularly important on roads with high traffic volumes that can become complete barriers to movement. Numerous studies show that high-volume and high-speed roads tend to be the greatest barriers and most effective in disrupting animal movements and population interchange, therefore mitigation measures must be put in place to offset the increase in traffic on roads bisecting the Refuge as part of the BDCP.</p>	<p>The commenter expresses concern over the increase in vehicle traffic on road bisecting the Stone Lakes National Wildlife Refuge (Hood-Franklin and Lambert Roads between Franklin Road and Highway 160). To address these concerns the EIR/EIS includes the following measures.</p> <p>AMM20 Greater Sandhill Crane (please see Chapter 12 and Appendix 3B of the Final EIR/EIS), includes the following:</p> <ul style="list-style-type: none"> • Route truck traffic to reduce headlight impacts in roosting habitat. • Install light barriers to block the line-of-sight between the nearest roosting areas and the primary nighttime construction light source areas. • Install a vegetation screen or other noise and visual barrier along the south side of Hood Franklin Road along the length of Stone Lake National Wildlife Refuge's property to reduce disturbance to sandhill cranes. The noise and visual barrier will be a minimum of 5 feet high (above the adjacent elevated road, if applicable) and will provide a continuous surface impenetrable by light. This height may be obtained by installing a temporary structure, such as fencing (e.g., chain link with privacy slats) or a semi permanent structure, such as a concrete barrier (e.g., a roadway median barrier or architectural concrete wall system) retrofitted with an approved visual screen, if necessary, to meet the required height. This barrier will not be installed immediately adjacent to crane foraging habitat, and placement will be coordinated with a qualified crane biologist approved by the wildlife agencies. <p>For more information please see Master Response 17, Biological Resources.</p> <p>The vegetation screen would also serve to route wildlife wishing to cross Hood-Franklin Road toward the overcrossing of the canal that links the Stone Lakes properties. The overcrossing includes strips of terrestrial habitat on either side of the canal.</p> <p>In Chapter 19, Transportation, of the Final EIR/EIS, the following measures in Mitigation Measure TRANS-1a Implement Site-Specific Construction Traffic Management Plan, have been proposed in relation to Stone Lakes Wildlife Refuge:</p> <ul style="list-style-type: none"> • Implement maximum 45 mph speed limit on Hood-Franklin Road west of Interstate 5. Include signage: "Caution: entering sensitive wildlife area." • Further reduce speed limit in both directions to 35 mph from ½ mile west of Interstate 5 to 1 mile west of Interstate 5. Add sign at Visitor Center entrance stating that facilities are for Stone Lakes National Wildlife Refuge visitors only. • Add a right hand turn lane on Hood Franklin Road at the entrance of the Stone Lakes Visitor Center. • Reduce speed limit to 35 mph on Lambert Road from 1 ½ miles west of Interstate 5 to 2 ¼ miles

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			<p>west of Interstate 5. Include signage: "Caution: entering sensitive wildlife area."</p> <ul style="list-style-type: none"> • These measures would reduce, but not eliminate, the potential for vehicle strikes.
2580	19	<p>There are many tools and approaches that can be used to reduce animal-vehicle collisions and provide habitat connectivity for wildlife across highways. These mitigation measures include modifying traffic and/or driver behavior; modifying animal behavior or population size using minimal infrastructure; and physically separating or modifying animal behavior using substantial infrastructure.</p> <p>The optimal Mitigation Measure to offset the truck traffic impacts to the Stone Lakes National Wildlife Refuge would be to: Avoid use of Hood-Franklin and Lambert Roads between Franklin Road and SR160.</p> <p>If the above Mitigation Measure is infeasible the following Mitigation Measures to be implemented include:</p> <p>a: Purchase land or easements in strategic locations adjacent to the Refuge with no barriers to connectivity to offset losses of habitat and connectivity.</p> <p>b: Reduce volume of traffic allowed to utilize Hood-Franklin and Lambert Roads</p> <p>c: Limit travel times to avoid dusk and dawn when some species are most active</p> <p>d: Implement AMM20 3.C.2 .20.1.4 Measures to Avoid and Minimize Potential Effects from Lighting and Visual Disturbance including no traffic on Hood-Franklin Road one hour before sunset to one hour after sunrise to limit disturbance to greater sandhill crane roost site and route truck traffic.</p> <p>e: Implement AMMO 3.C.2.20.1.4 Measures to Avoid and Minimize Potential Effects from Lighting and Visual Disturbance: Route truck traffic to reduce headlight impacts in roosting habitat</p> <p>f: Implement lower speed limit (<45 mph)</p> <p>g: Limit the time of the day of increased traffic volumes which is currently 6am-7pm</p> <p>h: Construct wildlife crossing tunnels and fence barriers</p> <p>i: Signage to inform public and drivers of hazards</p> <p>All but the first mitigation measure address the immediate impact to the Refuge. The general increase in traffic volume on all roads surrounding the Refuge is only addressed by creating and protecting additional habitat at a landscape level in and around the Refuge.</p>	<p>Please see response to comment 2580-18, which addresses concerns over increased construction traffic impacts on wildlife in the vicinity of Stone Lakes National Wildlife Refuge.</p>
2580	20	<p>The Refuge Improvement Act of 1997 defines the priority public uses, "the Big Six" that all refuges should accommodate given adequate funding, personnel and property. The following public uses are provided at the Stone Lakes National Wildlife Refuge: hunting, wildlife observation, wildlife photography, environmental education, and environmental interpretation. Investments for these wildlife dependent activities public uses are estimated at over 10 million. Thus the Refuge not only has federal mandates to provide these uses, but</p>	<p>Please note that the new preferred alternative, 4A, has been designed to reduce impacts, in particular those in Stone Lakes National Wildlife Refuge. Construction traffic is discussed in Impact REC-2 (See Chapter 14, Recreation, of the Final EIR/EIS), and also in Chapter 19, Transportation. Several mitigation measures would be incorporated to reduce impacts as much as possible. Mitigation Measure TRANS-1a would involve preparation of site-specific construction traffic management plans that would address potential public access routes and provide construction information notification to local residents and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes of access to affected</p>

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		<p>also has invested significant tax payer dollars.</p> <p>In 2010, the U.S. Fish and Wildlife Service constructed a visitor contact station behind the office on Hood-Franklin Road which includes a parking area, restroom, universally accessible trails, informational kiosks, playscape, and amphitheater for the visiting public. Again, this infrastructure was built to fulfill the purposes of the Refuge as defined in the Refuge Improvement Act of 1997 and Fish and Wildlife Act of 1956. This area is now used by over 30,000 visitors annually that come for a quiet experience to explore the restored wetlands, riparian and grassland habitats and associated wildlife. Over 2,000 school children also visit this area to experience nature, and take part in the Refuge's environmental education programs with hands on learning such as plantings, wildlife observation, and art projects. The site also hosts a variety of events each year with surges of attendance that fill the primary and alternate parking lots.</p> <p>This visitor experience will be impacted by the increase in traffic and noise on Hood-Franklin Road, necessitating the inclusion of a variety of mitigation measures to ensure the continued use of this valuable resource as mandated by federal law that guides the management of the Refuge under the umbrella of the Refuge Improvement Act of 1997.</p> <p>Mitigation measures to be implemented include:</p> <p>a: Construction of additional turn pocket at main entrance to the Headquarters Unit.</p> <p>b: Re-route traffic to another road</p> <p>c: Implement lower speed limits (45 mph maximum) near the Refuge Headquarters Unit</p> <p>d: Limit the time of the day of increased traffic volumes which is currently 6am-7pm</p> <p>e: Limit the days trucks may use roads accessing the Refuge (none Friday-Sunday)</p> <p>f: Implement litter control program</p> <p>h: Education for personnel not to use facilities at Refuge Headquarters</p> <p>i: Signage to inform public of entrance and egress roadway into Headquarters</p> <p>j: Vegetation screen along road visible to public</p> <p>k: Noise reduction program</p> <p>l: Control dust and debris that may escape from truck trailers</p> <p>m: Consider other methods for transporting materials and supplies that does not impact current road conditions and traffic volume (barge, rail, tunnel).</p> <p>n: Minimize truck traffic seasonally on Hood Franklin Road during the high use periods at the Refuge Visitor Contact Station from October to May</p>	<p>recreation areas as an environmental commitment. Where construction impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project proponents would provide clear pedestrian, bicycle, and vehicular routes around or across construction sites. These would be designed to be safe, pleasant and would integrate with opportunities to view the construction site as an additional area of interest. These physical facilities would be combined with public information, including sidewalk wayfinding information that would clearly indicate present and future opportunities for access. Mitigation Measure TRANS-1b would limit construction hours or activities and prohibit construction vehicle trips on congested roadway segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of congested roadway segments.</p>
2580	21	<p>Safety is of the utmost importance when bringing the public to the Stone Lakes National Wildlife Refuge. Furthermore Refuge staff, volunteers, partners, contractors and cooperators utilize Refuge roads to access public use areas, travel between Refuge management units, and move equipment such as tractors, and boats, cattle trucks, etc. An</p>	<p>Several mitigation measures would be incorporated to ensure safety to recreationists.</p> <p>Mitigation Measure TRANS-1a (see Chapter 19 of the Final EIR/EIS) would involve preparation of site-specific construction traffic management plans that would address potential public access routes and provide</p>

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		<p>increase in the volume of traffic on all roads will impact the safety of ingress and egress onto Refuge roads from affected public roads including Hood-Franklin Road, Lambert Road, and the River Road.</p> <p>In 2005, a waterfowl hunting program was established at the Sun River Unit of the Refuge. Hunters enter the Sun River Unit from Lambert Road, arriving between 4 and 5 am and leaving between 11 and 2 pm on Wednesdays and Saturdays during the months of October through January. The entrance road has poor visibility in both directions because Lambert Road dips down for approximately 2000 LF at the bridge. An increase in traffic associated with the project will significantly increase the ingress and egress hazards on the road, underscoring the need for mitigation measures that must be put in place.</p> <p>Mitigation measures to be implemented include:</p> <ol style="list-style-type: none"> Design and build new entrance to Sun River Unit Design and build turn pockets on Lambert Road at the entrance to the Sun River Unit Re-route traffic to another road Implement lower speed limits near the Sun River Unit Limit the time of the day of increased traffic volumes which is currently 6am-7pm Signage to inform public of entrance and egress roadway into Sun River Unit <p>The main entrance to the Refuge Visitor Contact Station (VCS) located off Hood-Franklin Road is used by over 30,000 visits per year, and the Refuge annually hosts over 2,000 students and education professionals conducting environmental education and service learning programs. The Elk Grove Unified School District has selected the Refuge VCS as a safe site to send students to participate in field activities. The Friends of Stone Lakes NWR annually hosts the local Nature Bowl competition with California Department of Fish & Wildlife and provides buses for underfunded schools. Mitigation measures must be implemented to ensure the safety of staff, volunteers and cooperators working in and around the Refuge. The Mitigation Measures listed above need to be implemented to address these issues.</p>	<p>construction information notification to local residents and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes of access to affected recreation areas as an environmental commitment. Where construction impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project proponents would provide clear pedestrian, bicycle, and vehicular routes around or across construction sites. These would be designed to be safe, pleasant and would integrate with opportunities to view the construction site as an additional area of interest. These physical facilities would be combined with public information, including sidewalk wayfinding information that would clearly indicate present and future opportunities for access. The following have been added to address your concerns:</p> <ol style="list-style-type: none"> Implement maximum 45 mph speed limit on Hood Franklin Road west of Interstate 5. Include signage on Hood Franklin Road: "Caution: entering sensitive wildlife area." Further reduce speed limit in both directions to 35 mph from ½ mile west of Interstate 5 to 1 mile west of Interstate 5. Add sign at Visitor Center entrance stating that facilities are for SLNWR visitors only. Add a right hand turn lane on Hood Franklin Road at the entrance of the Stone Lakes Visitor Center Reduce speed limit to 35 mph on Lambert Road from 1 ½ miles west of Interstate 5 to 2 ¼ miles west of Interstate 5. Include signage on Lambert Road: "Caution: entering sensitive wildlife area." <p>Mitigation Measure TRANS-1b would limit construction hours or activities and prohibit construction vehicle trips on congested roadway segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of congested roadway segments.</p>
2581	1	<p>The [Delta Protection] Commission has expressed strong concerns about the proposed twin tunnels project on many occasions. In its last discussion on the project, the Commission authorized its Executive Director to submit comments on the RDEIR/SDEIS on its behalf. Please also note that Commission members representing State agencies do not necessarily share these concerns and this letter in no way implies a recommendation or position of the Governor or his administration.</p> <p>The Commission has reviewed the California WaterFix project (and the preceding Bay Delta Conservation Plan) with an eye toward its impacts on the unique Delta values. The Commission staff reviewed the proposed project's most significant impacts to the Delta region. The length, complexity and highly technical nature of the RDEIR/SDEIS prohibit a comprehensive review of all project impacts by the comment period deadline.</p>	<p>The lead agencies acknowledge your comments regarding the length of the document and contents there-in. For more information, please see Master Response 38 regarding the length and complexity of the document. For more information about the public review period, please see Master Response 39.</p>
2581	2	<p>The [Delta Protection] Commission acknowledges and appreciates the improvements to the proposed California WaterFix project since the Bay Delta Conservation Plan (BDCP)</p>	<p>Alternative 4A has been developed in response to public and agency input. Mitigation measures would be implemented to reduce congestion and traffic impacts, and to reduce aesthetic and visual impacts.</p>

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		<p>proposal, namely, the elimination of pumping plants proximate to the north Delta river intakes in favor of a pumping plant at the south Delta tunnels terminus; the construction of earthen sedimentation basins rather than concrete-lined basins; and the relocation of selected tunnel shaft locations to less sensitive areas. All of these changes would reduce overall construction-related impacts [e.g., pile-driving in proximity to Delta residents/businesses; permanent electrical transmission lines and pumping plant structures that would mar Delta aesthetics and harm wildlife (in the case of the transmission lines); reduction in construction traffic] in the more populated north Delta, even as it will heighten some impacts in the south Delta (specifically, the associated local impacts from the pumping plant construction at Clifton Court Forebay).</p> <p>Despite the improvements described above, the Commission objects to the proposed project because of its short- and long-term harm to the unique values of the Delta. The project's construction impacts -- river intakes and associated forebay, conveyance facilities and associated above-ground and subsurface disturbance -- would cause significant and unavoidable harm to the Delta, including: the destruction of homes, some of which are significant historical buildings; traffic congestion with attendant impacts on local businesses that would not likely survive a 10-year or longer construction period; and interference with access to well-used informal recreation, such as bank fishing, and driving for pleasure.</p>	<p>Mitigation Measure REC-2, which would create alternative locations for bank fishing. Changes in community character would result from construction of the proposed water conveyance facilities, as described under Impact ECON-3 in Chapter 16, Socioeconomics. However, such changes would not constitute environmental effects under CEQA. For NEPA, while water conveyance construction could result in beneficial effects relating to the economic welfare of a community through additional regional employment and income, adverse social effects could also arise as a result of declining economic stability in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities.</p> <p>Please refer to Impact CUL-5 in Chapter 18, Cultural Resources, regarding impacts to historic buildings.</p>
2581	3	<p>The project's operations would most likely degrade water quality to the detriment of in-Delta water users. California WaterFix would fundamentally change the agricultural- and water-based character of Delta communities and landscape because of the many impacts that could not possibly be mitigated. Even the RDEIR/SDEIS acknowledges that the project and attendant mitigation measures would "alter the Delta landscape by incrementally, and substantially, introducing elements into the study area over time. This could pave the way for the gradual transition of a much valued cultural and regional landscape and make it easier for other similar projects to be implemented over time because of the devalued baseline conditions. . . ." (Appendix A, Chapter 17, p. 17-54).</p>	<p>The proposed project would result in changes to community character, as described in Impact ECON-in Chapter 16, Socioeconomics. However, these impacts would be not adverse for NEPA, and because CEQA only evaluates physical impacts and not those that are social in nature, there would be no impact for CEQA. The project would result in three significant and unavoidable impacts to water quality, see Chapter 8. However, these would not affect users from a recreational user perspective. Please refer to Impact AG-2 under Alternative 4A for impacts to agriculture.</p> <p>For additional information regarding Delta as a Place, see Master Response 24.</p>
2581	4	<p>The RDEIR/SDEIS repeatedly fails to identify mitigation for the damages that would occur to Delta communities. The analysis dismisses very real impacts on the Delta's economy (such as incompatibility with local land use designations and policies, conflicts with existing land uses, and effects on the recreation economy) because the RDEIR/SDEIS considers these to be temporary changes (not physical or permanent) and therefore not an impact. A decade's worth of construction activity could hardly be termed temporary. Land use and socioeconomic impacts over such a time period would result in substantial loss of revenue, likely business closures, and loss of entrepreneurial opportunities. Although the RDEIR/SDEIS promises to compensate property owners for direct losses due to the tunnel construction, property owners and workers who will suffer indirectly would not be eligible. Further, the RDEIR/SDEIS considers and discards socioeconomic impacts as less than significant because they are not physical impacts. However, that approach ignores the physical impacts of economic and social decline, such as vacant and deteriorating buildings, and lack of investment in infrastructure, including levees.</p>	<p>Blight and abandonment of buildings would constitute a physical effect on the environment under CEQA, and is considered in Chapter 16, Socioeconomics, Impacts ECON-3 and 15, changes in community character. Notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in decay and blight stemming from a lack of maintenance, upkeep, and general investment. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects such that a significant impact would not occur (see Appendix 3B, Environmental Commitments, AMMs, and CMs). Specifically, these include commitments to develop and implement erosion and sediment control plans, develop and implement hazardous materials management plans, provide notification of maintenance activities in waterways, develop and implement a noise abatement plan, develop and implement a fire prevention and control plan, and prepare and implement mosquito management plans.</p> <p>For additional information regarding levees, see Final EIR/EIS for the BDCP/California WaterFix Appendix 6A BDCP/California WaterFix Coordination with Flood Management Requirements.</p>
2581	5	<p>The RDEIR/SDEIS often defers the creation of feasible and enforceable mitigation to the preparation of subsequent plans. These include construction traffic management plans, Agricultural Land Stewardship Plans, and an Adaptive Management Program that would be the backbone for managing California WaterFix operations in order to prevent exceeding water quality standards. These mitigation measures include phrases such as "where</p>	<p>Addressing some mitigation more programmatically is appropriate when the specifics of certain impacts cannot reasonably be determined because, for example, they are dependent on future actions. Please also see Master Response 2 for a discussion of the project vs. program level analysis in the EIR/EIS and why this is adequate and allowed under CEQA and NEPA.</p>

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		feasible," "make good faith efforts," and "could be provided/developed" that demonstrate a frustrating lack of commitment. In the case of in-Delta water quality impacts, the mitigation measures leave it to the proponents to determine whether and under what terms to provide funding for alternative water supplies -- raising the question of whether there could be an objective evaluation of local need for such supplies. The RDEIR/SDEIS sorely lacks specificity and commitment in many important mitigation measures.	For additional information regarding Water Quality, see Mater Response 14. For additional information regarding mitigation feasibility and performance measures, please review Master Response 22.
2581	6	The sheer scale and complexity of the RDEIR/SDEIS make it extremely difficult to comprehend the project's effects on the Delta. By combining new, old and partially-edited project impact analyses, the RDEIR/SDEIS requires a herculean effort to navigate through multiple technical documents to piece together enough information to understand what has changed from BDCP and how project impacts would (or would not) be mitigated. There is no clear summary of the California WaterFix's potential impacts and proposed mitigation measures -- the RDEIR/SDEIS commingles the analysis of preferred alternative 4A with that of 17 other alternatives, making it all but impossible to compare the project to the baseline condition.	The Federal and State Lead Agencies have done their best to make the EIR/EIS for the proposed project as fair, objective, and complete as possible. The Lead Agencies are following the appropriate legal process and are complying with CEQA and NEPA in preparing the EIR/EIS for the proposed project. These agencies readily acknowledge, however, that the document addresses a number of topics for which some scientific uncertainty exists. Such uncertainty can give rise to differing opinions as to what conclusions may be reached. The table in the Executive Summary provides a summary of the impacts in each resource area and lists the mitigation proposed for each. Please refer to Master Response 38 regarding the length and complexity of the EIR/EIS.
2581	7	The California WaterFix project fails to meet the requirements of existing State law, which calls for achieving the coequal goals in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place (PRC section 29702(a)). Despite thousands of pages of analyses and mitigation measures, the RDEIR/SDEIS fails to convince that the project is not yet another massive engineering project that harms the Delta region for the benefit of Delta water exporters.	For more information regarding the proposed project's compliance with the Delta Reform Act please see Master Response 31. Also see Appendix 3I, BDCP Compliance with the 2009 Delta Reform Act, and Appendix 3J, Alternative 4A (Proposed Project) Compatibility with the 2009 Delta Reform Act. For more information regarding purpose and need please see Master Response 3. For additional information regarding Delta as a Place, see Master Response 24.
2581	8	The California WaterFix project would permanently alter the trajectory of Delta communities by degrading residents' quality of life, traditional economic engines such as agriculture and recreation, the social fabric of communities, the cultural and visual character of the region, and the visitor experience. Specific impacts described in the RDEIR/SDEIS include reduced employment and income in traditional economic sectors, unacceptable conditions for vehicle traffic and transit, reduced emergency response times, destruction of archeological, built environment, and paleontological resources, incompatibility with existing land uses and applicable land use designations and plans, exposure to construction noise at all hours, new sources of light and glare, and substantial alteration of the visual quality and character of the region. The RDEIR/SDEIS fails to adequately analyze the extent of these impacts on communities, underestimates the negative aspects of the project, and overestimates the positive aspects. The convoluted nature of the RDEIR/SDEIS makes complete understanding of project impacts for each community difficult. The project description and analysis should isolate impacts for each community, including the timeframe for each impact, to determine potential changes to community character.	Impacts to recreation are discussed by specific recreation areas in terms of construction duration, as shown in Table 15-15 of Chapter 15, Recreation. Impact ECON-3, which discusses changes in community character, includes as many details as possible. However, because the Delta includes so many communities, and the rural residents in between towns, this impact discussed the community of the Delta as a whole. As many mitigation measures as feasible have been included in the proposed project to reduce impacts related to noise, traffic, public services and utilities, aesthetics, cultural resources, and recreation.
2581	8	The RDEIR/SDEIS should provide a solid foundation for its socioeconomic analysis through a thorough description of baseline conditions. An independent peer review panel assembled by the Delta Science Program found that the [Delta Protection] Commission's Economic Sustainability Plan (ESP) provided valuable baseline information about the Delta economy, yet the RDEIR/SDEIS ignores much of this baseline information, stating only that "the ESP sometimes used assumptions and data different than those applied for the analysis in this chapter" (BDCP Draft EIR/EIS p. 16-33). These assumptions and data are critical to the	The methodology used in Chapter 16, Socioeconomics, is described in Section 16.3.1. The EIR/EIS analysis relies on the IMPLAN model, which applies multipliers to generate estimates of employment and income change for the five-county Delta region. The five-county Delta region IMPLAN model is described in Section 16.3.1.2, Delta Regional Employment and Income.

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		socioeconomic analysis, such as the \$98 million discrepancy between total agricultural production values in the Delta in the ESP (\$795 million) versus the RDEIR/SDEIS (\$697 million). The RDEIR/SDEIS should provide an explanation for why the analysis used specific assumptions and data over other, commonly used assumptions and data.	
2581	10	<p>Given the critical importance of flood protection for Delta communities and the greater region, project impacts on levees and floodplains require further analysis than provided in the limited discussion in the RDEIR/SDEIS. The consequences of a levee break and flooding could include harm to human and animal life, infrastructure, property, and habitat. The socioeconomic and natural resource effects of flooding could be enduring and, in the case of infrastructure damage, widespread.</p> <p>Project activities, including construction of multiple cofferdams, levee reconfigurations, sediment loading, construction traffic, pile driving, and dewatering, threaten to damage the integrity and stability of levees through lack of maintenance and emergency response, erosion, seepage, subsidence, and sink holes. Several thousand acres (depending on the citation in the RDEIR/SDEIS, the total ranges from 2,570 acres to 3,630 acres) will be used on a temporary basis for the storage of reusable tunnel material (RTM, or the soil and material excavated from twin tunnel borings). As much of the proposed storage sites for RTM are located in the floodplain, placement of large volumes of material (even on a temporary basis) has the potential to significantly impact drainage conveyance and floodplain storage at critical locations in the Delta.</p> <p>These impacts show the potential hazards resulting from a project that fundamentally alters a complex and interconnected system of Delta levees and drainage facilities. Unfortunately, the existing analysis in the RDEIR/SDEIS leaves detailed analysis for later iterations of the project. The environmental document should contain project design and mitigation programs that are based on detailed technical analysis of the existing levee and drainage systems.</p>	<p>Please see Appendix 6A, of the EIR/EIS for a summary of potential effects to flood protection and levee stability, including measures to reduce and to avoid impacts. This section discusses potential impacts of pile driving, construction traffic, dewatering, and cofferdam installation, among others. Overall, construction and operations of the Proposed Project will not increase flood risk to people or structures because the project will be designed and operated to ensure flood neutrality in the Delta and surrounding communities.</p> <p>With respect to the portion of the comment related to potential disruption of drainage facilities for lands in the vicinity of RTM storage areas, during the design phase, DWR would conduct site-specific analysis to determine the extent of the potential conflicts related to the RTM storage areas, including locations of water supply and drainage facilities. DWR would consult with local reclamation districts and land owners to avoid conflict with existing infrastructure to the extent possible. Mitigation measures have been identified in the EIR/EIS to reduce the impacts to less than significant as compared to pre-construction conditions. Mitigation Measures AG-1, GW-1, GW-5, and WQ-11 will reduce the severity of significant impacts on land uses by implementing activities such as siting project footprints to encourage continued agricultural production and land uses; monitoring changes in wells and shallow groundwater levels during construction; monitoring seepage effects; relocating or replacing infrastructure in support of continued agricultural and other land use activities; identifying, evaluating, developing, and implementing feasible phased actions to reduce impacts; and engaging counties, owners/operators, and other stakeholders in developing optional approaches. Please see Chapters 14 and 20 in the Final EIR/EIS.</p>
2581	11	The thresholds for impacts are often not described and, when they are, they appear artificially constrained to make impacts less than significant. Discussion of Impacts TRANS-1 through TRANS-3, which consider construction vehicle trips, pavement conditions, and safety hazards on local roadways, states that impacts would be less than significant if mitigation measures were sufficiently implemented, yet there is not an adequate description of how these vague and noncommittal measures would satisfy significance thresholds.	<p>The thresholds for traffic impacts were developed as discussed in Chapter 19 of the Final EIR/EIS, Section 19.1.2.1, using methodology from the 2000 Highway Capacity Manual, a standard reference used in the transportation industry to determine potential impacts of a proposed project.</p> <p>The mitigation measures, in general, seek to reduce impacts "where feasible." However, the lead agencies acknowledge that in some cases impacts may not be possible to avoid as discussed on page 19-122 of the Recirculated draft EIR and elsewhere in the document.</p> <p>For an additional discussion regarding the feasibility of mitigation please review Master Response 33.</p>
2581	12	The RDEIR/SDEIS repeatedly fails to provide mitigation that adequately addresses the nature of impacts on communities. Project proponents should consider mitigation measures that reduce economic blight, such as investing in public facilities and infrastructure through the Delta Investment Fund (PRC section 29778.5), funding the expansion and implementation of the [Delta Protection] Commission's Delta Community Action Planning project (the Commission is currently preparing community action plans in Courtland and Walnut Grove to promote physical improvements in these Legacy communities), or supporting agricultural, cultural, recreational, and tourism programs and projects through the newly created Delta Regional Foundation. In Impact ECON-3, the authors argue that mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation will reduce impacts to community character, but the	See response 2581-4.

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2581	13	<p>RDEIR/SDEIS fails to describe how any of these measures and commitments will preserve community character.</p> <p>The RDEIR/SDEIS acknowledges that groundwater losses related to construction dewatering and implementing environmental commitments may not be replaced with supplies to meet preexisting demands or planned demands of affected parties. These groundwater quantity and quality losses for agricultural and municipal supplies are considered a significant and unavoidable impact, but these impacts are completely avoidable and mitigable.</p>	<p>The Final EIR/EIS includes additional construction methods to reduce the effects on groundwater to a level of less than significant. As described in the Final EIR/EIS, during construction, slurry walls would be constructed around the construction site at the intakes, tunnel shafts, and forebays to reduce the effect of dewatering wells. Dewatering wells also would be installed at construction sites associated with levees without the use of slurry walls. No dewatering would be required along the tunnel alignment. The effects on groundwater at locations with slurry wall installations would not result in significant effects as compared to Existing Conditions. It is possible, that some impacts may result in effects depending upon specific information that would be collected during design and construction phase. Mitigation measures have been identified in the EIR/EIS to reduce the impacts to less than significant as compared to Existing Conditions. Mitigation Measures AG-1, GW-1, GW-5, and WQ-11 will reduce the severity of significant impacts in agricultural areas by implementing activities such as siting project footprints to encourage continued agricultural production; monitoring changes in groundwater levels during construction; monitoring seepage effects; relocating or replacing agricultural infrastructure in support of continued agricultural activities; identifying, evaluating, developing, and implementing feasible phased actions to reduce EC levels; engaging counties, owners/operators, and other stakeholders in developing optional agricultural stewardship approaches; and/or preserving agricultural land through off-site easements or other agricultural land conservation interests.</p> <p>The greatest potential for impacts to groundwater will be during the construction of the intake facilities, pump stations, forebays, and tunnel shafts. It is anticipated that construction of these facilities will require some type of groundwater dewatering immediately adjacent to the construction site while construction activities are underway. For the tunneling work itself, it is anticipated that groundwater presents minimal risk to the project since the tunneling work will be conducted with equipment that is specifically designed to operate under high groundwater conditions. Hence localized dewatering along the tunnel alignment will not be conducted as a regular component of the tunnel mining operation. Localized dewatering along the alignment will be used only in the event of certain maintenance activities, or specialized construction conditions. Geotechnical exploration work is planned in advance of dewatering well installation so that the groundwater regime at each project site can be better understood, which in turn will allow each dewatering system to be uniquely designed and operated in order to limit construction-related effects to the groundwater user adjacent to the construction sites.</p> <p>DWR plans to have a groundwater monitoring and management plan (Plan) in place before construction begins. The Plan will include a process by which baseline groundwater conditions are established along the project corridor, defining groundwater monitoring during and after construction, and establishing mitigation measures to be utilized. The establishment of groundwater baseline information will allow DWR and all relevant parties to develop information on groundwater conditions and consumptive usage patterns. This information will aid in determining if and when any adverse project-related effects to the groundwater during construction activities occur. The baseline monitoring process may include determining variables such as seasonal changes in groundwater level elevations and water quality, the interface of groundwater with surface water and drainage, consumptive usage patterns established by municipal, domestic, and agricultural wells, and crop utilization of the groundwater. The timing, frequency, and duration of the monitoring during and after construction would be determined before construction begins and will be dependent, in part, on the results of the pre-construction monitoring and the documented use of each resource.</p> <p>If a construction-related effect is identified to have occurred, the magnitude, significance, and anticipated duration of the effect will be determined and an appropriate mitigation measure will be utilized. Mitigation</p>

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			measures that may be considered could include deepening of existing wells, the installation of new wells, or providing an alternate source of temporary water. The most appropriate mitigation methodology applied will be determined on a case by case basis in conjunction with the impacted party. For more information see Mitigation Measure GW-1 in Appendix A Chapter 7 Groundwater.
2581	15	Project proponents should provide mitigation that goes beyond simply what is required under the California Environmental Quality Act (CEQA), but also address the statutory requirement that "the coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place (PRC section 29702(a)). The discussion of socioeconomic impacts, in particular, shows little effort to protect and enhance these values. If the RDEIR/SDEIS is not the proper forum for these mitigation measures, project proponents need to address them in a way that provides an opportunity for public comment.	Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce adverse effects related to change in community character as much as possible (see Appendix 3B, Environmental Commitments, AMMs, and CMs). Please refer to Master Response 24 regarding Delta as Place. For more information regarding public outreach efforts please see Master Response 40.
2581	15	Creation of feasible and enforceable mitigation is often deferred until preparation of subsequent plans, which will not have the benefit of public comment. Transportation mitigation measures, particularly TRANS-1b and TRANS-1c, lack specificity and commitment to alleviating traffic congestion due to the project. These mitigation measures include words and phrases such as "where feasible," "process," "make good faith efforts," and "may" that demonstrate a frustrating lack of teeth. Specificity and commitment in transportation mitigation measures [are] sorely needed, because the impacts of traffic congestion on the agricultural economy and rural communities such as Byron, Clarksburg, Courtland, Hood, Locke, Ryde, and Walnut Grove -- communities that are reliant on one or two idiosyncratic levee roads -- could be devastating.	The lead agencies acknowledge the importance of Delta roads to the agricultural economy and these rural communities. Mitigation Measure TRANS-1b specifies limiting construction activity to hours with more capacity to avoid operational deficiencies on affected roadways. Mitigation Measure TRANS-1c also seeks to work with affected jurisdictions to enhance capacity of congested roadway segments where construction traffic will substantially affect transportation facilities.
2581	16	Similarly, Mitigation Measures CUL-5 and CUL-6 regarding historic resources provide the outline of built environment treatment plans and a vague assurance that project proponents will consult with relevant parties prior to demolition or ground-disturbing activities. The cultural resources mitigation measures currently focus on specific properties or sites but should look at the cultural values of the Delta in a larger context, as suggested by the cultural landscape approach discussed in the Secretary of the Interior's Standards for the Treatment of Historic Properties + Guidelines for the Treatment of Cultural Landscapes. This contextual approach is particularly fitting given that the Commission and members of Congress are pursuing designation of the Delta as a National Heritage Area. Further environmental review should reference the [Delta Protection] Commission's Feasibility Study for a Sacramento San Joaquin Delta National Heritage Area, reviewed and approved by the National Parks Service in June 2012; legislation creating the Sacramento San Joaquin Delta National Heritage Area introduced in the 111th, 113th, and 114th Congress; and the Commission's Delta Narratives project (www.delta.ca.gov/delta_narratives.htm), which developed academic essays that assessed the historic and cultural importance of the Delta region in California and American history.	Cultural landscapes are discussed throughout Chapter 18, including Rural Historic Landscapes in the Delta (Section 18.1.7.8). Direct effects of these cultural landscapes are discussed in Section 18.3.2 and Mitigation Measure CUL-6 includes following the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68) and the National Park Service's Guidelines for the Treatment of Cultural Landscapes. Lastly, Mitigation Measure CUL-5 specifies consultation and implementation of a Built Environment Treatment Plan (BETP). This BETP will specify property-specific protect, avoidance, and treatment as necessary.
2581	17	The project would permanently damage scenic resources along Highway 160, which is designated as a State scenic highway. The RDEIR/SDEIS finds that the visual impacts of the conveyance facilities are significant and unavoidable despite the mitigation measures offered. Other potential mitigation measures, such as landscape barriers, visitor centers or kiosks, interpretive signs, and viewpoints, could provide some relief but ultimately cannot repair the visual disruption from the project.	The EIR/EIS acknowledges that there are significant and unavoidable impacts to Aesthetics and Visual Resources. Details are provided in Chapter 17. For additional information regarding Significant and Unavoidable Impacts, see Master Response 10. The analysis utilizes a combined visual analysis approach using the three most-accepted visual assessment methodologies used by Federal agencies including the Federal Highway Administration (FHWA), Bureau of Land Management (BLM), and USDA Forest Service (USFS) that have overlapping assessment principles. The

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			<p>Federal Lead Agencies and DWR have adopted this combined approach for reasons explained below.</p> <p>FHWA approach, by itself, did not seem appropriate for the proposed project. The FHWA utilizes both a qualitative and quantitative (visual quality rating) approach. The concepts of intactness and unity a, as used in this approach, are often confused by the general public and, commonly, by practitioners applying the methodology. For this reason, the Lead Agencies concluded that Therefore, using the FHWA visual quality rating approach used for highway projects would as not deemed to be effective or user-friendly in expressing visual impacts associated with the proposed project and its facilities.</p> <p>Another factor supporting the Lead Agencies’ conclusion in this regard is that In addition, FHWA is currently updating its their existing assessment methodology to be more user-friendly and to provide a better framework for analyzing visual impacts under NEPA.</p> <p>In contrast to the FHWA, the BLM and USFS create existing visual management mapping overlays of the landscape and associated visual management objectives, which can allow a more quantitative analysis. On these federal lands, a pre-project and post-project change can be more quantitatively expressed by evaluating the change in visual quality/scenery management objectives.</p> <p>This approach has its virtues, but it should be noted that Federal mapping may not be representative of site-specific visual conditions because mapping is often prepared at the landscape, not site-specific, level. In the absence of a project falling on Federally managed lands with such mapping, a qualitative visual assessment approach is most often used and is an accepted means of analysis. Given that pre-existing mapping that establishes a visual quality management objective is not available for the study area, the Lead Agencies used and qualitative analysis combined with a quantitative analysis of the simulations was used for this EIR/EIS. The quantitative evaluation of the simulations uses a modified BLM approach to quantify impacts but whereas the BLM only has 3 ratings (A-C), this analysis establishes 7 ratings (A-G) so that the degree of impact and change is better and more thoroughly expressed.</p> <p>Simulations are representative in that they paint a picture of impacts that not only occur at the simulated locations but elsewhere in the affected study area. Please refer to Chapter 17 of the Final EIR/EIS, Section 17.3.1.2 Preparation of Visual Simulations, and Appendix 17C, which illustrates that a team was used to evaluate the simulations to better account for the range in which different viewers are likely to regard the visual environment. The majority of features that would be constructed by the project have been quantitatively analyzed using the numerical evaluations of the simulations. The remainder have been qualitatively described. The text provides narrative descriptions, beyond negative and adverse, to tell the reader how the visual environment will be altered.</p>
2581	18	Impacts to historic resources are significant and unavoidable. Documentation, interpretation, salvage, and restoration of other properties cannot make up for the fact that these resources will be removed permanently. Implementation of the project as currently conceived would irreparably harm the Delta as we now know it.	The commenter’s opinion related to the DEIR/S is acknowledged. Eligible and potentially-eligible built resources are discussed in Section 18, including Sections 18.2.2.1, and 18.3.3. Mitigation Measure CUL-5 specifies consultation and implementation of a Built Environment Treatment Plan (BETP). This BETP will specify property-specific protect, avoidance, and treatment as necessary. Mitigation Measure CUL-5 includes identification and evaluation of resources which were not accessed to date.
2581	19	By 2020, the population of the five Delta counties is projected to be over 4 million people. Visitors to the Delta generate a total of approximately 12 million visitor days of use annually with a direct economic impact of more than a quarter of a billion dollars in spending, according to the ESP [Delta Protection Commission’s Economic Sustainability Plan]. California WaterFix would significantly impact recreation values, recreation opportunities and the recreational economy of the Delta with a massive construction project over the course of 10 years.	As described in Section 16.3.1 of Chapter 16 of the Final EIR/EIS, Socioeconomics, changes in employment and income associated with changes in recreation expenditures were not estimated using a regional IMPLAN model because direct changes in recreational expenditures have not been quantified. These changes, along with their anticipated economic effects, are discussed qualitatively in Sections 16.3.3 and 16.3.4 and are based on the discussion and analysis included in Chapter 15 of the Final EIR/EIS, Recreation, Sections 15.3.3.2 through 15.3.3.16. <p>As described in Impact ECON-5 under Alternative 4A of Chapter 16 of the Final EIR/EIS, Socioeconomics, the</p>

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		<p>The RDEIR/SDEIS is inadequate in its analysis related to economic impacts to Delta recreation and tourism. The RDEIR/SDEIS continues to undervalue recreational spending in the Delta with a \$76 million discrepancy between the ESP (\$312 million) versus RDEIR/SDEIR (\$236 million).</p>	<p>water conveyance facilities proposed under these alternatives are identical. As described and defined under Impacts REC-1 through REC-4 in Chapter 15 of the Final EIR/EIS , Recreation, construction of water conveyance facilities under Alternative 4A would include elements that would be permanently located in two existing recreation areas. Additionally, substantial disruption of other recreational activities considered temporary and permanent would occur in certain areas during the construction period. Were it to occur, a decline in visits to Delta recreational sites as a result of facility construction would be expected to reduce recreation-related spending, creating an adverse effect throughout the Delta region. Additionally, if construction activities shift the relative popularity of different recreational sites, implementation of Alternative 4A may carry localized beneficial or adverse effects.</p> <p>Access would be maintained to all existing recreational facilities, including marinas, throughout construction. As part of Mitigation Measure REC-2, project proponents would enhance nearby fishing access sites and would incorporate public recreational access into design of the intakes along the Sacramento River. Implementation of this measure along with separate other commitments as set forth in Appendix 3B, Environmental Commitments, AMMs, and CMs, relating to the enhancement of recreational access and control of aquatic weeds in the Delta would reduce these effects. Environmental commitments would also be implemented to reduce some of the effects of construction activities on the recreational experience. Similarly, mitigation measures proposed throughout other sections of this document, and listed under Impact REC-2 in Chapter 15, Recreation, would also contribute to reducing construction effects on recreational experiences in the study area.</p>
2581	20	<p>The RDEIR/SDEIS states recreational expenditures that affect regional employment and income have not been quantified. The document could better serve readers with inclusion of economic data from the [Delta Protection] Commission's ESP [Economic Sustainability Plan]. For example, the ESP estimates recreation and tourism supports 3,064 jobs in the five-county Delta region with a labor income of approximately \$100 million. Inclusion of this information in the document would better inform readers of potential impacts to the Delta's recreational employment.</p> <p>The importance of recreational boating, fishing and camping to the Delta economy can be measured by the estimated \$194 million spent yearly. Constricted or inaccessible waterways and heavy truck traffic would likely reduce visitor trips and expenditures, further impacting existing well-established businesses which may be unable to economically weather the effects of multi-year construction activities. These economic impacts are inadequately addressed in the RDEIR/SDEIS. The Commission continues to recommend that the project proponents provide funds to compensate business owners for loss of revenue due to construction of the project or provide funds to improve these facilities.</p>	<p>As described in Section 16.3.1 of Chapter 16 of the Final EIR/EIS, Socioeconomics, changes in employment and income associated with changes in recreation expenditures were not estimated using a regional IMPLAN model because direct changes in recreational expenditures have not been quantified. These changes, along with their anticipated economic effects, are discussed qualitatively in Sections 16.3.3 and 16.3.4 and are based on the discussion and analysis included in Chapter 15, Recreation of the Final EIR/EIS, Sections 15.3.3.2 through 15.3.3.16. Waterways would remain navigable in the vicinity of all project construction. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce adverse effects (see Appendix 3B, Environmental Commitments, AMMs, and CMs). Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in an adverse effect. Changes in recreational expenditures could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts within the meaning of CEQA would only result if the changes in regional economics cause reasonably foreseeable physical impacts.</p>
2581	21	<p>Driving for pleasure is estimated to provide \$26 million dollars to the Delta economy annually, as cited in the [Delta Protection] Commission's ESP [Economic Sustainability Plan]. However, project impacts such as detours, road closures, heavy truck traffic or diminished aesthetics to this recreational activity are not considered in the RDEIR/SDEIS. Potential mitigation measures are noted above and include landscape barriers, viewpoints, and visitor centers.</p>	<p>Please refer to Alternative 4A in Chapter 16, Socioeconomics of the Final EIR/EIS, ECON-3 regarding changes in community character. Construction traffic is discussed in Impact REC-2, and also in Chapter 19 of the Final EIR/EIS, Transportation, Section 19.3.3.2. Mitigation Measure TRANS-1a would involve preparation of site-specific construction traffic management plans that would address potential public access routes and provide construction information notification to local residents and recreation areas/businesses. Additionally, DWR would provide and publicize alternative modes of access to affected recreation areas as an environmental commitment. Where construction impedes access around or near existing recreation areas (e.g., Clifton Court forebay), the project proponents would provide clear pedestrian, bicycle, and vehicular routes around or across construction sites. These would be designed to be safe, pleasant and would integrate with opportunities to view the construction site as an additional area of interest. These physical facilities would be combined with public information, including sidewalk wayfinding information that would clearly indicate present and future opportunities for access. Several mitigation measures would</p>

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			be incorporated to reduce impacts. These include the following: Mitigation Measure TRANS-1b would limit construction hours or activities and prohibit construction vehicle trips on congested roadway segments and Mitigation Measure TRANS-1c would implement measures to enhance capacity of congested roadway segments. Mitigation Measure AES-1b is set forth to minimize sensitive receptors (i.e., residents and recreational areas) views of construction work areas. Mitigation Measure AES-1e will apply aesthetic design treatments to all structures to the extent feasible and includes evaluating similar, local well-designed water conveyance structures, including those with historic value and use these features as design precedent to develop designs for project feature and reference to the Freeport Regional Water Project intake facility.
2581	22	In general, there is insufficient quantitative assessment of recreation impacts to determine an adequate level of mitigation. The [Delta Protection] Commission's ESP [Economic Sustainability Plan] and 2005 Inventory of Recreational Facilities should be consulted and would be useful in providing an appropriate quantitative assessment. Once this is accomplished, the necessary levels of funding could be determined and shared with the public. Specific feasible mitigation measures could be written and enforced.	The methodology used in Chapter 15 of the Final EIR/EIS to determine well-established recreation sites entailed using GIS data layers from DWR, California Protected Areas Data Portal, Green Info Network, USFWS, and Recreation areas developed from AECOM and ICF. As such, generally those include more formal recreation sites. The Delta, however, has countless informal recreation sites, which would be infeasible to track or list.
2581	23	The RDEIR/SDEIS recognizes that reduced access and delays to boat passage would occur on the Sacramento River as a result of tunnel intake construction. However, it concludes that boat passage volume along this section of the river is low without providing any documentation. It doesn't appear that the dozen or more boat launches located in nearby upriver locations were considered when the boat passenger volume was estimated. Further, the RDEIR/SDEIS only considers boating navigational impacts in the vicinity of the intakes during construction (including extensive no-wake zones that would deter recreational boating along many miles of the river) and does not consider any navigational impacts or speed restrictions once the river intakes are operational.	Impacts TRANS-13, TRANS-17, and TRANS-19 discuss potential effects on navigation caused by the proposed project. Because it does not involve a physical change in the environment, effects to navigation caused by changes in surface water elevation, by themselves, are not considered environmental impacts under CEQA. Any secondary physical environmental impacts that may result are covered under other impacts. Nonetheless, as explained above, changes in surface water elevation during the construction and operation of the intakes will not have a significant impact on navigation.
2581	24	The RDEIR/SDEIS contains undefined measures and commitments. In Mitigation Measure REC-2, the project proponent proposes to provide alternative bank fishing access sites by enhancing nearby formal fishing sites. However, three of the four sites proposed to be enhanced (Clarksburg Fishing Access, Georgiana Slough and Clifton Court Forebay) would be directly impacted and rendered less usable due to project construction. Additionally, the enhancements are undefined. The measure provides the reader with no idea of how the undefined enhancements to formal fishing sites would compensate for the loss of bank fishing sites.	Cliffhouse and Georgiana Slough would not be directly impacted by Alternative 4A, the preferred alternative. The current level of detail in the proposed mitigation measures meet requirements by CEQA and NEPA. The measures are designed to be as beneficial as possible.
2581	25	While the [Delta Protection] Commission supports measures to control invasive aquatic vegetation and commitments to fund aquatic weed control for the enhancement of recreational access and opportunities, details on implementation and funding in the RDEIR/SDEIS are vague to nonexistent. This lack of detail gives the public little assurance that these measures would or could accomplish their intended objective.	There are a number of environmental commitments outlined in Appendix 3B, Environmental Commitments, AMMs, and CMs of the FEIR/FEIS, to address issues with various invasive aquatic species. Among the measures being committed to are: Develop and Implement a Barge Operations Plan (which in part will involve monitoring during construction which will include observation of barge landing, loading, unloading, and departure of one or more barges at each active barge landing site; the condition of both river banks at each landing site, and visual inspection for invasive aquatic species on in-water equipment such as barges and small work boats); Funding the California Department of Boating and Waterways' Programs for Aquatic Weed Control; Construction Best Management Practices (AMM2).). Project proponents will contribute funds to further the DBW's aquatic weed control programs in the Delta. The funds will be transferred prior to, or concurrent with, commencement of construction of the project. The proposed project's contribution to DBW's aquatic weed control would include enhancement funding for those areas with project impacts that are located outside DBW's risk assessment area. The project proponents would partner with existing programs operating in the Delta to perform risk assessment and subsequent prioritization of treatment areas to strategically and effectively reduce expansion of the multiple species of IAV in the Delta. This risk assessment would dictate where initial control efforts would occur to maximize the effectiveness of the

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			commitment. The MMRP being developed for the BDCP/California WaterFix will include additional details.
2581	26	Environmental Commitment (EC) 36.3.2 proposes to enhance recreation access in the vicinity of the proposed intakes. This vague commitment would be improved by an actual and enforceable plan developed in consultation with State Parks, to fund and develop Delta Meadows-Locke Boarding House as proposed in State Parks Recreation Proposal for the Sacramento-San Joaquin Delta and Suisun Marsh.	Project proponents have chosen to leave this commitment open to creative interpretation so as not to limit it by referring only to existing examples. DWR shall work with the California Department of Parks and Recreation (DPR) to help insure the elements of the project would not conflict with the elements proposed in DPR's Recreation Proposal for the Sacramento-San Joaquin Delta and Suisun Marsh. As many improvements as feasible would be incorporated. These include enhanced bicycle and foot access to the Delta, and construction of trails.
2581	27	The exclusion of EC 36.3.3 from California WaterFix is perplexing. EC 36.3.3 would have the project proponents contribute funds for construction of new recreation opportunities as well as for protection of existing recreation opportunities as outlined in Recommendation DP 11 of the Delta Plan. The RDEIR/SDEIS unreasonably concludes that the EC does not apply to California WaterFix because total impacts have been substantially reduced from the previous BDCP alternatives. Yet impacts to Delta recreation opportunities and experiences from the preferred alternative are still found to be significant. This omission is a missed opportunity to mitigate impacts to recreational opportunities; mitigation would also be consistent with the State Water Project obligations under the Davis-Dolwig Act (Water Code section 11900 et seq.), which requires that State Water Project facilities be constructed in a manner consistent with the full utilization of their potential for the enhancement of fish and wildlife and to meet recreational needs. While EC 36.3.3 is vague in nature, a feasible plan developed in consultation with State Parks and funded by project proponents could result in meaningful mitigation which would reduce impacts to recreational opportunities in the Delta.	Environmental Commitment 38.3.3 was eliminated from the California WaterFix as Alternative 4A would protect and restore up to 15,798 acres of habitat under Environmental Commitments 3, 4, and 6-10, as compared with 83,800 acres under Alternative 4 and therefore has significantly less loss of recreational opportunities within the project area. While significant and unavoidable impacts to recreation still exist with the implementation of Alternative 4A, the extent of the Impacts REC-10 and REC-11 would be greatly reduced.
2581	28	Although agricultural impacts under California WaterFix have been reduced from the BDCP proposal due to the removal of conservation measures for wide-scale habitat restoration, significant impacts to the Delta's agricultural lands and economy remain. The RDEIR/SDEIS does not clearly identify the amount of agricultural land lost due to tunnel construction or the amount of agricultural land conversion required to mitigate for habitat impacts of the tunnel construction.	The effects of Alternative 4A on cultivated lands are discussed from various perspectives in this document. DEIR/SDEIS Section 4.3.10, Agricultural Resources, of the RDEIR/SDEIS includes a detailed analysis of cropland conversion as it relates to agricultural productivity. Many of the discussions of individual terrestrial plant and wildlife species in this section also focus on the relevance of cultivated land loss. Because cultivated lands is not a natural community and because the effects of its loss are captured in the individual species analyses, there is no separate analysis of this land cover type presented here. For Alternative 4A, the total loss (permanent and temporary) is estimated to be 7,314 acres. The majority of the permanent loss would be associated with tidal marsh restoration (Environmental Commitment 4; 54 acres), riparian natural community restoration (Environmental Commitment 7; 251 acres), nontidal marsh restoration (Environmental Commitment 10; 832 acres), and construction of the modified tunnel and associated water conveyance facilities (permanent removal of 3,768 acres and temporary removal 1,339 acres of cultivated lands). Of the 7,314 acres, 7,091 would be made up of croplands and the other 223 acres would be non-cropland agricultural areas.
2581	29	The "temporary" impacts of reusable tunnel material (RTM) storage sites is uncertain, with the document offering varying numbers for the amount of acreage affected (2,570 acres in Appendix 3C, 2,600 acres in Chapter 3, and 3,630 acres in Chapter 14).	Chapter 3 of the Final EIR/EIS, Description of Alternatives and Appendix 3C provide an estimated assumption for the total space needed to accommodate RTM for Alternative 4A. This amount is estimate to be approximately 2,570 acres. In Chapter 3, this amount is rounded up to 2,600 acres. The acreage amounts reported in Final EIR/EIS, Chapter 14, Agricultural Resources include acreages from the conveyance facility, RTM and Spoil areas combined. No revisions to the EIR/EIS are required.
2581	30	The RDEIR/SDEIS does not mitigate the project's impacts on the agricultural economy of the Delta, the primary economic driver in the Delta region. Although it lists agricultural economic impacts (Economic Impacts 6, 7, 12 and 13), the RDEIR/SDEIS considers these to be "no impact" under CEQA and NEPA (National Environmental Policy Act). The RDEIR/SDEIS	The Final EIR/EIS, Chapter 16 describes the socioeconomic impacts to the Delta as a whole, which comprises five counties, unless otherwise stated. As stated in Section 16.1 of Chapter 16, this chapter describes socioeconomic effects in the Delta region. The study area for the socioeconomic analysis comprises Sacramento, San Joaquin, Yolo, Solano, and Contra Costa Counties, collectively referred to as the Delta

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		<p>weighs the increase in construction- and conservation-related employment and labor income against lost agricultural employment and labor income, and concludes that there is no impact. This analysis fails to quantify lost employment and labor income in the agricultural economy, and does not recognize that the project will likely benefit workers and businesses from urban areas on the periphery and outside of the Delta, while lost agricultural jobs will mainly harm workers and businesses in the rural center of the Delta.</p>	<p>region. The discussion of the Delta region describes the existing socioeconomic conditions of the statutory Delta and the surrounding Delta counties.</p> <p>As described in Impact ECON-6 under Alternative 4A in Chapter 16, Socioeconomics, construction of conveyance facilities would convert land from existing agricultural uses to project-related construction uses, and agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described under Impacts AG-1 and AG-2 in Chapter 14, Agricultural Resources. Total value of irrigated crop production in the Delta would decline on average by \$5.3 million per year during the construction period, with total irrigated crop acreage declining by about 4,700 acres. Other effects related to production costs, travel time, and loss of investments in production facilities and standing orchards and vineyards would also occur as a result of facilities construction. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact.</p> <p>Under Alternative 4A, publicly-owned water conveyance facilities would be constructed on land of which some is currently held by private owners. Property tax and assessment revenue generated by lands that would be transferred from private to is estimated to total \$6.7 million over the construction period. Typically, decreases in revenue could potentially result in the loss of a substantial share of some agencies' tax bases and particularly for smaller districts affected by a project. However, California Water Code (Section 85089 subdivision 9b) specifies that the entities constructing and operating a new Delta conveyance facility will fully mitigate for the loss of property tax revenues or assessments levied by local governments or special districts. This Water Code requirement will ensure that tax revenues forgone as a result of transferring land from private to public ownership will be fully offset.</p> <p>As discussed under Impact ECON-1, construction of the water conveyance facilities would be anticipated to result in a net temporary increase of income and employment in the Delta region. Construction-related employment from the project is estimated to peak at 2,427 FTE jobs in year 3. Total employment (direct, indirect, and induced) would peak in year 12, at 8,673 FTE jobs. Direct agricultural employment would be reduced by an estimated 16 FTE jobs, while total employment (direct, indirect, and induced) associated with agricultural employment would fall by 57 FTE jobs. Throughout the five-county Delta region, population and employment would expand as a result of the construction of water conveyance facilities, as discussed under Impacts ECON-1 and ECON-2.</p>
2581	31	<p>Although the proposed project calls for much less conversion of farmland to habitat, the RDEIR/SDEIS prescribes developing an "Agricultural Land Stewardship Plan" (ALSP) as the balm for many injuries to the Delta, including economic concerns, agricultural productivity, and the loss of farmland. Although the ALSP could be valuable in supporting agriculture in the Delta, the RDEIR/SDEIS lacks sufficient information about who or what organizations would determine the appropriate activities that should be included in the ALSPs. The RDEIR/SDEIS should describe how these plans would assist landowners or employees who lose their jobs or businesses because of the project. The deferral of mitigation to as-yet undeveloped plans to be developed by the project proponents raises questions about the level of committed funding and certainty of the mitigation tools.</p> <p>The [Delta Protection] Commission recommends that Delta agricultural interests (perhaps best represented by the Delta Caucus, consisting of county Farm Bureaus from the five Delta counties) should determine the most effective components to be included in ALSPs, with sufficient funding provided by the project proponents.</p>	<p>The Lead Agencies welcomes any suggestions from the Delta agricultural community regarding a preferred administrator for agricultural mitigation funding, including how an administrator could work with the full range of ALSP strategies to determine the best measures to mitigate for the loss of Delta farmland.</p>

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2581	32	<p>Water Quality Impacts:</p> <p>Modeling results from the BDCP Draft EIR/EIS showed significant and unavoidable impacts for electrical conductivity (EC) and chloride. EC and chloride are among the most critical water quality constituents for in-Delta agricultural and urban use. The RDEIR/SDEIS describes new modeling and sensitivity analyses of water quality impacts intended to determine whether the water quality standards exceedances were actual project-related impacts or modeling artifacts. After changing many assumptions in the modeling, the RDEIR/SDEIS determined that the project would not cause Delta chloride, bromide, organic carbon, or other contaminants to be out of compliance any more frequently than under existing conditions. Specifically, the RDEIR/SDEIS concludes:</p> <p>"Furthermore, in reality, staff from DWR and Reclamation constantly monitor Delta water quality conditions and adjust operations of the SWP and CVP in real time as necessary to meet water quality objectives. These decisions take into account real time conditions and are able to account for many factors that even the best available models cannot simulate. Thus, it is likely that some objective exceedances simulated in the modeling would not occur under the real-time monitoring and operational paradigm that will be in place to prevent such exceedances." (RDEIR/SDEIS Section 2, page 2-10).</p> <p>Chapter 8 of the RDEIR/SDEIS concludes that the negative effects on Delta water quality from facilities operations and maintenance would be less than initially expected in the Draft EIR/EIS. For the remaining "significant and unavoidable" impacts to chloride and EC concentrations, the document refers to mitigation measures WQ-7 and WQ-11. Mitigation Measure WQ-7 calls for more evaluation and modeling of water quality impacts of operating the tunnels, and future development and implementation of phased mitigation actions. Mitigation Measure WQ-11 calls for additional evaluations of "operational ability to reduce or eliminate water quality degradation in the western Delta" to avoid or minimize reduced water quality conditions, and adaptive management to reduce or eliminate water quality degradations. The RDEIR/SDEIS acknowledges that both mitigation measures may not work. These are not acceptable mitigation measures. If the proposed project would harm Delta water quality in order to increase the reliability of water exports, then the proposed project is inconsistent with the State's goals for the Delta.</p>	<p>The Lead Agencies acknowledge that uncertainty is inherent in any planning effort of this geographic and temporal scale. However, DWR strived to use the best available science throughout the effects analysis, consistent with the requirements of the ESA. Additionally, the official public review process for the proposed project provides an opportunity for formal public comment on the proposed project and project alternatives. Public and agency comments on the public draft have led to further refinement of the proposed project, as evidenced in the RDEIR/SDEIS.</p> <p>Relative to the 2013 DEIR/EIS, the 2015 RDEIR/SDEIS presented updated water quality analyses for Alternative 4 based on new modeling sensitivity analyses that reflected a change in EC compliance point from Threemile Slough to Emmaton, the current EC compliance point in the Bay-Delta Water Quality Control Plan. In addition, relative to the 2013 DEIR/EIS, the 2015 RDEIR/SDEIS presented results of sensitivity analyses conducted to better understand the driver of the modeling results and identify whether certain modeling results were indeed the result of the alternative or modeling artifact. Changing modeling assumptions did not result in determining that certain alternatives would not cause significant impacts to water quality in the RDEIR/SDEIS. The RDEIR/SDEIS introduced three new alternatives—Alternatives 4A, 2D, and 5A—of which Alternative 4A was identified as the new preferred alternative. These three alternatives had reduced impacts to water quality relative to those identified for Alternative 4, in both the 2013 DEIR/EIS and updated assessment in the 2015 RDEIR/SDEIS. Thus, the water quality impacts identified in the 2013 DEIR/EIS did not go away due to a change in modeling assumptions. Rather, additional analyses allowed for refinement of the water quality impacts, and new alternatives showed lesser impacts relative to those presented in the 2013 DEIR/EIS because certain components of the original Alternative 4 (e.g., tidal habitat restoration) were not part of the new alternatives.</p> <p>Please see Master Response 22, Mitigation, Environmental Commitments, Avoidance and Mitigation Measures, and Alternative-Specific Environmental Commitments. Also see Master Response 10, Significant and Unavoidable Impacts.</p>
2581	33	<p>The RDEIR/SDEIS incorporates ECs [Environmental Commitments] to bolster the mitigation measures. Yet the RDEIR/SDEIS makes no concrete commitments. In particular, EC 38.3.1 calls for the project proponents to commit to "assisting" in-Delta municipal, industrial, and agricultural water purveyors that would be subject to significant unavoidable increases in bromide, [electrical conductivity], chloride, and dissolved organic carbon due to operation of the tunnels.</p> <p>Unfortunately, the ECs lack specificity (such as the processes to be used, timeframe, means of payment, sources, and authority for obtaining alternative water supplies); worse yet, although the funding would be intended to "fully offset" any increased treatment or delivery costs, the solutions are expected to be "devised by the affected purveyors in consultation with project proponents after thorough investigation and completion of environmental review" (RDEIR/SDEIS Appendix 38 page 38-73). These conditions practically guarantee that the financial compensation and assistance to Delta water agencies, agricultural interests, and other Delta water users would be hard-fought and dependent on their skill, tenacity, and financial wherewithal to participate in complex regulatory</p>	<p>The Lead Agencies do not agree with commenter's assertions that the ECs are not binding. As part of the planning and environmental assessment process, the project proponents will incorporate ECs and best management practices into the action alternatives to avoid or minimize potential adverse effects (a NEPA term) and potential significant impacts (a CEQA term). The project proponents will implement these ECs as part of the project construction activities. In other words, these ECs will be satisfied even if not separately imposed by the permitting agencies (i.e., to be treated as de facto mitigation measures as noted on page 2-22, Section 2 of the RDEIR/SDEIS and Page 3B-3 of Appendix 3B). If permitting agencies impose additional measures or modifications, those will also be adhered to as part of the permit(s). The Lead Agencies will coordinate planning, engineering, design and construction, operation, and maintenance phases of the alternative with the appropriate agencies. For more information regarding ECs please see Appendix 3B of the RDEIR/SDEIS and Master Response 22, Mitigation, ECs, AMMs, and Alternative-Specific ECs.</p> <p>Concerning funding assistance, please note that an EIR is not required to discuss or evaluate how a mitigation measure will be funded (Santa Clarita Organization for Planning the Environment v County of Los Angeles (2007) 157 CA4th 149, 163). Such considerations, as mentioned by the commenter, will be handled on a case-by-case basis, based on the degree of impact, its relationship to the construction or operations of the California WaterFix, and the affected water sources. By law, the California WaterFix, including any</p>

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		<p>proceedings.</p> <p>If the project proponents are sincere in their commitment to mitigating the effects of the project, the Final EIS/EIR must provide more concrete commitments to mitigating the harmful effects on Delta interests. Improvements to the Ecs for water quality should include more detail on how the assistance to in-Delta municipal, industrial, and agricultural water purveyors would work; in particular, creating an objective third-party governance process, describing the sources for alternative water supplies, and specifying the criteria to be employed to determine eligibility for assistance.</p>	<p>applicable ECs, AMMs and mitigation measures, will be funded by the public water agency beneficiaries of the project. (Wat. Code, § 85089, subd. [a]).</p> <p>As discussed in the RDEIR/SDEIS and confirmed in the Final EIR/EIS, the preferred project would result in only one water quality impact that cannot be mitigated to less than significant levels: effects on methylmercury, which is due to habitat restoration components of project.</p> <p>EC 3B.3.1 clearly indicates what the water quality criteria thresholds are, and when a local water purveyor would be eligible for assistance. In turn, all parties would negotiate a solution where the otherwise significant water quality impacts would be reduced to less than significant. This EC provides a portfolio of mitigation strategies including financial support to the affected water purveyors to modify their operations, technical contributions (such as engineering or specialized studies like geology or hydrology), or partnerships (to implement the solution)—all of which would be dependent on the type, extent, duration, and location of the significant impact in question. The EC also states that a thorough investigation of the problem, along with appropriate environmental review (i.e., CEQA and/or NEPA if necessary) will be undertaken prior to implementing the EC. Other ECs and AMMs may also be used to supplement this particular EC. Adaptive management and monitoring requirements will separately aid in providing an overall perspective as to a particular environmental issue related to water quality impacts. The courts have held that future studies of impacts are permissible with identified mitigation measures. (E.g., <i>Defend the Bay v City of Irvine</i> (2004) 119 Cal. App. 4th 1261, 1275). There, the court reasoned that where an agency is faced with “impacts for which mitigation is known to be feasible, but where practical considerations prohibit devising such measures early in the planning process (e.g., at the general plan amendment or rezone stage), the agency can commit itself to eventually devising measures that will satisfy specific performance criteria articulated at the time of project approval. Where future action to carry a project forward is contingent on devising means to satisfy such criteria, the agency should be able to rely on its commitment as evidence that significant impacts will in fact be mitigated. [Citations.]” (Id. at pp. 1275-1276, citations and internal quotation marks omitted.) With respect to the California WaterFix, performance criteria will be on par with the applicable water quality thresholds of significance stated elsewhere in the RDEIR/SDEIS and in the Draft EIR/EIS.</p> <p>Meanwhile, it is too speculative, as suggested by the commenter, to provide possible future scenarios associated with this EC in the Final EIR/EIS, such as “on how the assistance to in-Delta municipal, industrial, and agricultural water purveyors would work; in particular, creating an objective third-party governance process, describing the sources for alternative water supplies, and specifying the criteria to be employed to determine eligibility for assistance.” More details will be provided in the MMRP and subsequent individual mitigation plans. Trying to be too specific at this planning stage of the project would greatly limit the abilities for both the Lead Agencies and any affected water purveyors to arrive at workable, efficient, and cost-effective solutions that address the discrete impacts caused by the project while complying with CEQA and NEPA.</p> <p>The commenter also states: “These conditions practically guarantee that the financial compensation and assistance to Delta water agencies, agricultural interests, and other Delta water users would be hard-fought and dependent on their skill, tenacity, and financial wherewithal to participate in complex regulatory proceedings.” The Lead Agencies have established relationships with these stakeholders and recognize their expertise, mandates, and needs and respect their negotiation skills. Given established facts, such as baseline conditions, modeled exceedances with project implementation, and a commitment by the Lead Agencies to carry out the various ECs and mitigation measures, there is a basis being established with this process to do what is appropriate and to fulfill applicable state and federal water quality laws.</p> <p>Please refer to Master Response 5.</p>

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2581	34	<p>Water Supply Impacts:</p> <p>Water Code section 85021 states that it is State policy to reduce reliance on diversions of Delta water. However, the express purpose of the WaterFix is "to make . . . improvements to the SWP system in the Delta necessary to restore and protect ecosystem health, water supplies of the SWP and CVP south of the Delta, and water quality. . ." One of the objectives is to: "Restore and protect the ability of the SWP and CVP to deliver up to full contract amounts when hydrological conditions result in the availability of sufficient water. . ." (RDEIR/SDEIS Section 1, page 1-8).</p> <p>The proposed project would maintain, not reduce, reliance on the Delta for imported water. In dry periods, the Bureau of Reclamation and Department of Water Resources frequently petition the State Water Resources Control Board to relax Delta water quality standards to allow continued exports, and these petitions are usually granted. California WaterFix further fails to comply with Water Code section 85021, which also calls for ". . . A statewide strategy of investing in improved regional water supplies, conservation, and water use efficiency. Each region that depends on water from the Delta watershed shall improve its regional self-reliance for water through investment in water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved local coordination of local and regional water supply efforts." The RDEIR/SDEIS fails to demonstrate what has been done locally and regionally to decrease reliance on Delta water exports, analyze additional conservation measures, and determine how such scenarios could affect federal and State water project operations. It should also develop and analyze an alternative that achieves the State's goals as expressed in Water Code section 85021 with reduced Delta exports.</p>	<p>Under the range of alternatives considered in the EIR/S full contract amounts are not delivered in the majority of times to the SWP and CVP water contractors, as presented in Appendix 5A, Section C, CALSIM II and DSM2 Model Results, of the EIR/EIS. Long-term water deliveries to SWP and CVP water contractors located south of the Delta are lower under Alternatives 6, 7, and 8 as compared to the Existing Conditions and the No Action Alternative.</p> <p>With regards to the Delta Reform Act and the proposed project, please see Master Response 31.</p> <p>The project is just one element of the state's long-range strategy to meet anticipated future water needs of Californians in the face of expanding population and the expected effects of climate change. It is important to note that the project is not intended to serve as a state-wide solution to all of California's water problems, and it is not an attempt to address directly the need for continued investment by the State and other public agencies in conservation, storage, recycling, desalination, treatment of contaminated aquifers, or other measures to expand supply and storage (as described in Section 1.C.3 of Appendix 1C, Demand Management Measures).</p>
2581	35	<p>The proposed project lacks a mechanism that can promptly respond to claims for damages resulting from the construction of the twin tunnel project. Whether from pile-driving noise impacts that render a nearby residence unlivable or dewatering activities along the tunnel boring alignment that would dry up a private rural well, there should be a simple claims process to address economic damages to Delta residents/businesses related to tunnel construction activity. A mitigation measure should be added to establish a "Delta Compensation Fund", with funding provided by the project proponent into an escrow account to be administered by an independent third party. The Fund administrator could make payments directly (and quickly) to affected parties. This would both provide an impartial means of addressing negative impacts and a prompt method to compensate those affected.</p>	<p>The lead agencies believe that the EIR/EIS appropriately identifies the impacts due to construction of the water conveyance facilities and has identified mitigation measures in the resource area chapters 5-30 of the Final EIR/EIS, Chapter 23, Noise, Chapter 7, Groundwater specifically.</p> <p>The California Department of General Services operates a Government Claims Program. There is no reason to believe that this program would not be used for claims of property damage related to projects implemented by DWR.</p>
2581	36	<p>In addition to PRC [California Public Resources Code] section 29703.5(a) requirements that the [Delta Protection] Commission advise the Delta Stewardship Council on methods of preserving the Delta as an evolving place, PRC section 29773 authorizes the Commission to provide comments and recommendations to the Delta Stewardship Council on any significant project proposal within the scope of the Delta Plan. Review and comment authority include identification of impacts to unique Delta values, actions that reduce or mitigate those impacts, and review for project consistency with the Commission's Land Use and Resource Management Plan, and the Delta Plan. The Council is required to consider the Commission's recommendations, and adopt those that are feasible and consistent with the Delta Plan.</p> <p>Again, we strongly urge the project proponents to comply with both the letter and the spirit</p>	<p>The lead agencies acknowledge the commenters concerns regarding the protection of the unique cultural, recreational, natural resource and agricultural values of the Sacramento-San Joaquin Delta. The lead agencies have developed the proposed project over many years in collaboration with numerous agencies and stakeholders. Please see Master Response 24 regarding how the proposed project and EIR/EIS address effects on the Delta as a Place.</p> <p>The Delta Plan is currently the subject of litigation which has arisen since the issuance of the 2015 RDEIR/SDEIR and which could affect the legal requirements and/or implementation of the Delta Plan. Thus, the status of the Delta Plan and the Council's consistency certification process remain unclear during the pendency of the litigation, including appeals.</p> <p>For additional information regarding the Delta Plan and the proposed project, please see Master Response</p>

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		of existing State policy to protect and enhance the unique cultural, recreational, natural resource and agricultural values of the Sacramento-San Joaquin Delta.	31.
2582	1	<p>Optimization of Alternatives:</p> <p>As noted previously, only the preferred alternative for this project has been optimized to enhance the performance of the alternative for environmental and water supply purposes. The lack of optimization of the other alternatives should be noted and, where possible, addressed. For example, only Alternative 4A is modeled using the current Emmaton salinity compliance point while the other alternatives use a Threemile Slough compliance point. Additionally, while California WaterFix-specific alternatives 2D and 5A represent high and low levels of construction and infrastructure impacts, no alternative was proposed that would optimize operational conditions for environmental purposes. To illustrate that there is additional potential for providing environmental benefits without impacting cold water pool resources and compliance with water quality requirements, the State Water Board requested that a scenario that increases Delta outflows without impacting cold water pools be evaluated. This scenario illustrates that more outflow can be provided without impacting cold water pools. However, given the limited time for this scenario analysis, it was also not optimized or developed into an alternative.</p>	<p>Under the BDCP alternatives, for the purposes of modeling, the compliance point is assumed at Threemile Slough. For Alternatives 4, 4A, 2D and 5A, under the Existing Conditions and No Action Alternatives, the compliance point would remain at Emmaton. Please see Master Response 4 regarding the selection of alternatives used in the EIR/S.</p> <p>Analysis of additional modeling scenarios with higher Delta outflow (and further operational refinement), as requested by the State Water Resources Control Board staff, is included in Appendix 5E of the FEIR/S. The comment that only Alternative 4A has been optimized reflects that Alternative 4A was modified from Alternative 4 in part because of comments received on the BDCP and related to certain "optimization issues," including a balancing of competing cold water pool and outflow demands, and water quality requirements. Other alternatives, as a result of their operating criteria, do not achieve the same balance, but it is not because of a lack of optimization or alternatives development.</p>
2582	2	<p>Continued Involvement of the Water Boards:</p> <p>The descriptions of the various alternatives provide that flow requirements and other operational requirements may be set and modified during interim operations under the decision tree process, during initial operations after the north Delta diversions begin, during the Real-Time Operational Decision-Making Process, during ad hoc adaptive management actions, and within the context of a formal Adaptive Management and Monitoring Program. The document does not describe a role for the State Water Board, but the State Water Board will have a role in these decision-making processes, and may establish additional requirements through its water right authorities.</p>	<p>The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS. The lead agencies, as petitioners for a change in point of diversion request to the SWRCB, acknowledge the SWRCB's authority related to both water rights and water quality approvals of Alternative 4A. The operational elements associated with Alternative 4A and the integration of future operational decision-making are expected to be a part of the SWRCB final approval of Alternative 4A.</p>
2582	3	<p>Water Transfer Assumptions:</p> <p>The assumptions for potential water transfers that may occur due to the BDCP/California WaterFix should be reconsidered in the context of the current drought. The analysis should consider that the magnitude of transfers and other water exchanges that did or could have occurred in the drought would occur more often if there were more pumping capacity under the BDCP/California WaterFix.</p>	<p>Regarding the effects of the CA WaterFix on transfers, see Master Response 43. For information on CA WaterFix and the drought conditions, please refer to Master Response 47.</p>
2582	4	<p>Assumptions for Water Demand and Reliability:</p> <p>The California WaterFix baseline No Action Alternative (NAA)-2025 assumes increased north-of-Delta diversions of approximately 483 thousand acre-feet (TAF)/year and maximum contract amounts for SWP south-of-Delta municipal and industrial demands regardless of hydrological conditions without the project. The magnitude of those assumed demands is unlikely to be realized by 2025, and to some degree may occur because of the additional water supply reliability provided by the California WaterFix. To the extent that the magnitude of these factors is caused by the California WaterFix or the assumptions are simply too large, the effects of action alternatives such as Alternative 4A will be underestimated and masked. These assumptions should be revisited.</p>	<p>Information on water demand and reliability is updated and presented in Appendix 5A, BDCP EIR/EIS Modeling Technical Appendix, of the Final EIR/EIS. As described in the appendix, the water demand is projected to increase substantially in the area north of the Delta by 2030 as compared to the Existing Conditions. These assumptions are based upon 2005 population projections. The majority of this increased water demand is projected to occur in the American River and Bear River watersheds and is consistent with the projected water demands described in the urban water management plans and agricultural water management plans submitted to DWR by 2012. The urban water management plans for those areas are projecting an increase in urban water demand of approximately 352,000 acre-feet/year and an increase in agricultural water demand or more than 64,000 acre-feet/year. These projections include water conservation approaches to achieve the overall goal of reducing urban water demand in California by 20 percent in 2020.</p>

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2582	5	<p>Uncertainty and Scenario Analysis vs. Prediction of Outcome:</p> <p>The level of uncertainty associated with the modeling should be clearly articulated in the impacts analysis. There is a large degree of uncertainty regarding the exact effects of the project due to a number of factors. However, this is not always clear in the RDEIR/EIS. The effects analysis frequently does not follow the guidelines for use of output from physical and biological models. Generally, those issues arise either when a particular analysis fails to distinguish between modeling as a decision support tool versus modeling to establish predictive point values or when the analysis rescales physical model output from a monthly time step to a daily or hourly time step for input to biological models. The comparative analysis approach should have been applied for every analysis.</p>	<p>The Draft EIR/EIS (and RDEIR/SDEIS and Final EIR/EIS) contains a wealth of information and analyses. The development of the BDCP, California WaterFix, and all alternatives in the EIR/EIS reflects over seven years of collaboration, response to requests for additional information, careful thought, accumulation of the latest scientific information, and the thorough analyses needed to develop and conduct an environmental review of the proposed project which has statewide importance.</p> <p>The Lead Agencies have done their best to make the EIR/EIS for the proposed project as fair, objective, and complete as possible. These agencies readily acknowledge, however, that the document addresses a number of topics for which some scientific uncertainty exists. Such uncertainty can give rise to differing opinions as to what conclusions may be reached. The Lead Agencies have taken a hard look at all environmental effects associated with the proposed project and alternatives and the EIR/EIS equates to a good faith effort at full disclosure of those environmental effects.</p> <p>Overall, the analysis attempts to identify these uncertainties, and the proposed project accounts for these uncertainties through implementation of an Adaptive Management Program that will be used to assess the project effects and adjust as necessary to meet the project objectives, meet regulatory requirements, and achieve other goals. For both the biological and water quality modeling, a comparative approach was used for all modeling-based analyses. The analysis takes into account the reliability and uncertainty associated with specific models to inform the CEQA and NEPA impact assessment and conclusions. In the case of biological models, the methods described in Chapter 11 of the Final EIR/EIS also describe the various strengths and weaknesses of each model, including how they are rescaled.</p> <p>In the case of water quality, the comparative approach is an inherent part of all the constituent assessments in Chapter 8 of the Final EIR/EIS and the modeling was always used as an impact assessment decision support tool. All impact discussions describe conditions with the alternative “relative to” conditions under Existing Conditions and the NAA, not in absolute terms. Constituent levels are described as increasing or decreasing relative to EC and NAA by certain amounts. Frequency of exceedance of objectives is described as being higher or lower than EC and NAA. Such comparisons were used to characterize the direction and degree of effect, from which impact calls were made. A component of the assessment for certain constituents (e.g., EC, selenium, mercury) was a comparison of modeled levels/concentrations to specific thresholds (e.g., water quality objectives, fish tissue thresholds). However, the models were not used in an effort to predict point values for WQ or fish tissue levels at locations and times in the future, due to several uncertainties regarding the effects of climate change, the outcome of the State Board petition proceedings, and future adaptive management. As such, the models were run in comparative mode and use the output to inform our impact assessment as to whether a given Alternative (i.e., operational scenario) would be likely to make WQ or fish tissue levels at various locations within the affected environment worse, better, or about the same to what they would be under Existing Conditions and the No Action Alternative (NAA).</p>
2582	6	<p>Downstream Water Quality, Noncovered Fish, and Natural Communities:</p> <p>Downstream effects of the alternatives on Suisun Bay, Carquinez Straight, San Pablo Bay, and San Francisco Bay should be further analyzed and the methods used in the analyses should be consistent with accepted methods that have been used to model and measure the effects of changing water export timing, volume, and rate on salinity, water quality, and aquatic and terrestrial biological resources throughout the entire Bay-Delta ecosystem. The effects analysis conclusion that the change in Delta outflow under either Alternative 4 or Alternative 4A would have no measureable effect on San Francisco Bay salinity because the change would be two to three orders of magnitude lower than the tidal flow mischaracterizes the bidirectional flow of the tides and the unidirectional Delta outflow. Neither quantitative nor qualitative model results were provided to support the conclusion. The UnTrim model was developed specifically to conduct this type of analysis and was</p>	<p>The analysis in the EIR/EIS includes impacts to the area downstream of the Delta, including effects on Delta outflows, sedimentation, non-listed fish, and water quality. The analysis of impacts of the BDCP in the study area can be found in the Final EIR/EIS chapters 5-30. None of the impacts evaluated in areas downstream of the Delta were determined to be significant.</p>

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		extensively used in the BDCP/California WaterFix analyses of water quality and X2.	
2582	7	<p>Stockton Ship Channel Aeration Continued Funding:</p> <p>The staff report for the low dissolved oxygen Total Maximum Daily Load (TMDL) in the Stockton Ship Channel identified three causes for the impairment. One of these was the magnitude of San Joaquin River flow entering the channel. Alternative 4, the original preferred BDCP alternative, included Conservation Measure 14. Conservation Measure 14 committed to contribute funding to maintain and operate the experimental aeration device as mitigation for altering San Joaquin River flow. Alternatives 4A, 2D and 5A, while continuing to manipulate channel flow in a manner similar to Alternative 4, no longer includes a commitment to share in the cost of aeration. The RDEIR/EIS justifies this decision by noting that the impact of the project is less than significant because of the aerator. The aerator is being funded on a voluntary basis by others and may not be present in the future should they decide to stop contributing funds. If this occurs, then the lack of oxygen in the channel could again block the fall return of upstream migrating adult Chinook salmon. We [Water Boards] recommend that all alternatives commit to contributing funding for continued aeration or other measures to address any impacts of the project on dissolved oxygen conditions.</p>	The comment is noted. Conservation Measure 14 of the BDCP was identified as a conservation measure that would contribute to the recovery of covered fish. Because CM14 was not specifically proposed to mitigate any impact of the proposed water conveyance facility (that was carried forward in California WaterFix), it is no longer included in the proposed action (Alternative 4A).
2582	8	<p>Cache Creek Settling Basin Improvements:</p> <p>The Water Boards understand that the BDCP Alternative 4 that includes habitat conservation measures beyond the mitigation needed for the California WaterFix is no longer the preferred project in the RDEIR/EIS. However, to the extent that this and other BDCP alternatives are still evaluated and may carry over into the EcoRestore effort, the Water Boards recommend that commitments to improve the Cache Creek Settling Basin be made to mitigate for expected increases in mercury fish tissue concentrations from restoration efforts. The Delta Methyl Mercury TMDL [total maximum daily load] report estimated that 56 percent of all inorganic mercury loads entering the Delta came from the Cache Creek drainage. Half of this load is trapped in the Cache Creek Settling Basin while the rest is exported to the Yolo Bypass and downstream Delta. The Methyl Mercury TMDL Control Program recommended that improvements be made to the Cache Creek Settling Basin to increase the trapping efficiency and decrease mercury exports.</p>	The commenter is correct that California WaterFix does not include changes to the Cache Creek Settling Basin. This action is not being considered as part of California EcoRestore and is a separate and independent action from Alternative 4A. No issues related to the adequacy of the environmental impact analysis in the RDEIR/SDEIS were raised.
2583	1	In general, the Florin Resource Conservation District is deeply concerned about the anticipated negative impacts on the economy, ecology, and overall quality of life that this Project will have on the Delta. The Delta is not only the hub of California's water system, but is a region of the State that has tremendous cultural heritage and economic value to California. The proposed Project threatens these virtues and its short and long-term effects could be devastating. Unfortunately, the original DEIR/EIS and the new RDEIR/SEIS are so massive and complicated, it is difficult to gauge the extent of these effects and how devastating they actually will be.	The proposed project includes restoration and other Environmental Commitments sufficient to reduce the construction and operational effects of the conveyance facilities. California EcoRestore is a separate program intended to restore and protect up to 30,000 acres of Delta habitat in the next few years. The proposed project will provide improved operational flexibility in the Delta to help restore and protect ecosystem health, water supply of the SWP and CVP and water quality. The Final EIR/EIS includes a discussion of regional demand management tools in Appendix 1C Demand Management Measures and the RDEIR/SDEIS includes a discussion in Appendix G of use of regional demand management measures to reduce reliance on the Delta as a water supply source. See also Master Response 6 (Demand Management), Master Response 31 (Compliance with the Delta Reform Act), and Master Response 38 regarding the length of the documents.
2583	2	The Florin Resource Conservation District is also deeply concerned about the anticipated impairment of Delta water quality and the effects on upstream water agencies that could directly affect the Elk Grove Water District and the Sacramento Region. The water quality impacts in particular threaten aquatic habitat, municipal drinking water supplies, and	The potential for water conveyance operations to affect contaminants in the Delta (including Suisun Marsh) under existing conditions and future no action conditions, and with implementation of each project alternative (including conservation measures), is assessed in detail in Chapter 8, Water Quality, of the Final EIR/EIS. Where significant impacts to uses would occur due to the alternatives, mitigation to lessen those

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		farming operations in the Delta. It is obvious that this Project is intended to satisfy the thirst in the southern portions of the State at the detriment of the Delta and Northern California, and from a public policy standpoint, this is fundamentally wrong.	impacts is provided. See also Master Response 14 regarding water quality.
2583	3	Understandably, when the initial Draft Environmental Impact Report/Environmental Impact Statement (DEIR/EIS) was circulated, thousands of comments were made and these were mostly ignored. We expect thousands more to once again be submitted and this alone should send a clear signal that the Project is fatally flawed. Unfortunately, many agencies, such as the Florin Resource Conservation District, do not have the financial strength to dissect this entire document and to counter various technical claims made by its authors. In this regard, the comments tendered by the FRCD focus on obvious deficiencies; we are frightened by what we have not learned as many issues are clouded and obscured in the 8,971 pages, including its attachments and technical reports.	<p>The draft documents cover impacts to 14 natural communities and 8 land use types, 149 special-status wildlife and plant species, 11 covered fish species and 9 non-covered fish species. The analyses provide for describing impacts and proposed mitigation in an ever-changing and complex aquatic and unique land based plan area. The documents reflect seven years of collaboration, responses to requests for additional information, careful thought, accumulation of the latest scientific information, and thorough analyses needed to develop and conduct an environmental review of a project that impacts the Delta estuary and water supplies for millions of Californians. As such, these draft documents necessarily address numerous competing interests in the Delta and throughout the state. The size and complexity of these drafts reflect an unprecedented effort to analyze project alternatives under both state and federal laws for a habitat conservation plan along with 15 Alternatives. Please see Master Response 38 regarding the length and readability of the EIR/EIS, and Master Response 42 regarding public comments</p> <p>Since 2006, the proposed project has been developed based on sound science, data gathered from various agencies and experts over many years, input from agencies, stakeholders and independent scientists, and more than 600 public meetings, working group meetings and stakeholder briefings. All of the documents, studies, administrative drafts, and meeting materials—more than 3,000 documents—have been posted online since 2010 in an unprecedented commitment to public access and government transparency. Please see Master Response 41 and Chapter 32 of the Final EIR/EIS for more information about public involvement.</p> <p>Public comments submitted during the official public comment period and the previous comment period for the 2013 Public Draft EIR/EIS will be made available to the public upon the release of the Final EIR/EIS. The Final EIR/EIS will include all comments received during the official comment period and responses to substantive comments.</p>
2583	4	<p>The Delta Plan was prepared by the Delta Stewardship Council pursuant to the 2009 Delta Reform Act. This plan was adopted by the Council only two years ago and its fourteen policies are legally enforceable.</p> <p>The cornerstone of the Delta Plan is that any Delta solution going forward must meet "Co-equal Goals." The original DEIR/EIS for this project included means to improve habitat conservation, which now has been completely removed and designated as a separate project called California EcoRestore. This is unacceptable.</p> <p>Obviously, California WaterFix has been intentionally relieved of the burden of habitat restoration and this is a blatant attempt to simply ram the project through the requisite State and Federal permitting process. To ignore this fundamental building block of a Delta solution violates the State and Federal Government's credibility and instills distrust with anyone attempting to accept the findings of the RDEIR/SEIS.</p> <p>The Delta Plan Policy WR P1 also requires that a Delta solution be intended to reduce reliance on the Delta as a water source. California WaterFix, and specifically Alternative 4A in the RDEIR/SEIS, will actually do the opposite. The proposed Project is fundamentally intended to increase the reliability of Delta exports; therefore, it is obvious that the Delta exporters will become more reliant on these deliveries, not less.</p>	<p>The project's proposed dual conveyance facilities would allow water to be moved through the Delta when conditions permit, and allow water to be diverted from the Sacramento River in the northern Delta when conditions in the south Delta do not permit diversions from the existing State Water Project and Central Valley Project facilities. The location of the north Delta diversion facility is less vulnerable to salinity intrusion, a potential impact of sea level rise, or levee failure, in the future. By establishing an alternative diversion point for exports, a great deal of water management flexibility is added. This added flexibility would provide more options for adaptively managing the Delta so that conditions can be optimized to provide the greatest benefits across all Delta water uses and habitat conditions. Master Response 31 (Compliance with the Delta Reform Act) and Final EIR/EIS Appendices 3I and 3J for discussion of the proposed project's consistency with the Delta Reform Act.</p>
2583	5	Alternative 4A (preferred alternative) includes three intakes on the Sacramento River, two 40-foot tunnels approximately 35 miles long, modifications to the Clifton Court Forebay and	The proposed project as it is laid out in the RDEIR/SDEIS has the maximum capacity of moving 9,000 cfs of water from the Sacramento River. "Operations would be consistent with criteria set by the FWS (2008) and

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		<p>numerous other appurtenances. The stated diversion capacity of this Project is 9,000 cubic feet per second. However, it is our understanding that the tunnels are actually sized to divert 15,000 cubic feet per second. If this is true, this once again mars the credibility of the authors and this entire document.</p>	<p>NMFS (2009) BiOps and State Water Resources Control Board Water Right Decision 1641 (D-1641), subject to adjustments made pursuant to the adaptive management process as described in the 2008 and 2009 BiOps (RDEIR/SDEIS Executive Summary ES.2.2).” Detailed limitations and operational criteria can be found in DWR’s State Water Resources Control Board Permit D1641 and additional limitations described in the Federal Endangered Species Section 7 Biological Opinions and take permits.</p> <p>The following Hydraulic Parameters were used for Tunnel Sizing, in conjunction with the information provided in Sections 4 and 5 of the Conceptual Engineering Report dated October 1, 2013 (http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Conceptual_Engineering_Report-Modified_Pipeline_Tunnel_Option.sflb.ashx):</p> <ul style="list-style-type: none"> • Manning’s equation for friction head loss computations • Manning’s n-value = 0.0145 for tunnels • Tunnel Length of approximately 30 miles • Downstream Control is Clifton Court Forebay WS El. = 9 ft • Upstream Control is Intermediate Forebay WS El. = 20 ft • Assume additional minor losses are equivalent to friction losses based on 3% of Tunnel Length (i.e., Minor Headloss = H_f for $.03 * L$), this does not include other minor losses due to Exit and Entrance losses which must be included. • Gravity fed tunnels • Design Flow = 9,000 cfs
2583	6	<p>All analyses of alternatives (including 4A) fail to predict the impacts to water quality as it affects municipal drinking water supplies. This notably affects Sacramento County, East Bay Municipal Utilities District, and the City of Stockton. Impacts to water quality, notably higher salinity levels or increases in total organic carbons, have the potential to threaten the drinking water supply to well over a million California residents. Of course, this diversion of water may improve the water quality delivered to Southern California but may do so at the expense of Northern California. Again, this is bad public policy.</p>	<p>The lead agencies believe that the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS are complete in their evaluation of impacts (using the best available science and modeling), direct and cumulative, that project description is complete and satisfies the requirements of NEPA, and that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies believe that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS. Please see Master Response 14 for additional discussion regarding water quality.</p> <p>Section 4.3.4 (4A) of the RDEIR/SDEIS describes whether concentrations of various water quality constituents are expected to increase or decrease with the project, relative to existing conditions and the No Action Alternative. To the extent that concentrations of various water quality constituents are expected to increase, Section 4.3.4 describes whether these increases are expected to result in impacts to beneficial uses of water in the Delta. For constituents for which adverse impacts were expected, mitigation and other commitments, such as additional evaluation and modeling and consultation with water purveyors to identify additional measures to avoid and minimize or offset these impacts, were introduced to address those impacts.</p> <p>Additionally, adding intakes in the North Delta will allow for operational flexibility that can improve natural flow in the Delta and avoid impacts to migratory fish based on real time data and operations.</p>
2583	7	<p>The analysis of alternatives fail to predict the impact to water quality as it affects farming and other economic operations in the Delta. Increased salinity levels brought about due to the change in diversion location could negatively affect the crops grown in the Delta and</p>	<p>The potential for water conveyance operations to affect salinity conditions and beneficial uses (including agricultural uses) in the Delta (including Suisun Marsh) under existing conditions and future no action conditions, and with implementation of each project alternative (including conservation measures), is</p>

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		this would lead to significant economic harm and impact on the quality of life within the Delta.	assessed in detail in Chapter 8, Water Quality, of the Final EIR/EIS for the salinity-related parameters chloride (Impact WQ-7) and electrical conductivity (Impact WQ-11). Where significant impacts to water quality would occur due to the alternative, mitigation to lessen those impacts is provided. See Master Responses 14 and 18 for more information on water quality and agricultural impact mitigation, respectively.
2583	8	The analyses of alternatives fail to adequately predict fishery impacts, including those to winter-run salmon in the Sacramento River. This Project is certain to cause elevations in salinity, temperature, and turbidity in sections of the Sacramento River, and the Delta, resulting in migrational and spawning interference, and general destruction of aquatic habitat. It should be noted that the modelling used to support the RDEIR/SEIS tends to indicate that these problems will not occur, however this modelling is flawed.	Please see Appendix 5A of the Final EIR/EIS for information on limitations of the physical modeling tools used in this analysis. Regardless of their limitations, these models were developed by fisheries biologists and hydrodynamic modeling experts using the best available science at the time, and were deemed sufficient to make comparisons across project alternatives.
2584	1	It is unfortunate that the length of this document and BDCP are prohibitive for the public to adequately review and provide comments within the established timeframe. It is impossible for a citizen to adequately read through such voluminous text and analysis with the ability to give thorough critical feedback within the allocated review period.	The proposed project and the draft BDCD are very complex. The Lead Agencies have attempted to present the analysis in the EIR/EIS in a clear format with an emphasis on information that is useful to the public, agencies, and decision makers. Recognizing the length and complexity of the Draft EIR/EIS, the Lead Agencies took steps to make the information accessible and understandable. The Lead Agencies posted online documents highlighting important aspects of the BDCP and the EIR/EIS. They produced 17 narrated informational webinar episodes regarding the BDCP and EIR/EIS that were available online, and they distributed factsheets throughout the comment period. In addition, both the BDCP and EIR/EIS contain executive summaries, and the most complex EIR/EIS chapters contain reader guides. For the RDEIR/SDEIS, the Lead Agencies provided a summary of revisions. For more information regarding document length, see Master Response 38. For a discussion of the public comment period, see Master Response 39.
2584	2	As expressed in previous comments on the BDCP the document provides little evidence that the new alternatives will provide a long-term solution to address water consumption and environmental needs. Specifically, the proposed actions further the short-sighted nature of public policy and environmental management dating back to the beginning of the State of California. The plan fails to address the fact that California's water infrastructure is decrepit and vulnerable due to poor policy and land use decisions (e.g., subsidence in the San Joaquin Valley has compromised SWP and CVP canals).	<p>Please note that the BDCP is no longer the preferred alternative. The preferred alternative is now Alternative 4A and no longer includes an HCP. Alternative 4A has been developed in response to public and agency input. The EIR/EIS analyzes all alternatives.</p> <p>Comments made on the 2013 DEIR/DEIS are addressed in the Final EIR/EIS as required by CEQA and NEPA.</p> <p>The project is just one element of the state's long-range strategy to meet anticipated future water needs of Californians in the face of expanding population and the expected effects of climate change. The project is not a comprehensive, statewide water plan, but is instead aimed at addressing many complex and long-standing issues related to the operations of the SWP and CVP in the Delta, including reliability of exported supplies. It is important to note that the project is not intended to serve as a state-wide solution to all of California's water problems, and it is not an attempt to address directly the need for continued investment by the State and other public agencies in conservation, storage, recycling, desalination, treatment of contaminated aquifers, or other measures to expand supply and storage.</p>
2584	3	Construction of the proposed tunnels will sell short the opportunities for a real solution to balancing water and environmental concerns in the Delta, and will rob future generations the right to inherit a world in as good or better condition than nature intended. Where are the real solutions that seek to meet sustainable demands on water through water recycling, building design focused on rainwater capture, smart land use planning, arid agricultural land retirement, water policy reform, and ecological restoration focused on intervention actions? While politically these may not be popular, one thing we have seen through the current drought is a willingness to be innovative beyond a mentality that California's water supply is linked solely to an outdated Central Valley Project and State Water Project concept. The document and BDCP fail to recognize the holistic view of the Delta beginning at the sources, which feed into it. The Delta is part of a landscape from summit to sea, and the problems	<p>The Natural Resources Agency and DWR staff will continue seeking improvements and refinements to the current proposal in order to enhance species benefits and to avoid, reduce or mitigate for negative impacts to people, communities, sensitive species and habitats.</p> <p>The California Water Action Plan recognizes that all Californians have a stake in the future of our state's water resources, and that a series of actions are needed to comprehensively address the water issues before us. The five-year agenda spells out a suite of actions in California to improve the reliability and resiliency of water resources and to restore habitat and species -- all amid the uncertainty of drought and climate change. For more information regarding future developments of the California Action Water Plan please follow http://resources.ca.gov/docs/Final_Water_Action_Plan_Press_Release_1-27-14.pdf. Future committees for the Proposed Project implementation may provide future opportunities for innovative input as well.</p>

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		within the Delta are not exclusive to its legal boundary.	<p>The California Water Plan evaluates different combinations of regional and statewide resources management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. Follow the California Water Plan here: http://www.waterplan.water.ca.gov/.</p> <p>Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1, EIR/EIS, describes the range of conveyance alternatives considered in the development of the EIR/EIS. Appendix 1B, Water Storage, EIR/EIS, describes the potential for additional water storage and Appendix 1C, Demand Management Measures, EIR/EIS, describes conservation, water use efficiency, and other sources of water supply including desalination. While these elements are not proposed as part of the proposed project, the Lead Agencies recognize that they are important tools in managing California’s water resources.</p> <p>Please see Master Response 4 regarding the selection of alternatives analyzed, Master Response 7 regarding desalination, Master Response 5 regarding demand management and Master Response 37 regarding water storage.</p> <p>Chapter 30, Section 30.1.3, Urban Land Use and Water Use by Hydrologic Region, 2013 Public Draft EIR/EIS, describes long-term water demand in the hydrologic regions based on projections from the California Water Plan. The chapter goes on to compare the modeled changes in deliveries associated with alternatives to the projected changes in future demand in order to evaluate the potential for the proposed project implementation to remove obstacles to growth. The proposed project does not propose any change to storage or conveyance capacity of facilities outside of the Plan Area. Thus, water diverted from new north Delta facilities would find its way into existing facilities.</p> <p>For more information regarding demand management please see Master Response 6.</p>
2584	4	1-3 It is alarming that such a limited proportion of the state's population provided comments given the significance of the project to the people and environment.	Please refer to Chapter 32 of the Final EIR/EIS and Master Response 40 for information regarding outreach conducted for California WaterFix (and previously the BDCP). More information on how DWR has developed the project in an open and transparent manner is provided in Master Response 41.
2584	5	1-4 NMFS and USFWS also need to uphold their Trust responsibilities to Tribes pursuant to PL-93-638. Furthermore, there is no mention of PL 93-638 and other trust responsibilities for federal agencies. Further there is no discussion of CDFG Code 16000, which supports Tribal interests in Trust resources.	<p>DWR is continuing dialog and consultation with Native American Tribes and individuals in the Plan Area to help identify concerns and resources and to identify sensitive resources that may be impacted as a result of the project.</p> <p>DWR has hosted meetings with the tribal community throughout the Plan Area, and consultation is ongoing. DWR continued outreach to the Tribes to assess interest and provide updates on the proposed project changes. DWR has also begun 1:1 dialogue with the interested tribes and has solicited input from Tribes on the consultation process, including the potential development of a Tribal Advisory Working Group for the proposed project. Currently, information from Tribes is being gathered and will be used to guide future meetings and work with the tribal community. In addition, a Programmatic Agreement has been drafted by the USACE as part of the Section 106 process for undertakings related to the proposed project. Input from the Tribes are considered during review and consultation of the draft documents.</p> <p>Please see Master Response 21 for more information regarding Tribal issues.</p>
2584	6	1-7 In no way is a created system that is by no means complementary to nature's design sustainable.	No issues related to the adequacy of the environmental impact analysis in the EIR/S were raised.
2584	7	1-10 Delta Ecosystem Health and Productivity. Herein lies the problem. The ecosystem cannot exist without a dynamic system. And under this plan there is no intent to restore	This comment is on the statement of need for the project that describes the Delta health and ecosystem productivity changes. The EIR/EIS provides an overview description of the changes made to the current CEQA and NEPA preferred alternative (Alternative 4A) in Chapter 1, Introduction. This section indicates

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		anything, but where is that stated?	that much of the restoration that had been proposed under the Draft EIR/EIS preferred alternative (Alternative 4) would now be pursued as part of a separate, but related restoration program, California EcoRestore. This change was made because of the revised ESA regulatory approach for Alternative 4A and because of the State's desire to continue to pursue Delta ecosystem restoration as part of the California Water Action Plan.
2584	8	1-11 In acknowledging the influx of sea water, how will locating the tunnels in their planned location alleviate this, and what will further sea level rise (realistically, not to what is modeled here) do to exacerbate this?	The proposed project would decrease total exports of SWP and CVP water as compared to Existing Conditions and No Action Alternative in the summer and early fall months and in drier years when the effects of sea level rise are the greatest; and increase exports in the wet winter months in wetter years when the river flows are high and the effects of sea level rise are the least. The water would be stored at locations south of the Delta during the high flow periods to allow reductions in deliveries to SWP and CVP water users in drier periods. The SWP and CVP operations would continue to meet the Delta water quality requirements established by the State Water Resources Control Board, as provided for in the CALSIM II model runs.
2584	9	1-13 The Endangered Species Act also states that federal agencies should use their authority to recover species. How is Bureau of Reclamation contributing to recovery when they are operating a system that runs counter to nature?	As indicated in Chapter 2, Project Objectives and Purpose and Need, the California WaterFix would make physical and operational improvements to the system to restore and protect ecosystem health, water supplies of the SWP and CVP south of the Delta and water quality within a stable regulatory framework, consistent with statutory and contractual obligations. The California WaterFix would help restore and protect ecosystem health, in part by restoring more natural delta flows and providing operational flexibility during times when operating the current pumping system could potentially effect fish species.
2584	10	1-35 Additional Discussion of Climate Change. It is important to note that the assumptions do not adequately account for sea level rise and other attributes of climate change. The plan does nothing to consider how to make the Delta resilient to climate change. In pre-European times the Delta was dynamic and resilient. It has undergone sea level rise until levees were built.	Please refer to section 29.6.1.1 of the Final EIR/EIS and Master Response 19.
2584	11	2-14 Continued reliance on water from the Delta without significant and meaningful restoration to resiliency regardless of the alternative will continue to strain the ecosystem. The human-caused adverse changes to the Delta and contributing watersheds that will perpetuate as a direct, indirect and cumulative impact are thus not less than significant.	The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS. Although Alternatives 4A, 2D, and 5A include only those habitat restoration measures needed to provide mitigation for specific regulatory compliance purposes, habitat restoration is still recognized as a critical component of the state's long-term plans for the Delta. Such larger endeavors, however, will likely be implemented over time under actions separate and apart from these alternatives. The primary parallel habitat restoration program is called California EcoRestore (EcoRestore), which will be overseen by the California Resources Agency and implemented under the California Water Action Plan. Under EcoRestore, the state will pursue restoration of more than 30,000 acres of fish and wildlife habitat by 2020. These habitat restoration actions will be implemented faster and more reliably by separating them from the water conveyance facility implementation.
2584	12	2-17 In consideration of emissions, where is the analysis of the growth inducing impacts associated with conveyance of Delta waters. Really the analysis here is global in scope considering the export of commodities.	Air quality associated impacts of new growth and development in SWP and CVP Export Service Areas are addressed in Chapter 30. Please refer to Chapter 30 for additional information.
2584	13	3-2 Construction of pumping facilities and other modifications to Clifton Court Forebay. It is highly likely any proposed actions in this area will impact traditional cultural properties. Certainly the areas identified for the pumping plant have been used for collection of cultural resources used to make baskets and regalia as well as other cultural purposes. Amongst some of the resources known to be collected from this area are yellow willow, sandbar willow, stinging nettle, creeping wild rye, California hibiscus, dogbane, and many others. As such, the use of this area for this purpose designates it a traditional cultural property. Additionally, numerous species of culturally important fish and wildlife are known from this	The commenter's opinion related to the DEIR/S is acknowledged. This comment regarding Section 106 consultation was addressed in the Recirculated DEIR/S through the addition of Section 18.2.1.3, which provides information on Section 106 consultation and development of a Programmatic Agreement as part of a phased approach to identifying cultural resources. Sensitivity assessments also address impacts to unknown (or unevaluated) cultural resources. For additional information about Native American outreach efforts, including identification and analysis of impacts on archaeological sites, Traditional Cultural Properties, and cultural significance of biological resources, please see Master Response 21.

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		<p>area. The document and BDCP fail to adequately address the specific impacts to these species of cultural significance not limited to the areas near Clifton Court Fore bay. Impacts to these areas would adversely affect the traditional cultural property. Pursuant to PL-93-638 BORis required to uphold its Tribal trust responsibilities.</p> <p>Where and what is the footprint of this site on Granville Tract?</p>	
2584	14	Figure 3.2-1 What are the power sources? This project should include development of its own sustainable power. Elsewhere solar panels have been placed over canals to provide power while also minimizing evaporation. Clearly this should be considered here.	The additional energy needed for Delta conveyance of water would be obtained by SWP as part of their normal energy operations, as described in Chapter 21. As shown in Table 21-13, of the FEIR/FEIS, the additional energy needed for Alternative 4A would be less than 1% of the energy needed to pump and deliver water to south-of-Delta CVP and SWP contractors. Alternative energy sources would be considered in future energy studies.
2584	15	3-9 Cultural resources does not address traditional cultural properties or traditional cultural landscapes. It is recommended that the project proponents provide funding to appropriate traditional cultural practitioners of this region to complete a study of these features.	The commenter's opinion related to the DEIR/S is acknowledged. For additional information about Native American outreach efforts, including identification and analysis of impacts on archaeological sites, Traditional Cultural Properties, and cultural significance of biological resources, please see Master Response 21.
2584	16	4.1-1 The reduction in mitigation is not providing any benefits to the functions and services the Delta provides. This seems to be cutting corners to get the tunnels built while punting the issue of fish, wildlife and plants off to another plan. Any lands set aside for mitigation should be placed in trust to a Tribal organization whose members have ancestral ties to the Delta.	Although Alternatives 4A, 2D, and 5A include only those habitat restoration measures needed to provide mitigation for specific regulatory compliance purposes, habitat restoration is still recognized as a critical component of the state's long-term plans for the Delta. Such larger endeavors, however, will likely be implemented over time under actions separate and apart from these alternatives. The primary parallel habitat restoration program is called California EcoRestore (EcoRestore), which will be overseen by the California Resources Agency and implemented under the California Water Action Plan. Under EcoRestore, the state will pursue restoration of more than 30,000 acres of fish and wildlife habitat by 2020. These habitat restoration actions will be implemented faster and more reliably by separating them from the water conveyance facility implementation.
2584	17	<p>4.1-2 The intakes are still located within the current range of tidal flux and seawater intrusion. The plan only accounts for a conservative model for sea-level rise and subsequent seawater intrusion. How is this solving any water problem? The models should use the worst case scenario. Further, the planning is short-sighted with respect to the time period of analysis. The CVP has existed for longer than this plan is considering. Removing restoration from this plan and deferring to California EcoRestore is piecemeal. California EcoRestore is not adding much new to the region that does not already exist. Many of these areas are already protected, and the agencies managing them have</p> <p>limited success in fulfilling their Trust obligations to restore these lands and fund management thereof. California EcoRestore proposes only 30,000 acres of restoration/enhancement whereas BDCP initially proposed approximately 65,000 acres. Less is not more for a functional ecosystem.</p>	The proposed north Delta diversion facilities would provide operational flexibility in the current SWP system that would allow exports to continue when biological or water quality conditions in the south Delta would restrict operating the current system. The climate change methodology for the CALSIM II modeling are documented in Appendix 5A and include an appropriate range of sea-level rise assumptions. The proposed conveyance facility operational criteria would improve more natural flow regime in the Sacramento River that would improve conditions for native fish species. Additional habitat benefits will result from implementing the separate EcoRestore Program and other action included in the California Water Action Plan.
2584	18	4.1-5 How is it that an Habitat Conservation Plan is not required under the new alternatives, but is necessary under the other alternatives? This needs to be explained.	As indicated in Section 1 of the RDEIR/SDEIS and Chapter 1, Introduction of the EIR/EIS, Alternatives 4A, 2D and 5A are defined as requiring a different regulatory approach under Section 7 of the ESA. The aim of these alternatives is to avoid jeopardizing the continued existence of listed species and avoiding adverse effects on critical habitat. The aim for the alternatives that include an HCP/NCCP is to contribute to recovery of covered species. Thus, the new RDEIR/SDEIS alternatives aim would be to avoid impacts to listed species versus the higher standard under an HCP/NCCP to contribute to recovering covered species.

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2584	19	4.1 -7 (Table 4.1-2) While cubic feet per second is good for understanding hydrology and fisheries needs, the layperson would benefit from knowing what percent of flow and what the equivalent acre feet allocation would be under these scenarios.	The table referred to in this comment includes the capacity assumptions for the Delta intakes. The assumptions for the Proposed Project and the action alternatives do not include specific allocations for any water users. The water deliveries are calculated using the CALSIM II model using assumptions related to existing federal and state regulatory requirements (such as SWRCB Decision 1641 and other water rights criteria) and proposed regulatory requirements (such as North Delta Bypass Flows that would require a percentage of flow to remain in the Sacramento River downstream of the north Delta diversions as described in Chapter 3 of the EIR/EIS). The amount of SWP and CVP water deliveries that would occur under each action alternative as compared to the Existing Conditions and No Action Alternative are presented in Chapter 5 and Appendix 5A, Section C, of the EIR/EIS.
2584	20	4.1-15 Deferring the conservation actions to other requirements and initiatives described is piecemeal.	For more information regarding piecemealing and segmentation please see Master Response 8.
2584	21	4.1-20 Do not burden existing resources with the responsibility to monitor the outcomes of this project. Funding to monitor and manage in perpetuity needs to be provided by the project proponents through other sources. Who would be involved in collaborative science. The term suggests only like-minded individuals and organizations would be involved.	The collaborative science and adaptive management approach is presented in this Final EIR/EIS and the California WaterFix Biological Assessment indicate that collaborative science would be undertaken by managers and scientists from DWR, Reclamation, public water agencies, CDFW, NMFS, and USFWS.
2584	22	4.1-38 The list of species is too limited, and this was a problem in the BDCP too. Where is the consideration of species impacted via direct, indirect and cumulative impacts. The list of species impacted by the CVP is more comprehensive.	The commenter states the list of species considered is too limited and refers specifically to page 4.1-38 of the RDEIR/SDEIS. The table that starts on this page is Table 4.1-8. Terrestrial Biology Resource Restoration and Protection Principles for Implementing Environmental Commitments, which lists further guidelines for implementing the environmental commitments (in the context of the Draft BDCP, these were often characterized as biological goals and objectives) and is not intended as a list of all species addressed in the EIR/EIS. A list of species addressed in the EIR/EIS can be found in Section 12.1.3 Special Status Species. No change to the EIR/EIS is necessary based on this comment.
2584	23	4.2-12 Effects on sea level change Section 6.3.1.1 could not be found.	Section 6.3.1.1 of the 2013 DEIR/EIS (from Chapter 6 – Surface Water) provides an overview of the quantitative analysis of surface water resources and discussed the difference between methods used to analyze changes due to implementation of alternatives versus changes due to sea level rise and climate change. This section is not included in the 2015 RDEIR/SDEIS because no changes or updates were made from the 2013 DEIR/EIS.
2584	24	<p>Fig 28-1 Percent minority. This map illustrates census block data. Further analysis needs to be completed to document how the proposed alternatives impact this landscape from a Native American perspective. The point is that California lacks treaties ceding this land, waters and "resources" to the Federal, state and local governments. Thus, these lands are all within Tribal jurisdiction, and as such this project poses a significant environmental justice issue. In fact, this is a traditional cultural landscape, which has yet to be analyzed by the project proponents. In review of Fig 4.1 -1 there are several areas of impacts identified for tunnel material placement or forebays, which are culturally significant or have culturally significant properties.</p> <p>As a Miwko (Plains Miwok) traditional cultural practitioner, the proposed project, regardless of alternatives selected is offensive to the environment, culture and metaphysical attributes of this region, which I still uphold the responsibility to steward. In light of this I ran a scenario to evaluate the effects of the overarching intents of the proposed action to assess impacts to the environment, cultural wellbeing, social wellbeing, and economic wellbeing of this region using the Mauri-o-meter</p> <p>http://mauriometer.com/; the output of this model suggests the construction of the associated infrastructure and restoration actions will continue to negatively impact the four</p>	The commenter's opinion related to the DEIR/S is acknowledged. For additional information about Native American outreach efforts, including identification and analysis of impacts on archaeological sites, Traditional Cultural Properties, and cultural significance of biological resources, please see Master Response 21.

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		parameters described. Thus, in no way will any of the proposed alternatives lead to a better Delta for future generations to enjoy. However, I am currently working with the California Indian Water Commission and others to develop alternative models for a resilient Delta and water solutions, and hope the project proponents would be open to additional project alternatives that may come from this initiative.	
2585	1	<p>The Project Is Inconsistent With the Delta Reform Act:</p> <p>The Delta Reform Act of 2009 established the co-equal goals of water supply reliability and ecosystem restoration and conditioned their achievement on protection and enhancement of Delta resources to include agriculture. Section 29702 (a) states that "The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resources and agricultural values of the Delta as an evolving place." The Delta Reform act also created the Delta Stewardship Council and directed it to develop the Delta Plan. Chapter 5 of the</p> <p>Delta Plan establishes policies and goals to protect Delta agricultural resources (Delta Plan: Pages 183 and 192-198).</p>	Please refer to Master Response 24, Delta as a Place, for additional details regarding the California WaterFix and Master Response 31, compliance with applicable Delta Reform Act requirements.
2585	2	<p>The Delta Reform Act of 2009, as explained in Water Code [Section] 85021, requires that reliance on the Delta in meeting California's future water needs be reduced. Because this is very large infrastructure project, it is reasonable to assume that if it is built, it would operate in the future. Therefore, the WaterFix should demonstrate that it reduces reliance on the Delta through strategies such as regional self-reliance, local and regional water supply projects, and other strategies; however, none of these are discussed in the preferred Alternative 4A. On the contrary, the WaterFix seems to increase rather than reduce dependence on the Delta as a source of future water. The document fails to address the operational concerns of those within the Delta and offers no concrete operational criteria that is consistent with prevailing California water law and issues of priority. We must see a determination of consistency for every implicated water law and policy consideration. "Adaptive management" for future determination is not sufficient to provide interested parties with enough facts regarding the impacts to flow and water quality to make informed comments.</p>	<p>In accordance with the Project Objectives and Purpose and Need (see Chapter 2 of the EIR/S), all of the action alternatives would continue the operation of the SWP and CVP in accordance with the existing water rights and regulatory criteria adopted by the State Water Resources Control Board, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife. All of the alternatives evaluated in the EIR/EIS would only divert water under existing water rights which were issued to DWR and Reclamation by the State Water Board with consideration for senior water rights and Area of Origin laws and requirements. The proposed project does not seek any new water rights nor reduction in total water rights issued to DWR and Reclamation.</p> <p>Under the range of alternatives considered in the EIR/S full contract amounts are not delivered in the majority of times to the SWP and CVP water contractors, as presented in Appendix 5A, Section C, CALSIM II and DSM2 Model Results, of the EIR/EIS. Long-term water deliveries to SWP and CVP water contractors located south of the Delta are lower under Alternatives 6, 7, and 8 as compared to the Existing Conditions and the No Action Alternative. The EIR/S and the Draft BDCP were prepared in a manner to comply with the 2009 Delta Reform Act, as described in Appendix 3I, BDCP Compliance with the 2009 Delta Reform Act, of the Final EIR/EIS.</p> <p>Please also refer to Master Response 31 for additional discussion of compliance with the Delta Reform Act.</p>
2585	3	<p>Unmitigated Loss of Agricultural Land:</p> <p>The construction and operation of the project will remove an untold amount of prime farmland from production within the statutory Delta. The San Joaquin County General Plan recognizes the importance of both protecting the Delta and the importance of preserving agricultural land, and county code strictly enforces 1:1 mitigation for the loss of agricultural land. The mitigation strategy identified in Alternative 4A is to develop an Agricultural Land Stewardship Plan (ALSP). The ALSP mitigation is inadequate because it is not defined, and therefore, is not feasible. It is not enforceable nor is it funded. Mitigation as proposed in the RDEIR that is discretionary, deferred, unfunded, not enforceable, ungoverned or where feasibility has not been determined, is per se inadequate.</p>	<p>Please refer to Chapter 14, which discusses specific estimates of the effects of the alternatives on important farmland, agricultural preserves, farm operations, agricultural production and water quality, among other issues. Please also refer to Master Response 18, which discusses agricultural impacts and how mitigation would be approached in more detail is</p> <p>Mitigation Measure AG-1 (Develop an Agricultural Lands Stewardship Plan (ALSP) to Maintain Agricultural Productivity and Mitigate for Loss of Important Farmland and Land Subject to Williamson Act Contracts or in Farmland Security Zones) is a 3-part mitigation measure. The first part of this mitigation measure (i.e., Promote Agricultural Productivity of Important Farmland) addresses actions that would be taken to maintain agricultural productivity of the sites involved. Mitigation Measure AG-1c (Consideration of an Optional Agricultural Land Stewardship Approach or Conventional Mitigation Approach), which the commenter is referring to, represents a mitigation approach that would be implemented to mitigate impacts that cannot</p>

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			<p>be otherwise mitigated by Mitigation Measure AG-1a or Mitigation Measure AG-1b.</p> <p>Mitigation Measure AG-1c requires that either a “Conventional Mitigation Approach” or an “Optional Agricultural Land Stewardship Approach” be implemented. The conventional approach involves the purchase of interests in agricultural land that would require the preservation and/or enhancement of land of similar agricultural quality to the land being lost to agricultural uses under the BDCP actions, which would help maintain agricultural productivity.</p> <p>The proposed Optional Agricultural Land Stewardship Approach does not focus principally on physical effects, but on maintaining agriculture and economic viability in the Delta, taking into consideration the desire of individual Delta farmers to continue working on their land, the long-term viability of regional agricultural economies, the economic health of local governments and special districts, and the Delta as an evolving place. It is not stated that the optional Agricultural Land Stewardship will or must “provide for production of food and fiber”. It is noted, however, that where Mitigation Measures AG-1a and AG-1b are not sufficient to mitigate to a less than significant or adverse level the impacts from the conversion of Important Farmland or of land subject to Williamson Act contracts or in Farmland Security Zones, the project managers will consult with all of the following (i) the County in which the affected property is located; (ii) the owner(s) and/or operator(s) of said property; (iii) the California Natural Resources Agency; (iv) the California Department of Water Resources; (v) the Central Valley Flood Protection Board; (vi) the California Department of Conservation; (vii) the California Department of Food and Agriculture; (viii) the California Department of Fish and Wildlife; (ix) the Delta Stewardship Council; (x) the California Delta Protection Commission; and (xi) the Delta Conservancy; (xii) the United States Fish and Wildlife Service; (xiii) the National Marine Fisheries Service; and (xiv) the U.S. Department of Agriculture, including the Natural Resources Conservation Service. Where the entities listed in “i” and “ii” above have a preference for participating in an optional ALSP, the BDCP proponents shall attempt to develop one acceptable to the County, the land owner and/or operator, CDFW, USFWS, and NMFS. The optional ALSP would seek opportunities to protect and enhance agriculture in the Delta as part of the project landscape and focus on maintaining economic activity on agricultural lands instead or in conjunction with the Conventional Mitigation Approach for purposes of CEQA/NEPA mitigation.</p> <p>Appendix 14B Delta Agricultural Stewardship Strategies discusses implementation mechanisms of the ALSP. Mitigation Option 2 includes the Conventional Mitigation Option, which incorporates the potential use of Agricultural Conservation Easements (ACEs) as mitigation. Please also refer to Master Response 18, which discusses in more detail agricultural impacts and how mitigation would be approached.</p> <p>Please also refer to Master Response 22 for further discussion regarding adequacy of mitigation under CEQA.</p>
2585	4	<p>We [San Joaquin Farm Bureau Federation] are concerned that before comments have been closed on Alternative 4A, the state has moved forward in seeking a permit from the Army Corps of Engineers to store the "reusable tunnel material" without identifying the impacts that will have on the land, soil quality, or possible degradation of water quality.</p>	<p>Potential environmental effects of Reusable Tunnel Material use are addressed in Appendix 3B of the FEIR/EIS. Additionally, the project proponents will consult relevant parties, such as landowners, reclamation districts, flood protection agencies, federal and state agencies with jurisdiction in the Delta, and counties, in developing such site-specific spoil, RTM, and dredged material reuse plans. Where project proponents determine that it is appropriate that materials be used to prepare land at elevations suitable for project-related restoration or protection of habitat, the project proponents will coordinate with the project Implementation Office in developing site-specific plans for transporting and applying the materials to restoration work sites. Please refer to Master Response 12 (Reusable Tunnel Material) for additional information.</p> <p>In addition to the permitting that has already begun and will continue through the planning process, the project proponents will be responsible for overseeing the current and future permit efforts. DWR will be responsible for obtaining the permits and approvals necessary for construction of the conveyance facilities.</p>

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			Please also refer to Master Response 45, Permitting.
2585	5	<p>The Degradation of Water Quality Will Lead To Agricultural Losses Within The Delta:</p> <p>The Delta relies on two rivers, the Sacramento River and the San Joaquin River, to supply the fresh water necessary to repel salt intrusion into the vast agricultural landscape. The intake on the Sacramento River that will divert fresh water into an isolated conveyance system will undoubtedly affect the salinity of the Delta and lead to significant downstream water quality impacts. This impact is not adequately analyzed with respect to its effect on agricultural resources.</p>	<p>The Proposed Project proposes to stabilize water supplies, and exports could only increase under certain circumstances in which hydrological conditions result in availability of sufficient water and ecological objectives are fully satisfied. It is projected that water deliveries from the federal and state water projects under the Proposed Project would be about the same as the average annual amount of water that would be diverted under the No Action Alternative (i.e., 2025 conditions without the Proposed Project). It is projected that Delta exports from the federal and state water projects would either remain similar or increase in wetter years and decrease in drier years under Alternative 4A as compared to exports under No Action Alternative (ELT) depending on the capability to divert water at the north Delta intakes during winter and spring months.</p> <p>Please refer also to Master Response 14 for additional discussion regarding potential water quality impacts.</p>
2585	6	<p>We [San Joaquin Farm Bureau Federation] are concerned that construction impacts are considered "short-term impacts" for which the RDEIR offers no mitigation. The construction of a project of this size will undoubtedly be a lengthy process and the impacts of the short-term construction will lead to long-term impacts on Delta agriculture, particularly where water quality is concerned. The construction impacts of the WaterFix remain unmitigated and will have lasting impacts on Delta farms.</p>	<p>Please refer to Master Response 18 for additional discussion regarding agricultural impacts and proposed mitigation approaches.</p> <p>The temporary change in use of important farmland during construction activities would prevent cultivation of the affected land for the duration of the construction, and thus cause economic effects for that limited time. The affected landowners would be reimbursed for any fee title or other property interests acquired by a public entity during the course of preparing for construction and other siting activities. However, after temporary construction is completed, the soil resource would be restored to preconstruction quality and farmable condition. However, if circumstances limit the ability to restore the land and full restoration is not possible, additional mitigation for the resource impact would occur.</p>
2585	7	<p>In San Joaquin County, agriculture is a \$3 billion industry that strengthens our community by providing employment and a reliable tax base. Farms in the Delta are among some of the oldest in the area, with many families that have been on the land for more than five generations. Over the last two decades, as water exports from the Delta have increased, our farmers have been left with unfulfilled promises of water quality standards that are routinely violated that have led to increased salinity in the water and ever-increasing salt buildup in some of the most productive soil in the world. The San Joaquin Farm Bureau sincerely believes that California has a significant water supply deficit, not a conveyance issue. The historical policies that just move water to one area of the state at the expense of another are not sustainable over the long term and do nothing to address the deficiency of overall water supply. There are better, more affordable projects to enhance the available water supply in California such as north of the Delta fresh water storage projects and desalination that enhances regional self-reliance. Neither of these key elements is included in the RDEIR for the California WaterFix. The San Joaquin Farm Bureau Federation remains committed to protecting the family farms in the Delta and will continue to advocate that any project in the Delta is in accordance with the Delta Reform Act of 2009.</p>	<p>No issues related to the adequacy of the environmental impact analysis in the 2015 REIR/SDEIS or the 2013 DEIR/DEIS were raised. However, the EIR/S modeling results for the No Action Alternative indicate that, with or without the project, rising sea levels will bring saline tidal water further into the Delta than occurs at present.</p>
2585	8	<p>[Delta Caucus's] prior comments focused on the tremendous damage that the BDCP would inflict on Delta agriculture. The revised alternative 4 described in the Recirculated Draft makes minor changes to the BDCP preferred alternative 4 but does not result in any significant reduction in negative impacts to Delta agriculture. The new alternatives 4A, 2D, and 5A eliminate negative impacts to Delta agriculture associated with the conversion of and restrictions on Delta agricultural caused by implementation of BDCP Conservation Measures 2-21. However, new alternatives 4A, 2D, and 5A will still inflict substantial negative impacts on Delta agricultural resources.</p>	<p>For the project's agricultural impacts and proposed mitigation, please refer to Chapter 14 of the Final EIR and of the RDEIR/SDEIS Appendix A (Agricultural Resources) and Master Response 18 (Agriculture Impact Mitigation).</p>

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2585	9	<p>Consistency with laws and regulations protecting Delta agricultural resources:</p> <p>New alternatives described in the RDEIR remain inconsistent with County General Plans, the Land and Resource Management Plan and the Delta Economic Sustainability Plan of the Delta Protection Commission and with the Delta Stewardship Council's Delta Plan.</p> <p>The Delta Reform Act, [Section] 29702 states that "The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resources and agriculture as an evolving place." The new alternatives described in the RDEIR not only do not achieve the co-equal goals as defined in the Delta Reform Act of 2009, but also do major damage to agricultural resources of the Delta by:</p> <ol style="list-style-type: none"> 1. converting agricultural lands to industrial uses; 2. disrupting agricultural operations during construction; 3. damaging agricultural infrastructure; 4. and changing flow patterns downstream of diversion sites. <p>The California WaterFix and the new alternatives 4A, 2D and 5A will violate plans and laws enacted to protect agricultural resources in the Delta.</p>	<p>Please refer to Master Response 24, Delta as a Place, for additional details regarding the California WaterFix and to Master Response 31 regarding compliance with applicable Delta Reform Act requirements.</p>
2585	10	<p>As pointed out on page 11 of the California Department of Water Resources (DWR) permit (33 C.P.R. 325) application to the Army Corps of Engineer submitted on August 24, 2015, "Changes in water inflow and outflow throughout the Delta affect the water quality within the Delta, particularly with regard to salinity. It has been estimated that seawater is pushing 3 to 15 miles farther inland since development began in the Delta over 159 years ago (Contra Costa Water District 6 2010)." Figure 7b of the Delta Vision Report details a steep decline in Delta outflow from 81% of unimpaired flow during 1930-1949 to 48% of unimpaired flow during 1990-2005. During the same time period State Water Project (SWP) and Central Valley Project (CVP) exports (not including Contra Costa Water District diversions) went from 0 to 17% of unimpaired flow and in-Delta watershed diversions (before reaching the Delta) increased from 14% to 31% (some of these are exported from the Delta watershed). It is not surprising that water quality in the Delta and the San Francisco Bay has been severely impacted.</p>	<p>No issues related to the adequacy of the environmental impact analysis in the 2015 RDEIR/SDEIS were raised.</p>
2585	11	<p>The importance of protecting water quality in the Delta has resulted in plans, decisions and contracts establishing water quality and flow standards. The SWP and CVP are responsible for achieving both flow and salinity standards. DWR is responsible for maintaining standards of the North Delta Water Agency Contract. Implementation of the preferred alternative 4, as described in the Draft BDCP, would result in reduced Delta outflow, increased seawater intrusion and frequent violations of water quality standards as described in the United States Environmental Protection Commission comment letter dated August 26, 2015.</p>	<p>Regardless of the proposed project, DWR will continue to meet its contractual obligations. Please note the SWP and CVP are required to meet D1641 standards.</p> <p>For a discussion on the project's purpose and need, please see Master Response 3.</p> <p>Please see Master Response 14, Water Quality, and Master Response 32, Water Rights.</p> <p>Also see Appendix 29A, BDCP, Effects of Sea Level Rise on Delta Tidal Flows and Salinity, containing a summary of modeling analyses of Delta tidal flows and salinity conditions. These analyses used the 2-D RMA Bay-Delta and the 3-D UnTRIM Bay-Delta tidal hydrodynamic models to simulate and evaluate the effects of projected climate change of sea level rise on Bay-Delta tidal flows and salinity intrusion, thereby analyzing the effects of a potentially deeper estuary in which a greater amount of seawater intrusion occurs.</p>

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2585	12	The Delta Water Fix RDEIR claims that water quality impacts have been reduced to less than significant by removing Conservation Measures 2-21 even though it is expected that some of the restoration and conservation activities will still occur under California EcoRestore and by making other adjustments to the models which were used for the BDCP. As pointed out in comments submitted by MBK Engineers and Dan Steiner, the BDCP model provides "very limited useful information to understand the effects of the BDCP." The modeling used in the California WaterFix RDEIR is not reliable, as acknowledged on page 2-10 lines 13-15 of the RDEIR: "Finally understanding the uncertainties and limitations in modeling. . ." The very optimistic and unsubstantiated conclusion on RDEIR page 2-10 lines 25-27 is "Thus, it is likely that some objective exceedances simulated in the modeling would not occur under the real time monitoring and operational paradigm that will be in place to prevent such exceedances." Project proponents continue to assert the California WaterFix will be operated in accordance with Biological Opinions and D-1641 and therefore current conditions in the Delta will be maintained and significant impacts will be avoided. However, the current water quality conditions required by the Biological Opinions and D-1641 were developed to address impacts created by the current export facilities and do not account for changes in operation by the California WaterFix. Because the California WaterFix will change flow and water quality in and through the Delta, the impacts need to be understood and clearly articulated. Instead the RDEIR relies on inaccurate modeling of BDCP and assumptions to conclude that impacts to water quality will be less than significant.	Please see Master Response 30, Modeling. Also see Master Response 14, Water Quality.
2585	13	The BDCP DEIR and the California Water Fix RDEIR fail to address consistency with the State Plan of Flood Control as required by Water Code Section 85320 (b)(2) which requires that BDCP studies include "the potential effects on Sacramento River and San Joaquin River flood management." The BDCP DEIR and California WaterFix RDEIR rely on inadequacies of Delta levees as a primary reason for building the twin tunnels, yet California WaterFix will rely heavily on dual conveyance (through Delta and north Delta Diversion) and levees will perform a key role in project performance. Levee inadequacies as detailed in the BDCP DEIR and California WaterFix RDEIR are not addressed and therefore the project and the RDEIR are incomplete.	Please see Chapter 2, FEIR/EIS, for the BDCP/CWF purpose and need, and Appendix 6A Sections 6A.2 and 6A.3 for discussion on existing levee improvement programs and funding mechanisms, which would not be affected by the BDCP/CWF. Levees are an important public safety resource and the proposed project would not change levee policy or replace ongoing programs and grant projects aimed at facilitating and supporting levee improvements in or outside the Delta. It recognized that levee maintenance and safety in the Delta is an important issue for the residents of the Delta and for statewide interests. Also, see Section 6A.6.2.1.3 for a discussion on DWR consistency with the State Plan of Flood Control (SPFC), and Section 6A.6.1.2 for information on project consistency with USACE, CVFPB, and DWR flood standards and regulations. Section 6A.6.2.1 discusses potential changes in flood flow capacity and conveyance.
2585	14	Collective Negative Impacts of the California Water Fix on Delta Agricultural Resources: With the exception of the reduced impacts resulting from removing BDCP Conservation Measures 2-21 and the questionable reclassification of some impacts from significant and unavoidable to less than significant, not much has changed from our previous comments. The California WaterFix will have tremendous negative unmitigated impacts on Delta agricultural resources. So-called short-term impacts will result in an irreparable, permanent loss of agricultural resources, irrigation water of sufficient quality to some of the strongest priority users will be impaired, productive and diverse agricultural land will lie fallow, businesses that depend on agriculture will close, and agriculture employment will decline. While some of these collective impacts are recognized and discussed in Section 5.2.1.10 of the RDEIR, there is no effort to quantify or reduce the combined impacts and proposed mitigation such as a developing an Agricultural Land Stewardship Plan (please see [Delta Caucus's] comments regarding the proposed Agricultural Land Stewardship Plan in our June 1, 2014 comment letter) is inadequate and the combined negative impacts remain significant and unavoidable. In fact, all four agricultural impacts (AG1-4 RDEIR pages ES82-83) affecting agricultural resources are recognized as significant and unavoidable. In addition on pages ES 88-90 19 potential impacts to the Delta economy are recognized are	Please see Master Response 18 regarding agricultural impact mitigation. The commenter expresses concern about the project's potential effects on the Delta but does not raise a specific issue related to the adequacy of the 2015 RDEIR/SDEIS.

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		found to be less than significant for 1 and no impact for the remaining 18. This lack of regard for agricultural resources and the Delta economy will result in economic devastation and will destroy the viability, sustainability and resiliency of the Delta economy, its businesses, communities and livelihood of its residents.	
2585	15	Unidentified Impacts: Even though some of the unidentified impacts identified in our previous comments to the BDCP DEIR/EIS have been resolved, the California WaterFix RDEIR is incomplete because it has not recognized, analyzed and mitigated for unidentified impacts 1-4, 6, 9, and 10 as stated in our comment letter dated June 1, 2014.	The lead agencies believe that the proposed project and the EIR/EIS are complete in their evaluation of impacts, direct and cumulative, that project description is complete and satisfies the requirements of NEPA, that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies agree that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS.
2585	16	Water quality impacts as presented in the California Water Fix RDEIR are inadequate and incomplete. Without meaningful and accurate analysis of how the California WaterFix will change flow and water quality throughout the Delta, conclusions that water quality impacts are less than significant are unsubstantiated. Water flow and quality analysis should also include expected actions in the Yolo Bypass as required under the Biological Opinions and California EcoRestore.	Changes in flows and salinity throughout the Delta under the proposed project and other action alternatives are presented in Appendix 5A, Section C, of the Final EIR/EIS. Changes in other water quality parameters are presented in appendices to Chapter 8 of the EIR/EIS. The determination of significance in changes in water quality are presented in Chapter 8. It should be noted that with respect to the No Action Alternative presented in the Final EIR/EIS for comparison to Alternatives 2D, 4A (proposed project), and 5A, changes in habitat conditions in the Yolo Bypass in accordance to the 2009 NMFS biological opinion are included in the No Action Alternative and Alternatives 2D, 4A, and 5A. Please also refer to Master Response 14 for additional discussion regarding water quality impacts.
2585	17	According to DWR's application to the Army Corps of Engineers dated August 24, 2015, 2,099,259 cubic yards of tunnel muck will be generated during construction of California WaterFix (page 12). The tunnel muck (now called reusable tunnel material -- RTM) will be stacked from 6-15 feet high (page 6) in 11 disposal sites (page 4). DWR indicates that, if feasible, the tunnel material will be used during construction of various habitat restoration efforts (page 6). There is no provision for permanent storage or disposal of tunnel muck if reuse is infeasible. In the California WaterFix RDEIR tunnel muck is recognized as a potential problem, but the magnitude of the impact is minimized by assuming the material can be reused and by not providing analysis and provisions in the event that it cannot. The claim made in the DEIR page D.3-98 lines 10-11 that less than 1% of the tunnel muck will not be suitable for reuse is unsubstantiated and is contradicted by designing storage areas for either permanent or temporary storage. Page D3-96 lines 25-26 indicate temporary storage areas will be designed for RTM while lines 30-31 say that material will be temporarily or permanently stored in designated storage areas. On page D.3-99 lines 18-19 RTM will be placed in either lined or unlined storage areas suitable for long-term storage at an assumed depth of 6 feet (page D.3-97 line 29). In addition, the provision for reuse is qualified by terms such as if feasible and to the extent practicable while the definition of RTM on page D.3-96 line 19 describes RTM as ". . . Appropriate for reuse based on chemical characterization and physical properties." 2,099,259 cubic yards of tunnel muck stacked up to 15 feet deep could result in significant negative impacts not recognized or provided for in the California WaterFix RDEIR.	Please refer to Master Response 12 for addition discussion regarding the reusability of the excavated tunnel material. See also Master Response 18 regarding construction plans for the proposed project and how agricultural lands could be temporarily affected.
2585	18	The CEQA-required Draft Implementation Agreement was not available. Since then, a Draft Implementation Agreement was released but is incomplete because it does not include operating information and financial commitments. In addition, the Draft Implementation Agreement does not seem to be consistent with changes which have resulted in new alternatives as contained in the California WaterFix. A complete draft must be available for	This comment addresses the 2014 Draft Implementing Agreement (IA), a document detailing the roles and responsibilities of the various agencies under the BDCP (Alternative 4). Please note that the BDCP is no longer the preferred alternative. The preferred alternative is now Alternative 4A and no longer includes an HCP or NCCP. Alternative 4A has been developed in response to public and agency input. The EIR/EIS analyzes all alternatives, including Alternative 4A.

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		public review and comment and should restart the beginning of the public comment period.	Implementing agreements are a requirement under the California Natural Community Conservation Planning Act (NCCPA), and are routinely executed under the ESA Section 10 (HCP) permitting process. Since the current proposed project is no longer a NCCP or HCP, an implementing agreement was not released with the RDEIR/SDEIS or final EIR for the project.
2585	19	Analysis of Proposed Mitigation: Under CEQA, mitigation must be feasible, fully enforceable, adequately financed and monitored. Mitigation measures that are discretionary, deferred, unfunded and may not be feasible are not adequate mitigation.	The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.
2585	20	Because of inadequate analysis, especially relating to water quality and tunnel muck impacts, agricultural, economic, water quality and aesthetic impacts need to be reassessed and adequate mitigation developed.	Addressing some mitigation more programmatically is appropriate when the specifics of certain impacts cannot reasonably be determined because, for example, they are dependent on future actions. Please also see Master Response 2 for a discussion of the project vs. program level analysis in the EIR/EIS and why this is adequate and allowed under CEQA and NEPA.
2585	21	AG-1, "develop an Agricultural Lands Stewardship Plan (ALSP) to maintain agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones," remains the primary mitigation measure for agricultural and economic impacts. The ALSP is merely conceptual and does nothing to mitigate for the very real impacts that family farms will be faced with. In fact, as presented in the BDCP DEIR/EIS the ALSP could result in advancing isolated conveyance rather than mitigating for impacts to agricultural resources. Mitigation measure AG-1 is inadequate because the ALSP is not defined, not feasible, not enforceable or funded.	The vital significance of agriculture in the Delta is acknowledged. Please see response to Comment 2585-3. Appendix 14B Delta Agricultural Stewardship Strategies, discusses implementation mechanisms of the ALSP. Mitigation Option 2 includes the Conventional Mitigation Option, which incorporates the potential use of Agricultural Conservation Easements (ACEs) as mitigation. Please also refer to Master Response 18, which discusses in more detail agricultural impacts and how mitigation would be approached. Please also refer to Master Response 22 for further discussion regarding adequacy of mitigation under CEQA.
2585	22	Inadequate Study of Alternatives: Since 2006, a great deal of effort has been spent designing what today is the twin tunnels project, Alternative 4 in the BDCP. Alternative 4 has now been modified to become Alternative 4A, the preferred alternative of the California WaterFix. The twin tunnels project has been pursued in the courts and is being advanced even before public comment closes on the California WaterFix RDEIR. DWR has applied for permits to divert water in the north Delta and has applied to the Army Corp of Engineers in preparation for constructing California WaterFix. All alternatives not involving tunnels, north Delta diversion or suggested for study by the public have remained static, rejected or ignored. Alternatives as presented in the BDCP and as proposed by the public have not been studied in equal detail and DWR's continued implementation of the twin tunnels project before close of comments on the California Water Fix implies that CEQA/NEPA public participation is simply a formality and the process is not meant to provide meaningful participation and input into projects that will have long-term environmental, economic and human impacts.	Since 2006, the proposed project has been developed based on sound science, data gathered from various agencies and experts over many years, input from agencies, stakeholders and independent scientists, and more than 600 public meetings, working group meetings and stakeholder briefings. As discussed in Master Response 41, Transparency, the documentation generated by this proposed project has undergone extensive public and scientific input, discussion, and transparency, including the posting of administrative draft chapters online and providing many more opportunities for public participation than is normally required by the CEQA/NEPA processes. Please refer also to Master Response 40, Public Outreach, for a summary of the public outreach activities that have been conducted since the planning process began in 2006. As described in Master Response 4, the alternatives included in the Draft EIR/EIS and Final EIR/EIS represent a legally adequate reasonable range of alternatives and the scope of the analysis of alternatives fully complies with both CEQA and NEPA. The Lead Agencies carefully considered all potential alternatives that were proposed during the scoping process and during time of preparation of the EIR/EIS. In fact, as a direct result of the extensive public comments and agency input, the water facility and conveyance options proposed as part of the project changed significantly during the planning process in ways that reduce impacts in the Delta communities. Additional unique Alternatives that were proposed during review of Administrative Drafts of the BDCP and EIR/S were also considered and described, See Appendix 3A of the EIR/EIS and Section 4 of the RDEIR/SDEIS. This process included numerous public workshops and scoping meetings, extensive input from agencies, stakeholders, and the public, and an extensive multi-level screening process to refine the alternatives to be

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			<p>carried forward for full analysis in the EIR/EIS. As explained in Final EIR/EIS Appendix 3A "Identification of Water Conveyance Alternatives", the alternative development process for the EIR/EIS was based upon a number of legal considerations including: (1) the legal requirements for adequate discussions of alternatives in an EIR and EIS, as set forth in CEQA and NEPA respectively, and the regulations and case law interpreting those statutory schemes; (2) the concepts of "potential feasibility" under CEQA and "reasonableness" under NEPA; and (3) the requirements of Water Code Section 85320 from the 2009 Delta Reform Act. The results of a multi-level screening process reflecting these considerations were further compared to the requirements of the Delta Reform Act and scoping comments related to the definition of potential EIR/EIS alternatives as identified by responsible and cooperating agencies under CEQA and NEPA, respectively.</p> <p>Although many of the proposed alternatives included meritorious water policy principles, the proposals rejected by the Lead Agencies did not qualify as appropriate alternatives for various reasons. For example, proposals were rejected because they were inconsistent with the project's objectives and purpose and need or included components that are beyond the scope of the project. The text of the Draft EIR/EIS in Chapter 3 (section 3.2) and Appendix 3A to that document thoroughly explain the process used to develop the alternatives, and explain why certain potential alternatives were considered but ultimately rejected by the Lead Agencies.</p> <p>Please also refer to Master Response 31, compliance with the Delta Reform Act.</p>
2585	23	California WaterFix will devastate the Delta. The twin tunnels project will not make California's water supply more reliable, will not restore the Delta environment, will not reduce reliance on the Delta, will damage Delta resources to include agriculture and will waste valuable resources which could be employed to implement projects to advance water reliability for California -- projects that impact the supply/demand equation by reducing demand and increasing supply. The Delta Caucus believes that there are more efficient and effective ways to improve water reliability for California and improve conditions in the Delta. We remain committed to ensuring that Delta agricultural resources are protected and enhanced in accordance with the Delta Reform Act of 2009.	<p>Under the range of alternatives considered in the EIR/S full contract amounts are not delivered in the majority of times to the SWP and CVP water contractors, as presented in Appendix 5A, Section C, CALSIM II and DSM2 Model Results, of the EIR/EIS. Long-term water deliveries to SWP and CVP water contractors located south of the Delta are lower under Alternatives 6, 7, and 8 as compared to the Existing Conditions and the No Action Alternative. The EIR/S and the Draft BDCP were prepared in a manner to comply with the 2009 Delta Reform Act, as described in Appendix 3I, BDCP Compliance with the 2009 Delta Reform Act, of the Final EIR/EIS.</p> <p>The proposed project is just one element of the state's long-range strategy to meet anticipated future water needs of Californians in the face of expanding population and the expected effects of climate change. It is important to note that the project is not intended to serve as a state-wide solution to all of California's water problems, and it is not an attempt to address directly the need for continued investment by the State and other public agencies in conservation, storage, recycling, desalination, treatment of contaminated aquifers, or other measures to expand supply and storage (as described in Section 1.C.3 of Appendix 1C, Demand Management Measures).</p> <p>For additional information regarding storage, please see Master Response 37.</p>
2586	1	Metropolitan [Water District of Southern California] supports Governor Brown's California Water Action Plan and how it complements Metropolitan's ongoing "all of the above" strategy to provide adequate and reliable water supplies in an environmentally and economically responsible way.	The commenter's support of the Project Objectives and Purpose and Need of the proposed project is acknowledged. The issue raised by the commenter addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/S.
2586	2	Among recent highlights, during the current drought, Metropolitan [Water District of Southern California] has invested in the largest conservation program in the nation's history. Metropolitan's Board of Directors has directed \$450 million into a series of permanent conservation efforts such as rebates for turf removal, water saving devices like low-flow showerheads, high-efficiency toilets, and high-efficiency dishwashers and washing machines. Metropolitan is also in the middle of a \$5.5 million public education campaign in five languages urging individuals to change their habits to make conservation a way of life. It is estimated that more than 170 million square-feet of turf will be removed as a result of	The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS. Please refer to Master Response 6 for additional details on demand management.

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		this effort, which is more than three times the statewide goal of 50 million square feet set by Governor Brown in his executive order issued in April 2015. This is but one example of the significant strides being taken by regions with existing state water contracts that will continue to receive water from the BDCP/California WaterFix demonstrating that such regions are achieving the Legislature's goal of reduced reliance on water from the Delta watershed to meet California's future water supply needs.	
2586	3	In addition, as part of Southern California's expanding local portfolio, Metropolitan [Water District of Southern California] is looking to develop its first regional supply of water -- an extraordinary measure for an imported water wholesaler. Discussions are underway with the Sanitation Districts of Los Angeles County to plan a multi-phase project to recycle water that now is discharged to the Pacific Ocean. Full build out over the years could produce up to 150 million gallons/day of supplies annually to replenish groundwater basins.	No issues related to the adequacy of the environmental impact analysis in the EIR/S were raised. The project is not a comprehensive, statewide water plan, but is instead aimed at addressing many complex and long-standing issues related to the operations of the SWP and CVP in the Delta, including reliability of exported supplies. The project is just one element of the state's long-range strategy to meet anticipated future water needs of Californians in the face of expanding population and the expected effects of climate change with continued investment by the State and other public agencies in conservation, storage, recycling, desalination, treatment of contaminated aquifers, or other measures to expand supply and storage (as described in Section 1.C.3 of Appendix 1C, Water Demand Management).
2586	4	Notwithstanding significant investments in conservation and local supplies, State Water Project supplies are essential to making the rest of the portfolio work. Supplies from Northern California in wetter years are needed to develop reserve supplies to withstand coming droughts of unknown duration. The high quality of State Water Project water makes local projects like recycling feasible by preventing increased salinity in the region's groundwater basins. As we are updating our IRP [Integrated Water Resources Plan], Metropolitan [Water District of Southern California] is seeking to stabilize its imported supplies from the State Water Project and the Colorado River. Only by taking many actions, including restoring and protecting reliable State Water Project supplies, can Southern California expect to maintain a reliable water system in the decades to come.	This comment is consistent with the fundamental purpose of the project to make physical and operational improvements to the SWP system in the Delta, water supplies of the SWP and CVP for users located south of the Delta, and Delta water quality consistent with statutory and contractual obligations of the SWP and CVP, as described in Section 2.3 of Chapter 2, Project Objectives and Purpose and Need, of the EIR/EIS. The issue raised by the commenter addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/EIS.
2586	5	In light of the essential role State Water Project supplies play in Metropolitan [Water District of Southern California]'s water supply portfolio, Metropolitan supports the type of dual conveyance approach included in the BDCP and California WaterFix, as well as the habitat conservation in the BDCP and the California EcoRestore initiative to accelerate ecosystem restoration in the Sacramento-San Joaquin Delta. Regardless which approach is ultimately selected, we support increased efforts to address the multiple stressors on the Delta ecosystem as identified in the BDCP conservation measures. As the Legislature recognized in the Sacramento-San Joaquin Delta Reform Act of 2009, California needs to act now to address the decline in the Delta ecosystem while modernizing conveyance in a manner that restores and protects reliable water supplies. Implementing a dual conveyance solution will enhance operational flexibility that promises to restore and protect reliable supplies, reduce risks of interruption or degradation of supplies due to climate change, sea level rise, earthquakes and levee failures.	No issues related to the adequacy of the environmental impact analysis in the EIR/S were raised.
2586	6	The analysis in the RDEIR/SDEIS and earlier Draft EIR/EIS shows great potential for the proposed physical infrastructure to both improve ecosystem conditions for sensitive fish species by resulting in more upstream-downstream rather than across the Delta flows, and safely capture additional supplies during higher-flow periods in all water year types. For instance, the 2014-15 water year that recently came to a close provided a record low Sierra snowpack, but it did provide two major storms and opportunities to capture supplies at the location of the north Delta intakes included in the BDCP and California WaterFix alternatives. In some wetter years with multiple such storms, diverting full contract amounts should be achievable using a dual conveyance system while meeting all regulatory	This comment is consistent with the fundamental purpose of the project to make physical and operational improvements to the SWP system in the Delta, water supplies of the SWP and CVP for users located south of the Delta, and Delta water quality consistent with statutory and contractual obligations of the SWP and CVP, as described in Chapter 5, Water Supply, of the EIR/EIS. The issue raised by the commenter addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/EIS.

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		requirements intended to protect fish and water quality in the Delta.	
2586	7	As explained in the joint State Water Contractors/San Luis [and] Delta-Mendota Water Authority comment letter, there must be a Collaborative Science and Adaptive Management Program in place before project approval. There is no room for operational constraints based on untested or highly uncertain hypotheses, thus hampering the future water system's ability to properly function where such constraints contribute little or nothing to meeting state and federal Endangered Species Act requirements or advancing the coequal goal of restoring the Delta ecosystem. In 2014 Metropolitan [Water District of Southern California] provided substantive comments and materials regarding scientific uncertainty and the need for a clearly articulated Decision Tree to address this uncertainty in its comments on the Draft EIR/EIS. [Footnote 1: See Comments 8-9 of Metropolitan's Focused Comments on the BDCP EIR/S, Letter from Jeffrey Kightlinger, General Manager, Metropolitan Water District of Southern California, to Ryan Wulff, National Marine Fisheries Service (July 28, 2014). Metropolitan hereby incorporates its prior comments in this letter.] It is expected that future Collaborative Science analyses will specifically test hypotheses related to whether the prescribed high outflow scenarios or elements of Scenario 6 are necessary to meet state and federal Endangered Species Act requirements. The joint comment letter provides supplemental information in this regard, and Metropolitan looks forward to responses to its comments on the Draft EIR/EIS, as well as the supplemental comment on the RDEIR/SDEIS, and we request that these programs be adequately described in the Final EIR/EIS.	The proposed project includes a Collaborative Science and Adaptive Management Program (CSAMP), which will be in place during construction and operations of the proposed project (see Chapter 3 in the FEIR/EIS). Actions taken through the CSAMP will be based on sound science and targeted research actions (including the testing of current and new hypotheses associated with key water operating parameters) to improve our understanding of effects from CVP and SWP operations (and CWF construction) and other management actions on listed species and resolve key knowledge gaps on the Delta ecosystem. If new science suggests changes to initial or future operations are needed, adjustments can be made after approval from the decision-making agencies and/or groups.
2586	8	Many important matters relating to operations, institutional cooperation and finance will need to be successfully resolved in the weeks and months ahead. Metropolitan [Water District of Southern California] will continue to look particularly closely at new and proposed operational criteria for the operations of dual conveyance needed to maintain the flexibility inherent in modernized Delta conveyance that is intended to restore and protect reliable, high-quality water supplies while reducing conflicts with sensitive fish species. We will continue to work with the lead agencies and state and federal fishery agencies to craft enforceable agreements to successfully implement the needed scientific research and adaptive management, but also to obtain the maximal regulatory assurances available to ensure the project produces long-term benefits. The final project needs to be a sound financial investment in order for Metropolitan to contribute billions of dollars toward a solution. Metropolitan hopes to be a constructive participant in the ongoing process so that a final plan makes sense for both the California environment and economy.	The commenter does not raise an issue on the adequacy of the EIR/EIS or related analyses. Please see Master Response 5 regarding Cost.
2586	9	[ATT1: "Summary of Southern California's Local Resource Program Investments and Conservation Achievements." A report by the Metropolitan Water District of Southern California.]	The comment describes an attachment to the comment letter. The attachment does not raise any additional issues related to the environmental analysis in the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS that are not already addressed in the comment referencing the attachment or the Final EIR/EIS.
2586	10	[ATT2: Report from the Metropolitan Water District of Southern California titled "A Regional Progress Report." February 2015.]	The comment describes an attachment to the comment letter. The attachment does not raise any additional issues related to the environmental analysis in the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS that are not already addressed in the comment referencing the attachment or the Final EIR/EIS.
2586	11	[ATT3: Report by the Metropolitan Water District of Southern California titled "Achievement Scorecard Fiscal Year 2013/2014."]	The comment describes an attachment to the comment letter. The attachment does not raise any additional issues related to the environmental analysis in the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS that are not already addressed in the comment referencing the attachment or the Final EIR/EIS.
2587	1	As noted in the revised cumulative analysis, water quality conditions in Barker Slough are	As required by CEQA, the cumulative contribution of the proposed project to the cumulative water quality

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		<p>anticipated to be adverse or have reasonable potential to be adverse, for bromide, chloride, electrical conductivity, organic carbon, and microcystis under the cumulative condition. The primary driver is likely hydrodynamic changes in the Cache Slough Complex due to increased tidal flux and higher residence time promoted by development of new tidal wetlands. The new alternatives separate the BDCP actions between CM-1 as CA WaterFix and development of the EcoRestore Program to implement habitat enhancement actions apart from WaterFix. The revised permitting mechanism reduces the amount of potential mitigation requirements directly attributable to the construction and operation of WaterFix. The contribution from the proposed project's incremental effect is characterized as not cumulatively considerable. However, it now becomes clear that the level of habitat enhancement reassigned to EcoRestore from BDCP and other efforts is likely cumulatively considerable in regards to water quality and public health impacts to the North Bay Aqueduct in Barker Slough in the long-term.</p>	<p>effects was determined to not be cumulatively considerable because the analysis of the proposed project on these constituents was determined to be less than significant/not adverse. The effects of the California EcoRestore to cumulative effects were considered in combination with other cumulative projects. See Master Response 9 for additional discussion of the cumulative impact analysis. Please refer to Master Response 14.</p>
2587	2	<p>In general, we [Solano County Water Agency] acknowledge the conclusion that operation of the new conveyance facility does not appear to be a driving factor of water quality impacts in Barker Slough under the assumed starting conditions. The hope of the proposed adaptive management program is that these initial operating conditions may be improved in the future. A relaxation of the outflow requirements on the proposed project from the starting condition could increase the adverse water quality impacts in Barker Slough attributable to operation of the new conveyance facility.</p>	<p>Operations under all project alternatives will be required to conform to with applicable water quality criteria in the Delta, including D-1641. In addition, any potential changes to future project operations will also be required to be consistent with water quality standards at that time. See also Master Responses 14, 22, and 33 for more information on water quality, mitigation measures, and adaptive management, respectively.</p>
2587	3	<p>The RDEIR/SDEIR acknowledges several points of uncertainty in the water quality modeling particularly in Barker Slough. See example excerpts:</p> <p>Section 4.2.7</p> <p>"... the assessment of bromide, chloride and EC for the No Action Alternative (ELT), relative to Existing Conditions, likely underestimates increases in bromide, EC, and chloride that could occur, particularly in the west Delta. Nevertheless, there is notable uncertainty in the results of all quantitative assessments that refer to modeling results, due to the differing assumptions used in the modeling and the description of the No Action Alternative (ELT)."</p> <p>Chapter 8</p> <p>"Important to the results presented above is the assumed habitat restoration footprint on both the temporal and spatial scales incorporated into the modeling. Modeling sensitivity analyses have indicated that habitat restoration (which are reflected in the modeling-see Section 8.3.1.3), not operations covered under CM1, are the driving factor in the modeled bromide increases. The timing, location, and specific design of habitat restoration will have effects on Delta hydrodynamics, and any deviations from modeled habitat restoration and implementation schedule will lead to different outcomes. Although habitat restoration near Barker Slough is an important factor contributing to modeled bromide concentrations at the North Bay Aqueduct, BDCP habitat restoration elsewhere in the Delta can also have large effects. Because of these uncertainties, and the possibility of adaptive management changes to BDCP restoration activities, including location, magnitude, and timing of restoration, the estimates are not predictive of the bromide levels that would actually occur in Barker Slough or elsewhere in the Delta."</p> <p>Chapter 8.3.1.7</p>	<p>The text quoted from Section 4.2.7 is regarding the No Action Alternative ELT. The No Action Alternative modeling assumptions allow for direct comparison to Alternatives 4A, 2D, and 5A to isolate effects due to the alternative separate from effects due to climate change. Please refer to Master Responses 14 and 30 regarding water quality and modeling and sensitivity analyses conducted to support the RDEIR/SDEIS and Final EIR/EIS.</p> <p>The text quote from Chapter 8 is within each impact discussion for bromide (Impact WQ-5), for Alternatives 1A, 2A, 3, 4, 5, 6A, 7, 8, and 9. The text quote for Chapter 8.3.1.7 is also regarding constituent-specific considerations common to all the alternative assessments for bromide. Significant impacts to bromide at Barker Slough were identified for Alternatives 1A-C, 2A-C, 3, 4, 5, 6A-C, 7, 8, and 9, and mitigation provided. The modeling and supporting sensitivity analyses that have been conducted to support this conclusion present the best available information.</p> <p>The Lead Agencies acknowledge that uncertainty is inherent in any planning effort of this geographic and temporal scale. However, DWR strived to use the best available science throughout the effects analysis, consistent with the requirements of the ESA. Additionally, the official public review process for the proposed project provides an opportunity for formal public comment on the proposed project and project alternatives. Public and agency comments on the public draft have led to further refinement of the proposed project, as evidenced in the RDEIR/SDEIS.</p> <p>Please see Master Responses 14 and 30 for more information on water quality and modeling.</p>

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		<p>"The modeling relies on several assumptions that could have large impacts on the predicted level of seawater intrusion. The two most major assumptions are the assumed level of sea level rise, and the assumed restoration area footprints used in the modeling. Changes in either of these assumptions would likely impact predicted bromide concentrations at Barker Slough. Additionally, DSM2 is known to not account well for local diversions and returns in the Barker Slough area, and the assumed modeled pumping schedule for the Barker Slough Pumping Plant may not accurately reflect actual operations, both of which can affect the hydrodynamics of Barker Slough. It is unknown whether these latter assumptions would play a major role in determining bromide concentrations in Barker slough under the alternatives."</p> <p>Given this level of uncertainty, we are not confident that the water quality and public health impacts are appropriately characterized and addressed. The RDEIR/SDEIS is deficient and needs revisions regarding water quality and public health impacts specific to the NBA. We object to approval of the RDEIR/SDEIS with the current deficiencies. However, if the RDEIR/SDEIS is revised to become legally adequate, then many of SCWA's [Solano County Water Agency] environmental concerns would be mitigated or lessened.</p>	
2588	1	We recognize that significant efforts are necessary to provide reliable water supplies to all of California. However, the proposed California WaterFix project would create significant risks to the water supply reliability of our region. Also, the numerous flaws that undermined the impact analyses in the BDCP Draft EIR/EIS remain in the RDEIR/SDEIS.	<p>The lead agencies believe the operation of the CWF would not adversely affect other regional water supplies. The lead agencies performed extensive modeling of all alternatives, including the preferred alternative, to help assess water supply impacts. This modeling considered future demands occurring upstream of the Delta. This information is contained in Final EIR/EIS Chapter 5 Water Supply and associated appendices. The hydrologic modeling effort is also discussed in Master Response 30.</p> <p>The alternatives would not modify water deliveries to non-SWP and non-CVP water rights holders, including in-Delta water rights holders. Therefore, the water supply analysis addresses impacts to DWR, Reclamation, and SWP water users and CVP water service contractors, as opposed to other water rights holders, as the Proposed Project does not include any regulatory actions that would affect water availability to any such water rights holders.</p>
2588	2	The RDEIR/SDEIS should be revised and additional analyses should be conducted before the Bureau of Reclamation ("Reclamation") and the Department of Water Resources ("DWR") consider adopting a Final Environmental Impact Report/Statement for the proposed California WaterFix project. The RDEIR/SDEIS's failure to analyze the proposed project's impacts in comparison to an existing conditions baseline obscures the impacts that would occur from the proposed project and, if the RDEIR/SDEIS's analyses were adopted in a final EIR, then they would violate the California Environmental Quality Act ("CEQA").	<p>The lead agencies believe the EIR/EIS apply accurate baseline conditions for the disclosure of impacts under CEQA and NEPA. Final EIR/EIS Chapter 4 Approach to the Environmental Analysis, provides a discussion of baselines used in the CEQA and NEPA analyses. As indicated in Chapter 4, although the baselines have been labeled as the CEQA and NEPA baselines, respectively, the CEQA analysis presented in the various resource chapters frequently mentions the NEPA baseline in order to fully explain the results based on the CEQA baseline. Although some of the assessments include this dual baseline approach, the CEQA discussion always includes a discussion of impacts by comparing with project conditions against existing conditions. In particular, under NEPA, the effects of sea level rise and climate change (e.g., altered precipitation patterns resulting in more rain and less snow than at present) are evident both in the future condition and in the effects of the action alternatives. Under CEQA, in contrast, the absence of sea level rise and climate change in Existing Conditions results in model-generated impact conclusions that include the impacts of sea level rise and climate change in addition to the effects of the action alternatives. As a consequence, a CEQA analysis that reported these conclusions without qualification and explanation would either overstate the true effects of the action alternatives or would misleadingly suggest significant effects that are largely or exclusively attributable to sea level rise and climate change, and not to the action alternatives themselves. Master Response 1 provides a detailed discussion of the CEQA and NEPA baselines and an explanation as to why the assessment methods meet the requirements of both.</p>
2588	3	The RDEIR/SDEIS also improperly defers analysis of key elements of the proposed project and improperly assumes, for both the No Action Alternative and the proposed action	The alternatives would not modify water deliveries to non-SWP and non-CVP water rights holders, including in-Delta water rights holders. Therefore, the water supply analysis addresses impacts to DWR, Reclamation,

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		alternatives, that the State Water Project ("SWP") and the Central Valley Project ("CVP") would be operated in a manner that would cause significant damage to protected fisheries and violate numerous settlement contracts and water right permit terms. Finally, the RDEIR/SDEIS is so poorly organized and confusing that it does not properly inform the public about the proposed project's impacts.	and SWP water users and CVP water service contractors, as opposed to other water rights holders, as the Proposed Project does not include any regulatory actions that would affect water availability to any such water rights holders. Please see Master Response 26 regarding additional information on area of origin. Please see Master Response 54 regarding Water Rights. The size and complexity of the draft environmental documents and the Final EIR/EIS reflects an unprecedented effort to analyze project alternatives under both state and federal laws for a habitat conservation plan along with 15 alternatives, and three alternatives which do not include a habitat conservation plan. Master Response 38 provides additional information regarding the size and complexity of the documents.
2588	4	The "standard analysis" under CEQA compares the impacts of the proposed project, as if it existed at the time the environmental analysis is conducted, against existing environmental conditions. (Neighbors for Smart Rail v. Exposition Metro Line Construction Authority (2013) 57 Cal.4th 439, 452.) Such an analysis "attempts to predict the impacts a project would have on the existing environment if approved and implemented." (Ibid., italics in original) The BDCP Draft EIR/EIS did not contain this standard CEQA analysis because it did not contain any analysis of the proposed project's impacts under existing conditions. Instead, the BDCP Draft EIR/EIS analyzed the impacts of the proposed project only under the 2060 "late long term" conditions. Our agencies previously commented that this analytical approach would not adequately inform the public and was contrary to CEQA.	The EIR/EIS analyses compare action alternatives against an existing conditions baseline, as required by CEQA, as well as against two No Action Alternatives (early long term and late long-term) for NEPA purposes. Impacts associated with construction of conveyance facilities provide analysis of the effects of project facilities on existing environmental conditions (e.g. effects on agricultural lands). For operational based analyses, project conditions in the ELT time frame as well as the LLT time frame are presented (depending on the alternative) compared against existing Delta hydrodynamic conditions and future No Action Alternatives conditions. The project alternative comparisons with existing conditions provide the appropriate information to determine what project operational changes would have on existing Delta and other surface water hydrodynamics. Please refer to Chapter 4, Approach to the Environmental Analyses and Master Response 1 which addresses the baseline approach in this Final EIR/EIS.
2588	5	The RDEIR/SDEIS contains a similar defect. Specifically, the RDEIR/SDEIS includes 2025 "early long-term" conditions in its analyses of both the No Action Alternative and the new proposed action alternatives. (RDEIR/SDEIS, pp. 4.2-1 (no action alternative), 4.3-1 (alt. 4A), 4.4.1-1 (alt. 2D), 4.5.1-1 (alt. 5A).) These early long-term conditions include the simulated impacts of climate change and sea level rise, and, for the new proposed action alternatives, the impacts of the proposed project. Like the BDCP DEIR/EIS, the RDEIR/SDEIS does not separately analyze the proposed project's impacts in comparison to existing conditions. (RDEIR/SDEIS, p. 4.1-42.) The inclusion of simulated climate change and sea level rise in the impact analyses for both the No Action Alternative and the new proposed action alternatives means the reader cannot determine which significant effects actually would be related to the proposed project and which are results of the RDEIS/SDEIS's modeling assumptions for early long-term conditions for climate change and sea level rise.	Please see response to comment 4.
2588	6	Analyzing the impacts of the proposed project in comparison to existing conditions is required by CEQA and would help all parties understand better what impacts would occur if SWP and CVP operations were modified for the substantial proposed north Delta water diversions. As discussed in the MBK Engineers ("MBK") technical memorandum previously submitted by our agencies with our comments on the BDCP DEIR/EIS, the project's hydrologic modeling appears to assume that Reclamation's patterns of releases of water from storage in Folsom Reservoir would change by increasing in the summer and decreasing in the fall, to allow substantial amounts of released water to move through the proposed tunnels. As described by MBK, this changed pattern of reservoir releases would substantially alter the seasonal patterns of water storage in the reservoir. However, because both the No Action Alternative and the new proposed action alternatives include simulated climate change and sea level rise, the effects of these altered release patterns for the new proposed action alternatives are muted or masked by the overarching effects of simulated climate	As discussed in Chapter 5, Water Supply, of the EIR/EIS, climate change, sea level rise, and population growth in the northern Delta watershed are anticipated to effect senior water rights holders (as shown in the comparison between the Existing Conditions and the No Action Alternative model runs) with or without implementation of the action alternatives. Effects due to climate change are not due to implementation of the proposed action and are provided for informational purposes only and do not lead to mitigation. Overall, the proposed project would decrease total exports of SWP and CVP water as compared to Existing Conditions and No Action Alternative in the summer and early fall months especially in drier years; and increase exports in the wet winter months especially in wetter years when the river flows are high. Specific changes in American River flows and Folsom Lake volumes are presented in Appendix 5A, Section C. The Final EIR/EIS evaluates long-term operation of the SWP and CVP over an 82-year long hydrologic period with extended wet periods and dry/critical dry periods. The analyses were not conducted to identify specific values or to respond to short-term emergency situations, such as the recent drought. Separate engineering

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		<p>change and sea level rise, which the RDEIR/SDEIS assumes will significantly reduce Folsom Reservoir storage in drier years under both the No Action Alternative and the new proposed action alternatives. This approach does not provide the information and analysis needed for our agencies and others to understand the specific effects of the proposed action alternatives on Folsom Reservoir release patterns and storage levels.</p>	<p>and environmental studies have been and will continue to be prepared when water quality criteria and other regulations are modified in emergencies.</p> <p>Responses to comments on the Draft EIR/EIS are included in this Final EIR/EIS. Please see Master Response 30.</p>
2588	7	<p>In <i>Neighbors for Smart Rail</i>, the California Supreme Court stated that using a future baseline might cause "changes in background conditions" to "mask or swamp" project impacts (<i>Neighbors for Smart Rail</i>, supra, 57 Cal.4th at p. 456). Here, the RDEIR/SDEIS's use of the "early long term" (2025) climate change and sea level rise scenarios "masks or swamps" the analyses of project impacts. An analysis based on existing conditions is necessary to avoid this problem and to allow our agencies and others to understand the impacts of the proposed project on those fish.</p> <p>Although the RDEIR/SDEIS uses an existing conditions baseline in its CEQA analysis, it only uses this baseline to assess the impacts of the new proposed action alternatives under early-long term conditions, and not to assess the impacts of these alternatives under existing conditions. This approach does not inform the reader about the proposed project's impacts, because the resulting impact analysis does not separate the impacts of the proposed project from the simulated impacts of climate change and sea level rise. Like the BDCP DEIR/EIS, the RDEIR/SDEIS repeatedly acknowledges this flaw and states that comparing existing conditions with the early-long term scenarios for the action alternatives is unhelpful and obscures project-related impacts. (See, e.g., RDEIR/SDEIS, p. 3.7-60: "Because the action alternative modeling does not partition the effects of implementation of the alternative from the effects of sea level rise, climate change, and future water demands, the comparison to Existing Conditions may not offer a clear understanding of the impact of the alternative on the environment." (See also</p> <p>RDEIR/SDEIS, pp. 4.3.7-72 to 4.3.7-73, 4.3.7-98 to 4.3.7-99, 4.3.7-147 (alt. 4A); pp. 4.4.7-4, 4.4.7-10 to 4.4.7-11, 4.4.7-20 to 4.4.7-21, 4.4.7-43, 4.4.7-45 to 4.4.7-46, 4.4.7-49 to 4.4.7-50, 4.4.7-51 to 4.4.7-52, 4.4.7-73, 4.4.7-78 to 4.4.7-79, 4.4.7-85 (alt. 2D); 4.5.7-11, 4.5.7-21 to 4.5.7-22, 4.5.7-40, 4.5.7-42 to 4.5.7-43, 4.5.7-46 to 4.5.7-47, 4.5.7-69, 4.5.7-74 to 4.5.7-75 (alt. 5A).)</p> <p>The RDEIR/SDEIS states that, because of this defect, the comparison of the new proposed action alternatives to the No Action Alternative Early Long Term Conditions scenario "is a better approach because it isolates the effect of the alternative from those of sea level rise, climate change, and future water demands." (See, e.g., p. 4.3.7-60.) However, this comparison does not satisfy CEQA. Although the California Supreme Court in <i>Neighbors for Smart Rail</i> approved the use of a future conditions baseline under CEQA under some circumstances, the Court expressly held that an EIR may not omit any analysis of the proposed project's impacts on existing conditions unless such an analysis would be "misleading or without informational value." (<i>Neighbors for Smart Rail</i>, supra, 57 Cal.4th at 457.) As discussed above, an analysis of California WaterFix's impacts on existing conditions would not be misleading and would be very informative, because it would describe the specific impacts of the proposed project, separate from the simulated impacts of climate change and sea level rise, in comparison to known, existing conditions, and not in comparison to simulated future conditions that may or may not ever occur. (See ARWA's BDCP Comment Letter, pp. 20-26. Therefore, the RDEIR/SDEIS should not have omitted this analysis.</p>	<p>As stated in Section 4.2.1 of the 2013 Draft EIR/EIS, "the CEQA baseline for assessing significance of impacts of any proposed project is normally the environmental setting, or existing conditions, at the time a Notice of Preparation (NOP) is issued (State CEQA Guidelines Section 15125[a])." However, a future baseline may be used when the lead agency can show that an existing conditions analysis would be "misleading or without informational value."</p> <p>In several instances in the alternatives analysis, the RDEIR/SDEIS concludes that a comparison to the existing conditions baseline "may not offer a clear understanding of the impact of the alternative on the environment." The RDEIR/SDEIS acknowledges that the "modeling results indicate that the difference between Existing Conditions and Alternative 4A could be significant" but provides additional explanation that this interpretation of the biological modeling results is likely attributable to different modeling assumptions for four factors: sea level rise, climate change, future water demands, and implementation of the alternative.</p> <p>As a result, the NEPA No Action Alternative baseline is used for evaluation of impacts to fish and aquatic resources because it allows comparison of the effects of implementation of the action alternative along with the effects of sea level rise, climate change, and future water demands. This allows the effects of the project to be identified separately from changes to the environmental that will occur irrespective of the project. Using the existing conditions as a baseline for future time steps of analysis would mislead the reader in determining the effects of "the project" versus what is occurring without the project. As a result, use of the NEPA No Action Alternative is consistent with the CEQA guidelines as it allows clear understanding of the impact of the alternative on the environment. For more information regarding environmental baselines please see Master Response 1.</p>

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2588	8	<p>Several key elements of the proposed California WaterFix are not described or analyzed in the RDEIR/SDEIS. Instead, the RDEIR/SDEIS states these project elements will be developed and studied in the future, either for the Final EIR/EIS or as adaptive management measures during construction or operation of the proposed project. These elements include:</p> <ul style="list-style-type: none"> - Future SWP/CVP system operations in light of projected climate change (to be provided in the Final EIR/EIS) (RDEIR/SDEIS, p. 1-35); - The design of fish facilities, including the enormous fish screens for the three north Delta diversions under Alternative 4A (to be developed during construction and operation of the proposed project) (RDEIR/SDEIS, p. ES-37); - The operation of the water conveyance facilities (to be developed under future biological opinions and Fish and Game Code section 2081(b) permits for the proposed project) (RDEIR/SDEIS, p. ES-37); and, - The January through June Delta outflows necessary to have the proposed project not result to changes in longfin smelt abundance (to be adjusted during operations of the proposed project) (RDEIR/SDEIS, pp. 4.3.7-41 (alt. 4A); 4.4.7-11 to 4.4.7-12 (alt. 2D); 4.5.7-11 to 4.5.7-12 (alt. 5A)). <p>The plan for future SWP/CVP operations should not, as proposed in the RDEIR/SDEIS, be provided to our agencies for the first time in the Final EIR/EIS. (See RDEIR/SDEIS, p. 1- 35.) The operations of the CVP, in particular, are far too important for our region to be disclosed to the public and its water suppliers so late in the process and in such a perfunctory manner.</p>	<p>The DEIR/EIS, RDEIR/SDEIS, and Final EIR/EIS were prepared based on the best available information. The lead agencies recognize that there is remains some scientific uncertainty regarding the Delta ecosystem and effects of system operations. In response to this uncertainty, the collaborative science and adaptive management program has been developed. Master Response 33 provides an overview of the adaptive management program.</p> <p>The lead agencies have used the best available science and analytical tools to construct scenarios of future climate that are used to explore the system response to changes in temperature and precipitation. Final EIR/EIS Appendix 29D Potential Future SWP/CVP Operations in Response to Climate Change Conditions, was prepared to provide an overview of future conditions attributable to climate change and potential operational and regulatory responses. It includes a discussion of roles of regulatory agencies, including the SWRCB, NMFS, and USFWS and advisory bodies and programs (Real Time Drought Operations Management Team, Drought Contingency Plan, Delta Operations for Salmonid and Sturgeon, Smelt Working Group, and Interagency Ecological Program) in guiding system operations to best address climate change issues.</p>
2588	9	<p>The improper deferral of impact analysis in the RDEIR/SDEIS violates CEQA and undermines the document's analysis. Regarding the enormous new fish screens for the north Delta diversions, the RDEIR/SDEIS concludes that, although fish screens of the proposed size have neither been designed nor tested anywhere, the proposed screens would "eliminate entrainment risk" for juvenile salmonids. (RDEIR/SDEIS, p. 4.3.7-79 (alt. 4A).) However, although the objective of the proposed screens may be to eliminate or reduce entrainment, no analysis in the RDEIR/SDEIS supports the conclusion that the proposed project would meet this objective, because the screens would not be designed or tested until after Reclamation initiated consultation with the United States Fish and Wildlife Service. (RDEIR/SDEIS, p. ES-37.) We incorporate the comments by David Vogel, which are attached to the NSWA comment letter, on the proposed fish screens. Mr. Vogel has reviewed the RDEIR/SDEIS and the proposed fish screens and concluded that the proposed screens may have major flaws that have not been resolved by the RDEIR/SDEIS.</p>	<p>The positive-barrier fish screens for the proposed north Delta intake would be designed to established protection standards for salmonids and delta smelt and would comply with CDFW, NMFS, and USFWS fish screening criteria. Appendix 3F of Final EIR/EIS provides details on the development of intakes and fish screening technology, as well as Conceptual Engineering Reports. It is proposed that monitoring and research would be conducted to inform the fish screen design, construction, and operation in order to maximize their effectiveness.</p>
2588	10	<p>The RDEIR/SDEIS is flawed in its analysis of the project's impacts to longfin smelt. The RDEIR/SDEIS improperly concludes the preferred project would mitigate all significant project operation impacts to longfin smelt by setting delta outflow "such that longfin smelt abundance would not be reduced." (RDEIR/SDEIS, p. 4.3.7-41 (alt. 4A); see also 4.4.7-11 to 4.4.7-12 (proposing mitigation for alt. 2D); 4.5.7-11 to 4.5.7-12 (proposing mitigation for alt. 5A).) However, the RDEIR/SDEIS does not state how much outflow would be devoted to this mitigation measure. (RDEIR/SDEIS, p. 4.1-9.) Nor does the RDEIR/SDEIS contain any analysis of how the amount of outflow bounded by the Alternative 4A high and low outflow reduced. As with the document's discussion of the north Delta diversion fish screens, the RDEIR/SDEIS improperly presents a project objective as an impact conclusion without presenting the relevant details of the proposed project components or operations or any</p>	<p>As noted in the description of Mitigation Measure 22-d in Chapter 4, science developed through the Adaptive Management Program will be used to make appropriate adjustments to operations, including outflow, to minimize effects on longfin smelt. These operations would be implemented consistent with applicable biological opinions, incidental take statements, and other permits. This reflects the ESA section 7 and CESA ITP application process that would be undertaken for the preferred alternative, 4A.</p> <p>Analyses of potential near-field effects of the NDD are included in the EIR/S; see, for example Impact AQUA-39 for winter-run Chinook salmon. The RDEIR/SEIS recognizes the potential for adverse effects from the NDD under Alternative 4A and as a result includes environmental commitments intended to offset the negative effects (e.g., Environmental Commitment 16 Nonphysical Fish Barriers), as well as real-time adjustments to operations to minimize potential negative effects. As described in the adaptive management</p>

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		<p>analyses of their effectiveness.</p> <p>Other parts of the RDEIR/SDEIS, including its analysis of the effects of Alternative 4A and 5A water operations on winter-run Chinook salmon, have similar flaws. (See RDEIR/SDEIS, p. 4.3.7-64 (concluding, with no analysis, that alt. 4A would have no adverse impacts from the north Delta diversion on winter-run Chinook salmon, because future, undescribed measures would be designed to avoid such impacts); RDEIR/SDEIS, p. 4.5.7-24 (concluding, with no analysis, that alt. 5A would "not degrade migration conditions" for winterrun Chinook salmon); but see RDEIR/SDEIS, p. 4.4.7-25 (concluding that alt. 2D would have an "unacceptable risk" to winter-run Chinook salmon migration conditions).)</p>	<p>and monitoring program in Section 4.1, as part of the final NDD screen design effort, several pre-construction studies would be implemented to better understand how to minimize losses associated with the three new intake structures. As noted in the RDEIR/SEIR, Alternative 4A also includes investigations to better understand factors affecting juvenile through-Delta migration (as described in the adaptive management and monitoring program in Section 4.1) and includes biologically-based triggers to inform real-time operations of the NDD, intended to provide adequate migration conditions for juvenile salmonids.</p> <p>Additional analysis is provided in California WaterFix BA submitted in August 2016. Screen design will be to agency standards, and research and monitoring will assess the effectiveness of the screens, with adjustments being adaptively managed as necessary.</p>
2588	11	<p>The RDEIR/SDEIS has similar analytical defects. The RDEIR/SDEIS concludes, after comparing projected early long-term (2025) conditions with and without the preferred project (that is under Alternative 4A in comparison to the No Action Alternative), that water operations under the preferred project would have no significant, unmitigated impacts to protected fisheries. (RDEIR/SDEIS, pp. ES-47 to ES-59.) These conclusions obscure the fact that the RDEIR/SDEIS assumes that conditions for protected aquatic life would be seriously degraded under both the without-project and the with-project scenarios, in comparison to existing conditions. These assumed conditions for Alternative 4A include the following:</p> <ul style="list-style-type: none"> - Decreased and degraded quantity and quality of spawning and egg incubation habitat for fall-/late fall-run Chinook salmon (RDEIR/SDEIS, p. 4.3.7-147); - Moderate to substantial flow reductions and substantial increases in temperatures and temperature exceedances above thresholds in the Sacramento, Feather, and American Rivers, which would interfere with fall-/late fall-run Chinook salmon spawning and incubation (RDEIR/SDEIS, p. 4.3.7-155); - Substantially degraded spawning and egg incubation habitat conditions in the Sacramento, Feather and American Rivers (RDEIR/SDEIS, p. 4.3.7-155); - Persistent moderate flow reductions in the Feather, American, Stanislaus, Mokelumne, and San Joaquin Rivers, which would interfere with fall-/late fall-run Chinook salmon juvenile rearing habitat conditions (RDEIR/SDEIS, p. 4.3.7-167); - Increases in larval/juvenile delta smelt entrainment of 5% (RDEIR/SDEIS, p. 4.3.7-24); - Reductions of longfin smelt abundance of 10% to 22%, depending on the level of Delta outflow (RDEIR/SDEIS, p. 4.3.7-41); - Reduced quantity and quality of spawning and egg incubation habitat for winter-run Chinook, including an 18% increase in egg mortality (RDEIR/SDEIS, pp. 4.3.7-48, 4.3.7-60); - Substantial reductions in juvenile migration conditions for winter-run Chinook salmon upstream of the Delta (RDEIR/SDEIS, p. 4.3.7-72); - Substantial reductions in the quantity and quality of spawning and egg incubation habitat for spring-run Chinook salmon (RDEIR/SDEIS, p. 4.3.7-95); and; - Flow reductions and temperature increases in the Sacramento River that would lead to biologically meaningful increases in egg mortality and overall reduced habitat conditions for spawning and egg incubation of spring-run Chinook salmon (RDEIR/SDEIS, pp. 4.3.7-98, 4.3.7- 	<p>The lead agencies believe the EIR/EIS apply accurate baseline conditions for the disclosure of impacts under CEQA and NEPA. Final EIR/EIS Chapter 4 Approach to the Environmental Analysis, provides a discussion of baselines used in the CEQA and NEPA analyses. As indicated in Chapter 4, although the baselines have been labeled as the CEQA and NEPA baselines, respectively, the CEQA analysis presented in the various resource chapters frequently mentions the NEPA baseline in order to fully explain the results based on the CEQA baseline. Although, some of the assessments include this dual baseline approach, the CEQA discussion always includes a discussion of impacts by comparing with project conditions against existing conditions. Master Response 1 provides a detailed discussion of the CEQA and NEPA baselines and an explanation as to why the assessment methods meet the requirements of both.</p>

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		<p>106).</p> <p>These impacts render the conclusions in the RDEIR/SDEIS regarding Alternative 4A, and the similar conclusions made regarding Alternatives 2D and 5A, invalid because they are based on hydrologic and biological modeling that is not representative of actual future conditions. The state and federal fish agencies are very unlikely to allow Reclamation and DWR to operate the SWP and CVP in a manner that would allow these projected, significant impacts to protected species, regardless of whether or not the proposed California WaterFix project is implemented. Accordingly, the RDEIR/SDEIS does not present a reasonable and accurate representation of future conditions.</p>	
2588	12	<p>The RDEIR/SDEIS Continues to improperly assume that Folsom Reservoir would be operated in a manner that would preclude American River Water Agencies from making water-supply diversions.</p> <p>Our agencies' previous comment letter on the BDCP DEIR/EIS explained that the BDCP's hydrologic modeling for the American River was inadequate and improper because it assumed that Folsom Reservoir would be operated in a manner that would violate several settlement contracts and water-right permit terms that apply to the water stored in the reservoir. The RDEIR/SDEIS relies on the same modeling and reaches the same conclusions regarding surface water impacts. (RDEIR/SDEIS, p. 4.1-43.) Therefore, our agencies' comments on flaws in the hydrologic modeling and analysis for the BDCP Draft EIR/EIS (Alternative 4) are incorporated and restated regarding the new proposed California WaterFix RDEIR/SDEIS alternatives (Alternatives 4A, 2D, 5A).</p>	<p>As described in Appendix 5A, Section B, CALSIM II and DSM2 Model Simulations and Assumptions, in the EIR/EIS, water deliveries to senior water rights holders in the Delta watershed are completed by the CALSIM II model prior to any SWP and CVP water contract deliveries. However, during low storage conditions in Folsom Lake, full water rights deliveries are not consistently available due to dead pool issues.</p> <p>The EIR/EIS evaluates long-term operation of the SWP and CVP over an 82-year long hydrologic period with extended wet periods and dry/critical dry periods. The analyses were not conducted to identify specific values or to respond to short-term emergency situations, such as the recent drought. Separate engineering and environmental studies have been and will continue to be prepared when water quality criteria and other regulations are modified in emergencies. Effects due to climate change are not due to implementation of the proposed action and are provided for informational purposes only and do not lead to mitigation.</p> <p>Responses to comments on the Draft EIR/EIS are included in this Final EIR/EIS.</p>
2588	13	<p>The RDEIR/SDEIS is so poorly organized and confusing that it is difficult to understand the proposed project's impacts. One example is that the RDEIR/SDEIS contains substantial revisions to the BDCP Draft EIR/EIS chapter on aquatic resources. However, the majority of the revised chapter does not indicate what has changed in these revisions. To understand the new revised analysis, a reader would have to do a line-by-line comparison of the approximately 3000-page chapter in the BDCP Draft EIR/EIS with the approximately 430 pages of changes presented in the RDEIR/SDEIS.</p> <p>Another example of the RDEIR/SDEIS's flaws is the different timeframes under which the previous and new alternatives were analyzed. The RDEIR/SDEIS contains impact analyses for new proposed alternatives 4A, 2D and 5A that are for "early long term" (2025) conditions. However, the BDCP Draft EIR/EIS analyzed the previous proposed alternatives, including Alternative 4, for "late long term" (2060) conditions. The RDEIR/SDEIS contains no discussion that would assist the reader in comparing the impacts analyzed for the previous and new alternatives to one another. (See, e.g., ES-41 et seq. (comparing impact significance determinations for alternatives 2D, 4, 4A and 5A, but not stating whether "early long term" or "late long term" conditions were used).)</p> <p>Because of the numerous fundamental flaws in the RDEIR/SDEIS and the previous BDCP documents, the proposed project should be reconsidered and the RDEIR/SDEIS should be revised before any decisions are made regarding permitting or implementing the proposed project.</p>	<p>In response to public and agency input, the joint RDEIR/SDEIS was prepared in compliance with the requirements of CEQA and NEPA. This recirculated document updated analysis to respond to many of these comments. Before the selection and approval of an alternative considered, the Lead Agencies must comply with the necessary state and federal environmental review requirements. This document, along with the BDCP Draft EIR/EIS, and expected Final EIR/EIS are intended to provide sufficient CEQA and NEPA support for approval of the proposed project or any of the action alternatives for either compliance strategy. As implementation of the proposed project or any of the action alternatives will require permits and approvals from public agencies other than the Lead Agencies, the CEQA and NEPA documents are prepared to support the various public agency permit approvals and other discretionary decisions. These other public agencies are referred to as responsible agencies and 20 trustee agencies under CEQA (State CEQA Guidelines Sections 15381 and 15386) and cooperating agencies under NEPA (e.g., USACE and EPA).</p> <p>Discussion of the main environmental attributes affecting individual covered species are provided in Appendix 2.A of the 2013 Public Draft. Effects of the proposed water conveyance and associated restoration activities on general resource areas are discussed in Ch. 4 of the RDEIR/SDEIS. Resource areas are addressed separately under sections for each of the new project Alternatives, including surface water, groundwater, water quality, fish and aquatic resources, terrestrial biological resources, agricultural resources, air quality and greenhouse gases, public health, and others. Where impacts are determined to be significant, environmental commitments will be implemented to avoid and/or offset these effects, where possible.</p> <p>The Cumulative Impact Analyses that was written for the 2013 Public Draft EIR/EIS has been revised to include the impacts associated with the new proposed project alternatives and also updates past analyses. Environmental Commitments are to minimize effects to the Delta and its inhabitants and mitigate for loss of habitat to the ecosystem and its species. For more information please see Section 5 Revisions to Cumulative Impact Analyses, Appendix A Chapter 11 Fish and Aquatic Resources, Appendix A Chapter 12</p>

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			<p>Terrestrial Biological Resources, and Appendix 3B Environmental Commitments, AMMs, and CMs of the RDEIR/SDEIS.</p> <p>With regards to cumulative impacts, please see Master Response 9. With regards to mitigation and environmental commitments, please see Master Response 22.</p>
2589	1	<p>CSLC [California State Lands Commission] staff has reviewed the EIR/EIS and Alternative 4A, and provides the following comments with regard to activities that would occur on State-owned sovereign land in various waterways under the jurisdiction of the CSLC. In particular, as discussed in Section 4.3.11 of the EIR/EIS, the implementation of Alternative 4A would require that alternative bank fishing access sites be provided for the public as part of mitigation measure REC-2. Mitigation measure REC-2, as fully described on page 15-19 of Appendix A, Chapter 15, would require the enhancement of formal fishing access sites to compensate for the loss of informal fishing access sites during construction of the new intakes. Please be advised that new construction, expansion or re-location of public access or recreational sites on State-owned sovereign land, including but not limited to boat launches, barge landings or public fishing facilities, will require a lease or other entitlement issued by the CSLC.</p>	<p>The lead agencies will coordinate with the appropriate agencies once implementation of Mitigation Measure REC-2 is underway, as outlined in the MMRP.</p>
2589	2	<p>Please be advised that while some of the waterways involved in the Project may not be under the CSLC's leasing jurisdiction, those waterways are still subject to a public navigational easement. This easement provides that the public has the right to navigate and exercise the incidences of navigation in a lawful manner on State waters that are capable of being physically navigated by oar or motor-propelled small craft. Such uses may include, but are not limited to, boating, rafting, sailing, rowing, fishing, fowling, bathing, skiing, and other water-related public uses. The activities completed under the Project must not restrict or impede the easement right of the public.</p>	<p>Waterways will still be navigable during construction and operation of the proposed project. The proposed project would result in temporary impacts to boaters and on-water recreationists. However, the project includes plans to reduce those impacts as much as possible with implementation of environmental commitments to prepare and implement a water navigation plan and provide notification of construction and maintenance activities in waterways (Final EIR/EIS Appendix 3B, Environmental Commitments). Additionally, Mitigation Measure TRANS-1a would reduce impacts on marine navigation by development and implementation of site-specific construction traffic management plans, including specific measures related to management of barges and stipulations to notify the commercial and leisure boating communities of proposed barge operations in the waterways.</p> <p>Barge routes and landing sites will be selected by the construction contractor and will be expected to comply with the following criteria:</p> <ul style="list-style-type: none"> • Maximize continuous waterway access between departure port and shaft site • Maintain minimum waterway width greater than 100 feet (assuming maximum barge width of 50 feet) • Use of existing barge landings where possible • Minimum water depth of 6 feet
2589	3	<p>CSLC [California State Lands Commission] staff has been involved in ongoing coordination with DWR regarding the Project and its potential to impact public trust uses and values. The EIR/EIS discloses the impacts of implementing the Bay Delta Conservation Plan on public trust uses including navigation and water-based recreation, commerce, and transportation. CSLC staff is available for further coordination to ensure that impacts to public trust uses are minimized during the implementation of the Project and its mitigation.</p>	<p>No issues related to the adequacy of the environmental impact analysis in the EIR/S were raised. The comment about CSLC's willingness to coordinate to ensure minimization of public trust uses during implementation is appreciated.</p>
2590	1	<p>Reflecting back on the past twenty five years, if not more, of regulatory decisions concerning the Bay-Delta ecosystem, financial investments in the environment, and</p>	<p>The comment raises concerns related to adverse existing conditions (e.g., ecosystem and fisheries). The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.</p>

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		countless reports and plans by federal, state, and local agencies, we all find ourselves in a rather frustrating position. In excess of forty million acre-feet have been reallocated or reserved from human use to environmental purposes. Over \$3 billion has been invested in ecosystem improvement projects. Yet, despite all these efforts, the ecosystem and fisheries of concern are still at risk. Indicators of improved population levels and stability are few. The status quo for both water management and ecosystem health remains unacceptable and the coequal goals put into law are still far from being realized. This entire work effort that began many years ago with the BDCP, may well be the last best hope for this generation of responsible agency managers to make and implement decisions so vitally needed for the next generation of Californians.	
2590	2	The Water Authority and Westlands Water District support the core concepts embodied in the planning process -- improving the ability of the Central Valley Project (CVP) and State Water Project (SWP) to meet their purposes, by constructing and operating new facilities and improving the operation of existing facilities. These improvements in water infrastructure could allow Reclamation and DWR to protect and restore the water supply across central and southern California for millions of individuals, farmers, and businesses, as well as the member agencies of the Water Authority, including Westlands. The improvements in infrastructure could also allow for important ecological benefits to the Delta. The manner in which the infrastructure is regulated--the operating criteria for the infrastructure--will determine if those core concepts will be achieved.	No issues related to the adequacy of the environmental impact analysis in the EIR/S were raised.
2590	3	Water Supply: The benchmark to measure whether water supply will be restored and protected was set in 2006, when federal, state, and local agencies, including Westlands Water District and other members of the Water Authority, along with non-governmental organizations, executed the planning agreement for the BDCP ("Planning Agreement"). (Planning Agreement, § 3.) At that time, the signatories to the Planning Agreement agreed that improvements to water infrastructure must provide water supplies at least to those levels available under State Water Resources Control Board Decision 1641 (D-1641) and up to full contract amounts when hydrology allows. The full contract amounts would require Reclamation to deliver approximately 3.3 million acre-feet of water. Under D-1641, their contract allocations under average hydrology were approximately 75% for the agricultural contractors, 95% for municipal and industrial water service contractors, 100% for San Joaquin River Exchange Contractors, and 100% for wildlife refuges. Those allocations require Reclamation to deliver approximately 2.9 million acre-feet of water annually, under average hydrologic conditions. The range from 2.9 (reduced per D-1641) to 3.3 (full contract) million acre-feet is in addition to transfer and exchange water and Section 215 water.	No issues related to the adequacy of the environmental impact analysis in the EIR/S were raised. All of the alternatives evaluated in the EIR/EIS would only divert water under existing water rights that were issued to DWR and Reclamation by the State Water Board with consideration for senior water rights and Area of Origin laws and requirements. Senior water rights holders are not affected by implementation of action alternatives. The amount of water that DWR and Reclamation would be able to pump from the proposed north Delta facilities is set by Federal regulating agencies, ESA compliance and project design, and not by the water contractors. Operations for the proposed project would still be consistent with the criteria set by the U.S. Fish and Wildlife Service and National Marine Fisheries Service biological opinions and State Water Resources Control Board Water Right Decision 1641 (D-1641), subject to adjustments made pursuant to the adaptive management process, as described in Chapter 5, Water Supply of the EIR/S. In addition to permitting constraints on daily operations of the SWP and CVP, DWR and Reclamation must maintain proper performance and bypass flows across fish screens when endangered and threatened fish species are present within the north Delta facilities area.
2590	4	Ecological Benefits: Significant uncertainty associated with science applicable to the Delta underlies the necessity for and efficacy of the operating criteria. As an example, one premise underlying the existing operating criteria is that drawing water from the north Delta to the south Delta through existing channels has significant adverse effects on fish species in the Delta. Indeed, hundreds of thousands of acre-feet of CVP and SWP pumping has been foregone based on this premise, even though the science underlying the premise and the specific prescriptions imposed based thereon are open to substantial and reasonable question. Assuming it is a valid premise, operations with the new conveyance facilities should provide substantial benefits for protected fish species compared to existing facility operations. Notwithstanding these benefits, the operational criteria that exist to guide today's facilities are proposed for operation with the proposed new conveyance. Additional criteria are also identified. These proposed operational criteria appear to be advanced, at	Please see Chapter 3 in the FEIR/EIS for an updated description of the Collaborate Science and Adaptive Management Program (CSAMP) and information on real-time operations. The CSAMP will support new science and research actions to fill important knowledge gaps on the Delta ecosystem and better elucidate effects of CVP and SWP operations on listed species. If new science suggests that operational changes may be appropriate that fall outside of the operational ranges evaluated in the EIR/EIS, biological opinion, and 2081b permit, the appropriate agencies will determine, within their respective authorities, whether those changes should be implemented.

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		least in part, based on "precautionary principles." Ongoing and collaborative scientific inquiry over the next decade should improve our understanding. Today's premise regarding the effects of operations should be displaced through new or refined knowledge and more informed policy decisions on the criteria required to avoid operations jeopardizing species or adversely modifying critical habitat.	
2590	5	<p>Approach to Environmental Review: As detailed in the RDEIR/SDEIS, the lead agencies advance an alternative approach to obtain authorization for take of species protected under federal and state laws. Through the RDEIR/SDEIS, the lead agencies provide options for obtaining necessary approvals under Section 7 of the federal Endangered Species Act (ESA) and permitting under the California Endangered Species Act (CESA), Fish and Game Code Section 2081, rather than by implementing a 50-year, joint Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP). The RDEIR/SDEIS includes several additional sub- alternatives under this alternative permitting structure, with the preferred sub-alternative being Alternative 4a (WaterFix). This alternative permitting structure and narrow sub-alternatives were developed after receiving extensive public comments and input from the United States Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife. The comments highlighted the complexities with implementing an expansive 50-year habitat conservation plan, given limits on our scientific understandings, the uncertainties associated with the science, and the assurances provided with conservation planning. The lead agencies have prepared the narrower sub-alternatives, including the preferred Water Fix, based on the premise that federal and state agencies will continue to develop actions to provide for conservation of species while protecting and restoring water supply, including, on a case-by-case basis, actions considered in Conservation Measures 3-21.</p> <p>Importantly, this approach taken by the lead agencies complies with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). The RDEIR/SDEIS provides the necessary supplementary data to satisfy fully the requirements of NEPA and CEQA. Indeed, in this document, the lead agencies have done what administrative agencies should do when faced with a complex set of issues such as those presented by this effort -- they have listened to comments on the first public review Draft EIR/S and addressed those comments in accordance with NEPA and CEQA through proposed project modifications, additional data and analysis. We urge the agencies to move promptly to a Final EIR/S.</p>	The issue raised by the commenter addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/S.
2590	6	The Final EIR/S, nonetheless, should better present the current state of the science and better explain how that science is being used to inform policy decisions. Specifically, the document should make clearer that scientific information concerning the Delta ecosystem is limited and often uncertain. As a result, decisions intended to protect fish and wildlife are often intuitive or taken as "precautions" but at great expense to the people of California. It is important for informed decisionmaking that the Final EIR/S provides more complete discussion of the limits of available scientific information. It supports including as part of the project a program that will advance the science as the construction on the conveyance proceeds.	Please also refer to Master Response 33 regarding adaptive management and monitoring, which is driven in large part by the recognition that scientific information concerning the Delta ecosystem is incomplete and uncertain. The commenter does not raise a specific issue related to the adequacy of the EIR/EIS.
2590	7	<p>The approach to achieving complementary goals of water supply and ecosystem improvements is environmentally appropriate and legally permissible.</p> <p>WaterFix is consistent with statewide policy objectives.</p>	The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.

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		<p>Restrictions on CVP operations have seriously harmed the communities, farms, refuges, and businesses served by the Water Authority member agencies, including Westlands Water District, and other public water agencies. [footnote 3: See, e.g., Letter from D. Nelson, T. Birmingham to R. Wulff, Comments of San Luis & Delta- Mendota Water Authority and Westlands Water District on the Draft EIR/S at pp. 3-6 (July 29, 2014).] To avoid further harm and to improve the ecological health of the Bay-Delta, the fundamental purpose of the planning effort was initially to make physical and operational improvements in the conveyance systems for the SWP and CVP, while allowing for restoration and protection of the ecosystem, water quality, and the water supplies. (Draft EIR/S at pp. 2-2, 2-5.) The alternate implementation approach embodied in WaterFix reflects the same fundamental purpose and reflects a continued commitment to furthering the coequal goals set forth in state law.</p>	
2590	8	<p>A comprehensive statewide approach, of which improvements to the delivery system are only one part, reflects practical realities and broad consensus concerning the many challenges facing California's current water management system. The California Water Action Plan explains:</p> <p>[T]he state's water management system is currently unable to satisfactorily meet both ecological and human needs, too exposed to wet and dry climate cycles and natural disasters, and inadequate to handle the additional pressures of future population growth and climate change. Solutions are complex and expensive, and they require the cooperation and sustained commitment of all Californians working together. To be sustainable, solutions must strike a balance between the need to provide for public health and safety (e.g., safe drinking water, clean rivers and beaches, flood protection), protect the environment, and support a stable California economy.</p> <p>(California Water Action Plan: Actions for Reliability, Restoration and Resilience at p. 1; see also id. at pp. 1-19.) [footnote 4: See also 2009 Delta Reform Act and 2010 Flow Criteria Report. Many factors contribute to the complexity and challenges of California water management, and no one aspect of the California Water Action Plan's solutions is sufficient to address them. (See, e.g., Challenges Facing the Sacramento-San Joaquin Delta, Delta Science Program, Delta Stewardship Council, September 28, 2015.) The San Luis & Delta Mendota Water Authority and Westlands Water District agree that, on a statewide basis, water supply reliability should also be addressed through conservation, desalination, water recycling, and other tools in the water management portfolio. Those measures alone are not enough, however, to resolve the state's water management challenges when "the very cornerstones of the water supply system are changing" due to complex factors associated with climate change, aging infrastructure, seismic and flood risks, population growth, and environmental sustainability. (See id. at p. 4; California Water Action Plan: Actions for Reliability, Restoration and Resilience at p. 1; see also id. at pp. 1-19.) As the RDEIR/SDEIS recognizes, "[f]or both environmental and economic reasons, there is an urgent need to improve and modernize the existing SWP/CVP conveyance system." (RDEIR/SDEIS at pp. ES-1, ES-3, ES-5 - ES-6.)]</p> <p>The public anticipates, and indeed expects, that the agencies will consider and implement a comprehensive statewide strategy to address water supply reliability and habitat restoration that not only is consistent with California's overall planning framework, but also is prudent, realistic, science-driven, and achievable. The proposal set forth in WaterFix meets this expectation and takes significant steps toward achieving the coequal goals by</p>	<p>This comment is consistent with the assumptions in the Proposed Project which are based on the fundamental purpose of the project to make physical and operational improvements to the SWP system in the Delta, water supplies of the SWP and CVP for users located south of the Delta, and Delta water quality consistent with statutory and contractual obligations of the SWP and CVP, as described in Chapter 2, Project Objectives and Purpose and Need, and Chapter 5, Water Supply, of the EIR/EIS. The project is just one element of the state's long-range strategy to meet anticipated future water needs of Californians in the face of expanding population and the expected effects of climate change. The project is not a comprehensive, statewide water plan, but is instead aimed at addressing many complex and long-standing issues related to the operations of the SWP and CVP in the Delta, including reliability of exported supplies. It is important to note that the project is not intended to serve as a statewide solution to all of California's water problems, and it is not an attempt to address directly the need for continued investment by the State and other public agencies in conservation, storage, recycling, desalination, treatment of contaminated aquifers, or other measures to expand supply and storage (as described in Section 1.C.3 of Appendix 1C, Water Demand Management).</p> <p>The issue raised by the commenter addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/S.</p>

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		protecting state water supplies from climate change and seismic risk, improving operational flexibility to respond to variable and changing circumstances, and implementing other measures (such as screened diversions) to benefit fish species. (See, e.g., RDEIR/SDEIS at pp. 3-1 - 3-11, 4.1-2 - 4.1-4; see also id. at pp. 1-1 - 1-12.)	
2590	9	<p>Analyzing the environmental impacts of WaterFix without comprehensive habitat restoration is permissible under NEPA and CEQA.</p> <p>Although the BDCP and other alternatives included in the Draft EIR/S include conservation measures that address conveyance and comprehensive ecosystem restoration, the lead agencies have the legal authority to add alternatives that narrow the effort and continue with this ongoing NEPA and CEQA process. The fundamental purpose of both the alternatives in the Draft EIR/S and those alternatives added through the RDEIR/SDEIS is to make physical and operational improvements to the water delivery system in the Delta, necessary to "[r]estore and protect the ability of the SWP and the CVP to deliver up to full contract amounts, when hydrologic conditions result in the availability of sufficient water, consistent with the requirements of State and federal law and the terms and conditions of water delivery contracts and other existing applicable agreements." (RDEIR/SDEIS at pp. 1-8.)</p>	This comment restates a project objective included in the EIR/EIS and is an opinion related to the merits of the California WaterFix.
2590	10	The adjusted approach reflects realigning the permitting options from ESA Section 10 and the California Natural Community Conservation Planning Act (NCCCPA) to ESA Section 7 and Fish and Game Code Section 2081. The adjusted approach allows decisionmakers to choose an alternative that is focused on the necessary physical and operational improvements to the water delivery system in the Delta that are fundamental to the purpose of the project. The quantity and reliability of water deliveries have been significantly eroded over approximately the past 25 years. WaterFix will allow the return of thousands of jobs and tens to hundreds of thousands of acres of fallowed croplands to production. (Sunding, Modeling the Economic Impact of Changes in Delta Water Supplies, 2012.)	The commenter states that the project will have a positive economic impact. The issue raised by the commenter addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/S.
2590	11	Repairing and improving water delivery infrastructure will also have important ecological benefits. The increased operational flexibility afforded by a "dual conveyance" system will reduce pumping from the south Delta, which will minimize hydrodynamic changes associated with that pumping and improve water quality in export service areas. [footnote 5: See Letter from C. Enos (DWR) to M. Jewell (ACOE) (August 24, 2015) (transmitting 404 permit application).] Also, the new conveyance will be protected from the impacts of climate change and seismic events, while being constructed in a way that improves conditions for aquatic life. The new diversion facilities will be located outside of the primary habitat for Delta Smelt and Longfin Smelt, and state-of-the-art fish screens at each intake will reduce entrainment.	No issues related to the adequacy of the environmental impact analysis in the EIR/S were raised.
2590	12	NEPA does not require each alternative that seeks improvements in conveyance to include habitat restoration. Instead, NEPA requires that only "connected actions" be reviewed together. WaterFix (or other alternatives that focus on conveyance) and habitat restoration efforts are not "connected actions." Courts have defined "connected actions" to be those where "it would be irrational, or at least unwise, to undertake the first phase if subsequent phases were not also undertaken." (Trout Unlimited v. Morton (9th Cir. 1974) 509 F.2d 1276, 1285.) As already shown, when proceeding under Section 7 and Section 2081, each action has independent utility and one can be constructed and operated without relying on the other project's construction. (See Thomas v. Peterson (9th Cir. 1985) 753 F.2d 754, 760	As indicated in the RDEIR/SDEIS and this Final EIR/EIS, Alternative 4A which is the California WaterFix proposes conveyance facility construction and operations and Environmental Commitments to reduce habitat and other effects of constructing and operating the proposed water conveyance facilities. These project components are all considered part of the proposed action under NEPA because of their connection to improve Delta ecosystem conditions and reduce effects of the conveyance facilities.

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		[projects with "independent utility" should be examined separately under NEPA.]	
2590	13	<p>CEQA likewise utilizes the "independent utility" test in determining whether two projects may be analyzed separately. (See Del Mar Terrace Conservancy, Inc. v. City Council (1992) 10 Cal.App.4th 712, 736 [a proposal that is related to a project but has independent utility and is not necessary for the project to proceed need not be included as part of the project description and may be reviewed in its own CEQA document, as a separate project]; Banning Ranch Conservancy v. City of Newport Beach (2012) 211 Cal.App.4th 1209, 1224 [same].) In fact, some that commented on the alternatives that included both conveyance improvements and habitat restoration demanded the consideration of new alternatives that would actually forego the construction of any conveyance and reduce water deliveries from the Delta while the ecosystem restoration efforts would proceed. (See, e.g., Env'tl Water Caucus Comment Letter (June 11, 2014) at p. 150.) Such alternatives are neither acceptable nor legally necessary under CEQA. They do show, however, that interested parties understand actions to improve conveyance improvements and actions to restore habitat have independent utility.</p>	<p>The issue raised by the commenter addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/S.</p>
2590	14	<p>CEQA also allows alternatives that result in separate consideration of infrastructure improvements (WaterFix) and ecosystem restoration efforts in response to public comments and new information. Under CEQA, public agencies are expected to respond to and account for information developed throughout the environmental review process that may guide and shape their proposed actions. (Pub. Resources Code, § 21091(d); CEQA Guidelines, § 15088.5; City of Maywood v. Los Angeles Unified School District (2012) 208 Cal.App.4th 362, 391.) Agencies are encouraged to make changes to projects to respond to new information revealed during the ongoing CEQA process or to address concerns raised in comments. (See Citizens for a Sustainable Treasure Island v. City & County of San Francisco (2014) 227 Cal.App.4th 1036, 1055, 1062 [project description may be flexible as needed to respond to conditions and events that affect its final configuration]; South County Citizens for Smart Growth v. County of Nevada (2013) 221 Cal.App.4th 316, 331-335 [project description and range of alternatives may evolve in response to information developed in the course of the agencies' review].) A project may change as it proceeds through CEQA review and other stages of the approval process. (Ibid.; see also Western Placer Citizens v. County of Placer (2006) 144 Cal.App.4th 890, 898; Kings County Farm Bureau v. City of Hanford (1990) 221 Cal.App.3d 692, 736.) As the Court of Appeal has observed:</p> <p>The CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold of the initial project; indeed, new and unforeseen insights may emerge during investigation, evoking revision of the original proposal.</p> <p>(County of Inyo v. City of Los Angeles (1977) 71 Cal.App.3d 185, 199.)</p> <p>Such insights may lead to consideration of a smaller project or revised configuration of the original proposal, and EIRs often include options for reducing the scope of the project or eliminating or reducing the size of various project components. (See CEQA Guidelines, § 15126.6; Western Placer Citizens, supra, 144 Cal.App.4th at p. 898 [changes to project phasing and implementation strategy were of the type anticipated by the CEQA process].) CEQA gives the lead agency authority to approve a project alternative rather than the proposed project, as well as "the flexibility to implement that portion of a project that satisfies their environmental concerns." (Sierra Club v. City of Orange (2008) 163 Cal.App.4th 523, 533; see also South County Citizens, supra, 221 Cal.App.4th at pp. 331-335;</p>	<p>The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.</p>

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		Dusek v. Redevelopment Agency (1985) 173 Cal.App.3d 1029, 1040-1041.)	
2590	15	Continuing the existing NEPA and CEQA environmental review process with additional alternatives that focus on conveyance improvements, without simultaneously assessing ecosystem restoration, is sensible, responds to public comments and is well within the lead agencies' discretion under the "independent utility" test. Further, the maximum environmental impacts of conveyance and habitat together have already been analyzed in the Draft EIR/S through the action alternatives contained therein. And, to find that the lead agencies must begin the process anew for solely WaterFix and other conveyance improvements focused sub-alternatives would not only be contrary to the law, but would needlessly waste resources and unduly postpone a decision on critical infrastructure improvements.	Comment indicates support for Alternative 4A; however, comment does not agree that additional environmental review process was necessary. In April 2015 state and federal agencies announced a new sub-alternative—Alternative 4A (California WaterFix) —which replaced Alternative 4 (the proposed BDCP) as the state's proposed project. Alternative 4A reflects the state's proposal to separate the conveyance facility and habitat restoration measures into two separate efforts: California WaterFix and California EcoRestore. These two efforts are a direct reflection of public comments and fulfill the requirement of the 2009 Delta Reform Act to meet co-equal goals. Since the 2013 draft EIR/S did not address the effects without the concurrent implementation of the conservation measures (many of which are part of the EcoRestore program) it was important to evaluate that alternative fully to inform the decision makers of the adverse and beneficial effects.
2590	16	An implementation strategy focused on conveyance improvements comports with the project's purpose/need and objectives under NEPA and CEQA. Likewise, the lead agencies' determination to add alternatives that focus on water infrastructure conforms fully with NEPA and CEQA requirements. The RDEIR/SDEIS revises the purpose and need / objectives but retains fundamental principles that have guided the planning process. (Compare BDCP Draft EIR/S at pp. 2-5 with RDEIR/SDEIS at p. ES-6.) Adding sub-alternatives that are focused on conveyance improvements meets the lead agencies' fundamental principles and the purpose and need / objectives.	The issues raised by the commenters address the merits of the project and do not raise any issues with the environmental analysis provided in the EIR/EIS documentation.
2590	17	Under NEPA, an environmental impact statement must include a purpose and need statement that helps begin the process of identifying a reasonable range of alternatives to be evaluated in detail. (See 40 C.F.R. § 1502.13.) NEPA regulations provide that an EIS "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." (Ibid.) Similarly, under CEQA, an environmental impact report must contain a "Statement of Objectives." (See CEQA Guidelines, § 15124(b).) The CEQA Guidelines explain: A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision-makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project. (Ibid.) Because the agencies are preparing a joint CEQA/NEPA document, it contains both "Project Objectives" under CEQA and a "Purpose and Need Statement" under NEPA. (Draft EIR/S at pp. 2-1–2-7.) Within that regulatory framework, it is well established that lead agencies have discretion under NEPA and CEQA to define the purpose and need / objectives for proposed projects. (See Friends of Southeast's Future v. Morrison (9th Cir. 1998) 153 F.3d 1059, 1066 [lead agencies have "considerable discretion" in establishing the purpose and need for a proposed project]; City of Angoon v. Hodel (9th Cir. 1986) 803 F.2d 1016, 1021 [reversing district court decision that "restated the purpose" of a proposed timber sale "in terms of a broad, generic public benefit"].) The lead agencies' exercise of "considerable discretion" in establishing the purpose and need is evaluated under a general standard of reasonableness. (Friends of Southeast's Future, supra, 153 F.3d at pp. 1066-67; see also CEQA Guidelines, § 15124(b); California Oak Foundation v. University of California (2010) 188 Cal.App.4th 227, 272-274; In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings (2008) 43 Cal.4th 1143, 1164.) [footnote 6: Agencies can only abuse this "considerable discretion" when they "define the objectives of [their] action in terms so	This comment is an opinion about the appropriateness of the project objectives and purpose and need statement in the RDEIR/SDEIS, and this Final EIR/EIS. Please see Master Response 3 for information on the Purpose and Need.

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		<p>unreasonably narrow that only one alternative ... would accomplish the goals of the agency's action." (Citizens Against Burlington, Inc. v. Busey (D.C. Cir. 1991) 938 F.2d 190, 196); see also City of Carmel-By-The-Sea v. U.S. Department of Transportation (9th Cir. 1997) 123 F.3d 1142, 1155 [Ninth Circuit's adoption of the Citizens Against Burlington standard].) Clearly, the RDEIR/SDEIS here does not suffer from a lack of alternatives.]</p> <p>Here, consistent with established case law, the lead agencies have soundly exercised their "considerable discretion" under NEPA and CEQA. Indeed, the purpose and need / objectives have been revised but the fundamental project purpose remains unchanged. The revisions to the purpose and need / objectives are lawful. (See City of Carmel-By-The-Sea v. U.S. Department of Transportation (9th Cir. 1997) 123 F.3d 1142, 1156; Habitat & Watershed Caretakers v. City of Santa Cruz (2013) 213 Cal.App.4th 1277, 1299.) And, as discussed above, the lead agencies have quite properly proposed additional alternatives based on a different implementation strategy expressly in response to public comments. (RDEIR/SDEIS at pp. ES-2 – ES-3.) Thus, based on the technical expertise of the lead agencies and public concern, WaterFix or other conveyance- based sub-alternatives may be pursued, and done so separately from comprehensive ecosystem restoration efforts.</p>	
2590	18	<p>WaterFix and other sub-alternatives focused on conveyance were developed in response to public comments; they provide clear statements of the scope and nature of the proposal, major components, and environmental consequences.</p> <p>The environmental review processes under NEPA and CEQA anticipate that the characteristics of a proposed project may change in response to public comments and other information obtained during the environmental review process. WaterFix (and the other new sub-alternatives) were developed consistent with this expectation. (See, e.g., RDEIR/SDEIS at pp. ES-1 - ES-40, 1-1 - 1-12, 3-1 - 3-11.) Information developed in the environmental review process suggested the lead agencies may be unable to obtain permits with desired assurances for alternatives proposed under Section 10 or the NCCPA due to strong opposition from the public or questions raised by permitting agencies regarding the effects of the conservation measures over a 50-year timeframe. For these reasons, among others, a new implementation strategy is proposed within a set of new sub-alternatives.</p>	<p>Please note that the preferred alternative is now Alternative 4A (i.e., the California WaterFix Project) and no longer includes an HCP. Issuance of 50-year ITPs and an NCCP permit is common to the HCP/NCCPA alternatives in the EIR/EIS, with the exception of the No Action Alternative. The three new sub-alternatives (4A, 2D, and 5A) developed by the Lead Agencies embody a different implementation strategy that would not involve a 50-year HCP/NCCP approved under ESA Section 10 and the NCCPA, but rather would achieve incidental take authorization for a much shorter period (between 11 and 15 years) under ESA Section 7 and California Endangered Species (CESA) Section 20181(b).</p> <p>Please see Master Response 4 (Alternatives) and Master Response 45 (Permitting) for additional information.</p>
2590	19	<p>Questions regarding the biological resources effects of conservation measures resulted in the sub-alternative approach, which appropriately "de-links" from the conveyance improvements the non-flow conservation measures. The addition of sub-alternatives would allow for a different permitting approach for take authorization to the "Section 7" process under the federal ESA, and the "Section 2081" process under CESA. (RDEIR/SDEIS at pp. 1-4 - 1-5, 4.1-1.) This is the process currently used to authorize the state and federal water projects. Habitat and other measures would be considered on a case-by-case basis as separate projects with separate environmental review and approvals. (RDEIR/SDEIS at pp. 1-13 - 1-29, 2-21 - 2-22, 4.1-1 - 4.1-4.) Additionally, other non-conveyance related water supply projects and programs could be aggressively pursued as stand-alone separate projects with separate environmental review and approvals under the umbrella of the California Water Action Plan -- as is the case with all alternatives, not only the new sub-alternative implementation approach.</p>	<p>Although many of the proposed alternatives included meritorious water policy principles, the proposals rejected by the Lead Agencies did not qualify as appropriate alternatives for various reasons. For example, proposals were rejected because they were inconsistent with the project's objectives and purpose and need or included components that are beyond the scope of the project. The text of the FEIR/EIS in Chapter 3 (section 3.2) and Appendix 3A to that document thoroughly explain the process used to develop the alternatives, and explain why certain potential alternatives were considered but ultimately rejected by the Lead Agencies. Please refer to Master Response 4 (Alternatives) for additional information on how DWR and the Federal Lead Agencies undertook an elaborate process to select an appropriate range of alternatives, with the Project's objectives and purpose in mind, to be analyzed in the FEIR/EIS that fully complied with all applicable legal requirements.</p>
2590	20	<p>The Draft EIR/S and RDEIR/SDEIS evaluate a reasonable range of alternatives.</p> <p>The lead agencies have likewise conducted the alternatives analysis as required by NEPA and CEQA. Indeed, between the fifteen alternatives considered in the prior Draft EIR/S, and</p>	<p>The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.</p>

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		<p>the additional three alternatives in the RDEIR/SDEIS, the federal and state decision makers and the public have a reasonable and abundant range of alternatives to consider. Through a three-step screening process, the lead agencies identified for detailed consideration nine different conveyance configurations at different locations with differing capacities and six different operating scenarios. After the lead agencies received public comments on the Draft EIR/S and input from permitting agencies, the legal agencies determined the conveyance improvements and more extensive habitat restoration might need to proceed on separate tracks. The lead agencies thus identified in the RDEIR/SDEIS three additional sub-alternatives, but which carry forward the same conveyance Alternatives 2, 4, and 5 that were selected through an exhaustive screening process. The lead agencies' responsiveness to public comments and sensitivity to concerns should be commended.</p>	
2590	21	<p>The RDEIR/SDEIS provides a reasonable range of appropriate alternatives under NEPA. NEPA requires a lead agency to "study, develop, and describe appropriate alternatives to recommend courses of action." (42 U.S.C. § 4321(2)(E); see also 40 C.F.R. § 1502.1 [the lead agency must identify and analyze "reasonable alternatives" to the proposed project "which would avoid or minimize adverse impacts..."].) In developing the range of alternatives, the number of, and differences between, the alternatives "depends on the nature of the proposal and the facts in each case." (CEQ, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations (Mar. 21, 1981) ("CEQ Forty Questions"), at p. 1.b.) The Ninth Circuit has described the obligation to produce a range of alternatives as being "governed by a 'rule of reason' that requires an agency to set forth only those alternatives necessary to permit a 'reasoned choice.'" (California v. Block (9th Cir. 1982) 690 F.2d 753, 767.) All contemplated alternatives should be "derive[d] from an Environmental Impact Statement's 'Purpose and Need' section" which defines the goals of the project. (Carmel-By-The-Sea, supra, 123 F.3d at p. 1155.) The range of reasonable alternatives provided to decision makers and the public need not be "infinite" in number (CEQ Forty Questions at 1.b.), or contrary to the purpose and need of the proposed project. (Friends of the Southeast's Future v. Morrison (9th Cir. 1998) 153 F.3d 1059, 1067.)</p>	<p>This comment is an opinion about the reasonable range of alternatives in the EIR/EIS.</p>
2590	22	<p>Because of the potential shift from the Section 10/NCCPA to Section 7/Section 2081, the conservation measures (CM3-21) found in the Draft EIR/S are no longer germane to sub-alternatives narrowed to conveyance improvements focused on protecting and restoring water supply. (RDEIR/SDEIS at p. ES-6.) These sub-alternatives include different conveyance configurations, intakes, capacities, operational scenarios, and mitigation measures. (See Table 4.1-4 [comparing basic configurations of each alternative].) Standing alone, the array of three sub-alternatives, plus the No Action Alternatives, provides the decision makers and the public a reasonable range of choices for how to meet the stated purpose and need. Combined with the original fifteen alternatives and the historical context, in which hundreds if not thousands of conveyance alternatives have been explored, unquestionably there is a wide array of options for how best to meet the need for improved water reliability, while allowing for protection and restoration of fish and wildlife.</p> <p>Given the existing 18 alternatives and sub-alternatives, each with differing configurations, intakes, capacities, and operating scenarios, there is no legal basis for the lead agencies to add even more alternatives for consideration, as some have suggested. Additional water conveyance alternatives would likely add little in the way of significant options for public consideration. Nor do the lead agencies have any obligation to consider alternatives that would not construct new water conveyances or would reduce water deliveries. Although the</p>	<p>The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS. Please refer to Master Response 4 for additional details on the selection of alternatives.</p>

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		<p>No Action Alternative must be analyzed, NEPA does not require the lead agencies to consider alternatives that are actually counterproductive in executing the purpose and need of the project. (See, e.g., Seattle Audubon Scty. v. Moseley (9th Cir. 1996) 80 F.3d 1401, 1404 [an EIS need not "consider alternatives that are unlikely to be implemented or those inconsistent with its basic policy objectives"]; Headwaters, Inc. v. Bureau of Land Mgmt. (9th Cir. 1990) 914 F.2d 1174, 1180 ["Nor must an agency consider alternatives that are infeasible, ineffective, or inconsistent with the basic policy objectives..."].) Given the complexity of the Delta, the eighteen alternatives and sub-alternatives provide more than a reasonable range of alternatives for implementing the proposed project and the lead agencies should be lauded for the significant effort required to present such a variety of options to the public.</p>	
2590	23	<p>The RDEIR/SDEIS provides a reasonable range of potentially feasible alternatives under CEQA.</p> <p>Under CEQA, the EIR must describe a reasonable range of potentially feasible alternatives to the proposed project that could attain most of the project's basic objectives while reducing or avoiding any of its significant effects. (CEQA Guidelines, § 15126.6(a)-(f).) An environmental impact report need not, however, present alternatives that are incompatible with fundamental project objectives. (California Oak Foundation v. Regents (2010) 188 Cal.App.4th 227, 275.) "There is no ironclad rule governing the nature or scope of the alternatives to be discussed." (CEQA Guidelines, § 15126.6(a).) The agency's alternatives analysis will be upheld as long as there is a reasonable basis for the choices it has made. (City of Maywood v. Los Angeles Unified School Dist. (2012) 208 Cal.App.4th 362, 414, 416.) The selection of alternatives discussed in an EIR will be overturned only if the alternatives "are manifestly unreasonable and they do not contribute to a reasonable range" of options. (Town of Atherton v. California High Speed Rail Authority (2014) 228 Cal.App.4th 314, 353; Cherry Valley Pass Acres & Neighbors v. City of Beaumont (2010) 190 Cal.App.4th 316, 355.) The RDEIR/SDEIS, particularly when read with the Draft EIR/S, complies fully with these principles and fosters informed public participation and informed decision-making in accordance with CEQA. (RDEIR/SDEIS, Section 4.) Indeed, the evaluation of alternatives in the Draft EIR/S and RDEIR/SDEIS is more than "reasonable" as required under CEQA; it is exhaustive. (Ibid.)</p>	<p>The lead agencies agree that 2013 Draft EIR/EIS and the 2015 RDEIR/SDEIS provide a sufficient range of alternatives including 15 alternatives and 3 new subalternatives. Four major alignments have been included in the EIR/S: Through-Delta, East of the Sacramento River, West of the Sacramento River, and a Tunnel under the Delta. Many additional proposals by public and private individuals and organizations have also been evaluated and described in Chapter 3 of the BDCP EIR/S and Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1.</p>
2590	24	<p>Several comments on the Draft EIR/S suggested that the lead agencies had to evaluate various additional alternatives to the conveyance project as proposed. The lead agencies have considered a wide range of alternatives to the conveyance throughout the long history of the proposed project, and evaluated the potential feasibility of each suggested alternative in detail. As explained in the Draft EIR/S, the alternatives suggested by commenters are not feasible. (See, e.g., Draft EIR/S at pp. 3A-12, 3A-49.) The fact that commenters may continue to disagree with the agencies' conclusions does not render the range of alternatives considered "manifestly unreasonable." (Town of Atherton, supra, 228 Cal.App.4th at p. 353; see also Ballona Wetlands Land Trust v. City of Los Angeles (2011) 201 Cal.App.4th 455, 475.) [footnote 7: Broad considerations of policy come into play when an agency decides whether to approve a proposed project. (Rialto Citizens for Responsible Growth v. City of Rialto (2012) 208 Cal.App.4th 899, 948-949.) If the agency determines that the proposed action will best achieve project objectives taking account of relevant economic, environmental, social, technological, legal, and other factors, it may approve the project and find the alternatives "infeasible." (California Native Plant Society v. City of Santa Cruz (2009) 177 Cal.App.4th 957, 982, 1000-1001; Uphold Our Heritage v. Town of</p>	<p>The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.</p>

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		<p>Woodside (2007) 147 Cal.App.4th 587, 596-598.])</p> <p>The RDEIR/SDEIS need not consider additional alternatives, including alternatives that are not potentially feasible and/or are contrary to the project's fundamental purpose. (In re Bay-Delta, supra, 43 Cal.4th 1143.)</p>	
2590	25	<p>Mitigation measures must comply with all applicable laws, but measures that exceed the applicable requirements under NEPA and CEQA for mitigation or state and federal Endangered Species Acts should either be identified as doing such or not discussed in the Final EIR/S.</p> <p>Under CEQA, an EIR must propose and describe mitigation measures to lessen or avoid the potentially significant environmental impacts of a proposed project. (Pub. Resources Code, §§ 21002.1(a), 21100(b)(3); CEQA Guidelines, § 15126.4.) The mitigation requirement implements CEQA's policy--sometimes called its "substantive mandate"--that requires agencies to take feasible steps to minimize environmental harm. (Pub. Resources Code, §§ 21002, 21081(a).) Mitigation measures are designed to lessen the severity of the project's impacts to the extent reasonably feasible, not necessarily to eliminate them. ((Pub. Resources Code, § 21100(b)(3); CEQA Guidelines, § 15126.4(a)(1).) Any action designed to minimize, reduce, or avoid a significant environmental impact, or to rectify or compensate for the impact, qualifies as a mitigation measure. (CEQA Guidelines, §§ 15126(a)(1), 15370.)</p> <p>Likewise under NEPA, the discussion of potential mitigation measures is an important part of the decision-making process, and each EIS should include "appropriate mitigation measures not already included in the proposed action or alternatives." (40 C.F.R. § 1502.14(f); see also id., § 1502.16(h); Carmel-By-The-Sea, supra, 123 F.3d at p. 1154 [to meet the "action forcing goals" of NEPA, an agency must include "a reasonably thorough discussion of mitigation measures" in an EIS].) As under CEQA, "mitigation" is defined under NEPA as "Avoiding," "Minimizing," "Rectifying," "Reducing or eliminating" or "Compensating for" the impact of "the action" under consideration. (See NEPA regulations, 40 C.F.R. § 1508.20; see also CEQA Guidelines, § 15370 [same].) Hence, mitigation need not address unrelated or pre-existing federal or private actions. (See 16 U.S.C. § 1536(a)(2) [under the ESA, federal agencies must "insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize" endangered or threatened species or their habitat].) NEPA differs from CEQA, however, in that it imposes no substantive mitigation requirement. [footnote 8: Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council (1978) 435 U.S. 519, 588.] An EIS need only describe potential environmental impacts from contemplated major agency actions in order to inform the federal decision maker and the public. (Methow Valley, supra, 490 U.S. at p. 350.)]</p>	<p>The issues raised by the commenter address the merits of the project and do not raise any specific issues related to the environmental analysis provided in the EIR/S.</p>
2590	26	<p>The RDEIR/SDEIS identifies mitigation measures for the new sub-alternatives drawing from the same framework as in the conservation plan by keeping the mitigation portions of CM3-21. (RDEIR/SDEIS at pp. 4.1-1, 4.1-5.) The conservation plan (CM3-21) addressed two functions: 1) mitigation for direct impacts of the project; and 2) species conservation and management to meet conservation plan requirements to assist in species recovery. (See 16 U.S.C. § 1539(a)(2)(B)(iv); Fish & G. Code, § 2820(a)(3).) All told, the mitigation measures in the RDEIR/SDEIS include 11 environmental commitments [footnote 9: See RDEIR/SDEIS at pp. 4.1-14 - 4.1-18; 4.1-24 - 4.1-29; 4.1-32 - 4.1-36; Appendix 3B.] and 27 avoidance and minimization measures. [footnote 10: See RDEIR/SDEIS at pp. 3B-77 - 3B-81 [summary table]; 3B-81 - 3B-148 [describing each mitigation measure in detail].] Together, the project</p>	<p>The mitigation measures, AMMs, and Environmental Commitments proposed in the EIR/S do bear a rough proportionality to the impacts of the proposed project. The commenter states that the mitigation for methylmercury goes above and beyond the mitigation required for the proposed project's restoration measures. However, Alternative 4A would result in two significant impacts—electrical conductivity (EC) at Emmatton and Prisoners Point, and mercury associated with the limited tidal habitat restoration that would be implemented. For Alternative 4A, Environmental Commitment 12 "Methylmercury Management" would be implemented only at sites restored under Environmental Commitment 4 "Tidal Natural Communities Restoration", which is the restoration that would result in significant impacts. Therefore, the impact and the Environmental Commitment are directly related.</p> <p>The lead agencies do not plan to fund measures that constitute a general public benefit, that go beyond</p>

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		<p>description, mitigation measures, environmental commitments, and avoidance and minimization measures for the new sub-alternatives all have elements intended to avoid or lessen adverse environmental impacts. (RDEIR/SDEIS at Appendix 3B.) [footnote 11: For WaterFix, the RDEIR/SDEIS identifies mitigation measures that reduce most environmental impacts to a less than significant level. (See SDEIS Table ES-9.)] These descriptions enable decisionmakers and the public to understand how anticipated environmental impacts will be avoided or substantially lessened through implementation of effective and enforceable mitigation measures.</p> <p>However, with regard to WaterFix, and other new sub-alternatives, some of the proposed environmental commitments for the new sub-alternatives in the RDEIR/SDEIS go beyond impact mitigation and the requirements of the state and federal Endangered Species Acts and provide for habitat enhancement. [footnote 12: See, e.g., Environmental Commitment 11, Natural Communities Enhancement and Management – at sites protected or restored under Environmental Commitments 3-10; Environmental Commitment 12, Methylmercury Management—at sites restored under Environmental Commitment 4. Moreover, at least one other environmental commitment is identified as necessary to address effects that are not clearly shown to be impacts from WaterFix. (See RDEIR/SDEIS at p. 4.1-18 [Environmental Commitment 16, Nonphysical Fish Barrier--to address "effects related to survival of outmigrating salmonids"].)] For example, the RDEIR/SDEIS includes commitments to "improve conditions for endangered and threatened aquatic species in the Delta," such as requiring higher outflows in relation to existing conditions to improve/restore the Delta estuary and improve habitat/conditions for fish. [footnote 13: See, e.g., RDEIR/SDEIS at pp. ES-18 - ES-21.] The lead agencies or other project proponents should not be expected to fund measures that constitute a general public benefit, that go beyond what is needed to mitigate the impacts of the project under NEPA, CEQA or to address requirements of the state and federal Endangered Species Acts. [footnote 14: Similarly, suggestions that proponents provide "assurances" that unspecified long-term conservation will be implemented to manage potential future effects of climate change are also misplaced. (See Review by the Delta Independent Science Board of the Bay Delta Conservation Plan/California WaterFix Partially Recirculated Draft Environmental Impact Report/ Supplemental Draft Environmental Impact Statement (Sept. 30, 2015) (Delta ISB Comments).) Neither NEPA nor CEQA require such "assurances." Mitigation measures are necessary to off- set the potential environmental effects of the project itself, not other potential causes of environmental impacts. At the same time, NEPA and CEQA seek to examine the total impact of a project. Hence, it remains prudent for the lead agencies to also consider the "late long-term" climate change analysis in the Final EIR/S when evaluating the effects of the new sub- alternatives.] Alternatively, they should be excluded from the Final EIR/S and the approved project.</p>	<p>what is needed to mitigate the impacts of the project under NEPA, CEQA. Nor does the EIR/S provide "assurances" that unspecified long-term conservation will be implemented to manage potential future effects of climate change. All AMMS, mitigation measures, and Environmental Commitments are directly tied to the impacts from the proposed project. Further, Appendix 3B (as modified in the RDEIR/SDEIS) includes, after each specific environmental commitment, one or more narrative discussions explaining both how it reduces the severity of environmental effects and whether the level of impact reduction is sufficient to render the effects less than significant.</p> <p>Please refer to Master Response 1 regarding the baselines used for the CEQA and NEPA analyses, and why the NEPA analysis for the sub-alternatives relies upon the early long term No Action Alternative.</p> <p>For responses to comments related to the Delta Independent Science Board’s letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.</p>
2590	27	<p>The RDEIR/SDEIS cumulative impacts analysis complies with NEPA and CEQA and accounts for the potential cumulative impacts of ecosystem restoration efforts.</p> <p>The RDEIR/SDEIS includes an improved cumulative impacts analysis that appropriately accounts for the potential cumulative impacts of "past, present, and reasonably foreseeable future actions." (40 C.F.R § 1508.7; see also Pub. Resources Code, § 21083(b)(2); CEQA Guidelines, §§ 15065(a)(3), 15130(a), 15355(b).) The improved cumulative impacts analysis provides important updates to the prior cumulative impacts analysis and, importantly, accounts for the projected impacts associated with ecosystem restoration. Taken as a whole, the cumulative impacts analysis is comprehensive and allows the agencies—as well</p>	<p>This comment is an opinion about the adequacy of the cumulative impacts analysis in the RDEIR/SDEIS. No specific comments on the EIR/EIS are identified.</p>

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		<p>as the public—to take a hard look at the potential impacts of the proposed action in combination with other existing or reasonably foreseeable projects.</p> <p>A critical limit in NEPA cumulative impacts analysis is that agencies are only required to consider "reasonably foreseeable future actions." (40 C.F.R § 1508.7 [italics added]; see also CEQA Guidelines, § 15065(a)(3) [cumulative effect is determined based on an assessment of the project's incremental impact "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (italics added)].) Thus, agencies are not required to evaluate the potential cumulative impacts of future actions that are "too speculative at the time the EIS was prepared." (Coalition for Canyon Preservation v. Bowers (9th Cir. 1980) 632 F.2d 774, 783.) "Ninth Circuit precedent defines a 'reasonably foreseeable' action, for which cumulative impacts must be analyzed, to include 'proposed actions,' such as actions for which an agency has issued a press release or a notice of intent. (Northern Alaska Environmental Center v. Kempthorne (9th Cir. 2006) 457 F.3d 969, 980.) Conversely, other potential future projects which have not yet reached the formal proposal stage need not be included in a cumulative impacts analysis. CEQA Guidelines impose similar limitations on cumulative impact analysis, where an assessment of the project's incremental impact is "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (CEQA Guidelines, § 15065(a)(3) [italics added]; see also Rialto Citizens for Responsible Growth v. City of Rialto (2012) 208 Cal.App.4th 899, 934-931 [cumulative impacts analysis under CEQA does not require speculation].)</p>	
2590	28	<p>Under NEPA and CEQA, lead agencies have discretion in determining which potential impacts must be analyzed as cumulative impacts. For a NEPA analysis, the Ninth Circuit has "recognize[d] that 'the determination of the extent and effect of [cumulative impact] factors, and particularly identification of the geographic area in which they may occur, is a task assigned to the special competency of the appropriate agencies.'" (Blue Mountain Biodiversity Project v. Blackwood (9th Cir. 1998) 161 F.3d 1208, 1215, quoting Kleppe v. Sierra Club (1976) 427 U.S. 390, 414; see also Kleppe, supra, 427 U.S. at p. 412 ["Resolving these issues requires a high level of technical expertise and is properly left to the informed discretion of the responsible federal agencies"].) Thus, in the context of a cumulative impacts analysis, the Ninth Circuit has cautioned that "[i]t is not for this court to tell the [agency] what specific evidence to include, nor how specifically to present it." (League of Wilderness Defenders-Blue Mountains Biodiversity Project v. U.S. Forest Service (9th Cir. 2008) 549 F.3d 1211 [italics in original].) Applying this standard, the Ninth Circuit has cautioned against "fly-speck[ing]" an EIS to identify errors and missing information. (Churchill County v. Norton (9th Cir. 2001) 276 F.3d 1060, 1081.) Rather than second-guessing the agency, the court's role is limited to determining whether an agency has "taken the requisite 'hard look' at the cumulative environmental impacts of the action alternatives." (Ibid.)</p> <p>CEQA provides similar deference to agencies in determining which impacts must be included in a cumulative impacts analysis. (See CEQA Guidelines, §§ 15126 (a), 15126.2(a), 15130(a), (b).) This includes the discretion to determine whether the substance and location of a potential impact qualifies as a cumulative impact. (City of Long Beach v. Los Angeles Unified School District (2009) 176 Cal.App.4th 889, 906-912 [agency has discretion to apply its expertise in selecting an appropriate scope of assessment]; Ebbetts Pass Forest Watch v. Department of Forestry & Fire Protection (2004) 123 Cal.App.4th 1331, 1352 [same].) Thus, CEQA provides discretion to agencies in defining the scope of both the projects and the</p>	<p>This comment is an opinion about the adequacy of the cumulative impacts analysis in the RDEIR/SDEIS and the discretion lead agencies have in preparing cumulative impact analyses. No specific comments on the EIR/EIS are identified.</p>

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		impacts analyzed under a cumulative impacts analysis.	
2590	29	<p>For those projects and impacts that are included in a cumulative impacts analysis, the lead agencies need only provide "quantified or detailed information" about potential effects to provide the requisite "hard look" under NEPA. (See <i>Klamath-Siskiyou v. Bureau of Land Management</i> (9th Cir. 2004) 387 F.3d 989, 994.) It need only provide "sufficient detail to assist the decisionmaker in deciding whether, or how, to alter the program to lessen cumulative impacts." (<i>Churchill County v. Norton</i> (9th Cir. 2001) 276 F.3d 1060, 1080.) CEQA imposes a similar requirement, describing cumulative impacts assessments as "need not provid[ing] as great detail as is provided for the effects attributable to the project alone." (CEQA Guidelines, § 15130(b).) A cumulative effects discussion should provide a level of detail that corresponds to the severity of the impact and the likelihood that it will occur, "guided by standards of practicality and reasonableness. (CEQA Guidelines, § 15130(b).) Exhaustive analysis is not required. (<i>Association of Irrigated Residents v. County of Madera</i> (2003) 107 Cal.App.4th 1383, 1404.)</p> <p>The lead agencies properly exercised their discretion under NEPA and CEQA to determine the proper scope of the cumulative impacts assessment and which impacts to describe and analyze in detail. Moreover, the level of detail is more than sufficient to inform the public and the agency's decisionmaking process as required under NEPA and CEQA. The revisions and updates to the cumulative impact analysis in the RDEIR/SDEIS evaluate the potential effects of concurrent projects. They consider potential additive effects of project components that are constructed during the same time period, as well as describing the revisions to the cumulative analysis under each resource topic and the effects of these revisions on the cumulative impact analysis when considered in concert with the effects of the concurrent project effects. (RDEIR/SDEIS at p. 5-1.) Detailed assessment of cumulative effects is made for each of the project alternatives, at a level of detail more than sufficient to satisfy NEPA and CEQA requirements. (RDEIR/SDEIS at pp. 5-1 - 5-235 [Section 5].)</p>	The commenter expresses support for the adequacy of the cumulative impact analysis and does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.
2590	30	<p>Building on the cumulative impacts analysis in the Draft EIR/S, the RDEIR/SDEIS provides a quantified and detailed analysis of cumulative impacts that will allow the agencies to take the requisite hard look at the proposed action. For example, due to the passage of time, the lead agencies updated the proposed future actions that should be included in the analysis. (See RDEIR/SDEIS at p. 5-2 ["Proposed future projects, that have since become more defined or developed since 2011, have been added into the cumulative impacts analysis as appropriate in either a qualitative or quantitative fashion".]) The lead agencies also made a number of changes to reflect the revised nature of the proposed action. For example, impacts associated with the California EcoRestore program are now addressed in the cumulative impacts analysis. (Id. at pp. 5-3 - 5-4.) Further, in addition to the red-lined changes to the initial cumulative impacts analysis, the agencies provided more than 200 additional pages dedicated to cumulative impacts in the RDEIR/SDEIS.</p>	This comment is an opinion about the adequacy of the cumulative impacts analysis in the RDEIR/SDEIS and the discretion lead agencies have in preparing cumulative impact analyses. No specific comments on the EIR/EIS are identified.
2590	31	<p>An example of the detail included in the revised cumulative impacts analysis can be seen in the section addressing Fish and Aquatic Resources. (RDEIR/SDEIS at pp. 5-93 et seq.) Table 11-13 describes 55 individual programs, policies, and projects that could affect fish and aquatic resources. Further, for each specific cumulative impact associated with fish and aquatic resources, the RDEIR/SDEIS separately analyzes the potential cumulative impacts, evaluates their implications under NEPA and CEQA, and identifies potential mitigation measures. (See, e.g., RDEIR/SDEIS at pp. 5-101 - 105 [addressing Impact AQUA-CUM1: Effects of Construction of Facilities on Covered Fish Species].) This detailed and</p>	No issues related to the adequacy of the environmental impact analysis in the EIR/S were raised.

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		comprehensive analysis is precisely the type of evaluation contemplated by NEPA and CEQA.	
2590	32	<p>Using adaptive management to address potential impacts from construction is appropriate under NEPA and CEQA given the complexities and uncertainties of the Delta environment and the long timeframe for constructing the project.</p> <p>The RDEIR/SDEIS addresses fully the quantifiable construction impacts of this proposed action. Extensive data and information are provided to the lead agencies' decision makers who will evaluate the effects the conveyance. Moreover, the Draft EIR/S and RDEIR/SDEIS appropriately incorporate adaptive management to allow for more informed decision-making prior to the conveyance improvements becoming operational.</p>	The issues raised by the commenters address the merits of the project and do not raise any issues with the environmental analysis provided in the EIR/EIS documentation.
2590	33	"Adaptive management is an approach to natural resources management As each choice is made, data on the effects of these choices are collected and analyzed in order to assess whether to retain, reverse, or otherwise alter the policy choice." (In re Operation of the Missouri River System Litig. (D. Minn. 2004) 363 F.Supp.2d 1145, 1163-64, aff'd, (8th Cir. 2005) 421 F.3d 6189.) Adaptive management has been used by federal agencies for over 20 years. It adopts a "predict-mitigate- implement-monitor-adapt" methodology consistent with 40 C.F.R. §§ 1505.2(c) and 1503.3, which recommend that lead agencies implement monitoring and enforcement mechanisms for mitigation measures when warranted. (See Save Panoche Valley v. San Benito County (2013) 217 Cal.App.4th 503, 524 [lead agency may rely on future studies to devise the specific design of mitigation measures when results of future studies are used to tailor mitigation measures to fit on-the-ground environmental conditions].) The adaptive management approach is an appropriate and well-established tool to monitor and adjust mitigation measures as they are implemented. This flexibility is greatly needed when undertaking actions in an environment as complex as the Delta and where there may be significant data but there is limited science and a degree of uncertainty associated with that science exists.	This comment is an opinion supporting the adaptive management and monitoring approach presented in the EIR/EIS. Please also refer to Master Response 33, related to the proposed adaptive management and monitoring program for California WaterFix.
2590	34	<p>Contrary to the impression of some, adaptive management is not an exercise in simply deferring the details of mitigation to a later date while avoiding public scrutiny under NEPA or CEQA. Such misrepresentations have commonly been the basis for unsuccessful challenges to adaptive management plans in similar situations. (See Defenders of Wildlife v. Salazar (D.D.C. 2010) 698 F.Supp.2d 141 [rejecting plaintiffs' contention that adaptive management plan in EIS is "a 'plan to make a plan'" that is "insufficiently detailed to allow for a reasonably complete discussion of mitigation measures"]; In re Operation of the Missouri River System Litig., supra, 363 F.Supp.2d at pp. 1163-1164 [rejecting plaintiffs' claim that adaptive management planning avoids NEPA obligations]; see also North Coast Rivers Alliance v. Marin Municipal Water District (2013) 216 Cal.App.4th 614, 647 [mitigation plan is sufficient under CEQA if it identifies methods that will be used to mitigate impacts and sets out standards the agency commits to meet].)</p> <p>Instead, adaptive management planning is a system of informed adjustment so that implementation is more successful. This technique has an extensive history and been endorsed by federal wildlife agencies for use in complex environments or when uncertainty exists. (See Council on Environmental Quality, N. Sutley, Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact at p. 9 (January 14, 2011) ("Sutley Memo") ["Adaptive management can help an agency take corrective action if mitigation commitments originally made in NEPA and decision documents fail to achieve projected environmental outcomes ..."]; U.S. Fish &</p>	The comment is an overview of the purpose and approach to adaptive management and monitoring and does not address any specific information in the EIR/EIS. For additional information on California WaterFix adaptive management please refer to Chapter 3, Description of Alternatives and Master Response 33.

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		Wildlife and Nat'l Marine Fisheries Serv., Habitat Conservation Planning Handbook (1996) at pp. 3-24 ["When significant scientific uncertainty exists, it can be addressed through the incorporation of adaptive management measures..."]; Press Release, Interior Department Publishes New Guide on Use of Adaptive Management in Natural Resource Decision-Making, U.S. Department of Interior (Apr. 20, 2012) ["Natural resource managers are increasingly using adaptive management as a tool in making complex decisions whether to protect eagles, set waterfowl harvest limits or manage the flow of rivers to meet recreational, agricultural and other needs"].)	
2590	35	<p>Department of Interior guidance identifies adaptive management as an effective implementation tool where (1) there is "a mandate to take action in the face of uncertainty" and (2) there is "the institutional capacity and commitment to undertake and sustain an adaptive program," including "an institutional stability for long-term measurement and evaluation of outcomes." (Dep't of Interior, Adaptive Management Technical Guide (2009) at p. 9.) Both of these requirements are met here. All stakeholders would agree that any actions within the Delta environment entail significant uncertainty and lead agencies have committed to provide for long-term adaptive planning to meet identified performance standards. Under these conditions, adaptive management is preferable to the traditional "predict, mitigate and implement" environmental management model which "does not account for unanticipated changes in environmental conditions, inaccurate predictions, or subsequent information that might affect the original environmental protections." (CEQ NEPA Task Force, Modernizing NEPA Implementation (2003) at p. 44.) Instead, it assures the project is successfully implemented. This is especially valuable in the complex Delta environment where accurate predictions are difficult, making effective implementation of monitoring uncertain.</p> <p>Adaptive management planning at the EIR/EIS stage does not require significantly detailed descriptions of substantive work by the planning team. Some commenters would suggest that the lead agencies should have already begun assembling the adaptive management team and created species-specific thresholds; prepared timelines for actions, drafted plans for specific locations potentially impacted by the project, developed contingency plans, or implemented many other resource-intensive projects. [footnote 15: E.g., Delta ISB Comments at p. 6.] Nothing in NEPA or CEQA demands, or even encourages, lead agencies to commit resources to beginning work on the adaptive management program before a project has even been approved, and may still be either rejected or modified. In fact, beginning work before project approval could actually violate NEPA. (See 40 C.F.R. § 1506.1(a) [no action may be taken on the proposed project that could have an adverse environmental impact or limit the choice of reasonable alternatives].) As such, a lead agency need only "identify those mitigation measures that the agency is adopting and committing to implement," and specify "expected results, so as to establish clear performance expectations." (Sutley Memo at pp. 6-7 and 8; see also CEQA Guidelines, § 15126.4(a)(1)(B); <i>Defend the Bay v. City of Irvine</i> (2004) 119 Cal.App.4th 1261, 1275.) The RDEIR/SDEIS clearly meets these requirements.</p>	No issues related to the adequacy of the environmental impact analysis in the EIR/S were raised. For more information regarding adaptive management please see Master Response 33. For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.
2590	36	Commenters have mistakenly claimed that the lead agencies must provide some type of "assurances" that the adaptive management plan will be fully funded. [footnote 16: E.g., Delta ISB Comments at pp. 6, 9.] Rather, at the EIS stage, adaptive management plans require lead agencies only to ensure that there is "sufficient legal authorities ... and necessary resources available to perform or ensure the performance of mitigation." (Sutley Memo at p. 5.) This may be satisfied through a lead "agency's own underlying authority."	This comment is an opinion regarding funding for adaptive management. No specific comments on the EIR/EIS content and analysis is provided. For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.

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		(Ibid.) CEQ recognized that it may not be possible to identify or commit funds from future budgets, id. at 9, but found that adaptive management should only be ruled out where "it is not reasonable to foresee the availability of sufficient resources." (Id. at p. 6.) Thus, a lead agency need only describe the reasonable likelihood of funding being available in the future from any source, including its own budget or from project proponents. (See Santa Clarita Organization for Planning the Environment v. County of Los Angeles (2007) 157 Cal.App.4th 149, 163 [EIR is not required to discuss or evaluate funding of mitigation].) A more detailed funding plan is not required for adaptive management planning at this stage.	
2590	37	Adaptive management planning has been repeatedly upheld against legal challenges. (See, e.g., Theodore Roosevelt Conservation Partnership v. Salazar (D.C. Cir. 2010) 616 F.3d 497, 515 [rejecting plaintiffs' argument that an adaptive management plan violated NEPA's requirement to discuss mitigation measures in the EIS and to evaluate environmental impacts before action is taken]; Sierra Nevada Forest Protection Campaign v. Rey (E.D. Cal. 2008) 573 F.Supp.2d 1316, 1342 [rejecting plaintiffs' claim that adaptive management plan for reducing fire risk for owl habitat lacked "scientific utility"]; High Sierra Hikers Ass'n v. Wiengardt (N.D. Cal. 2007) 521 F.Supp.2d 1065, 1083 [rejecting plaintiffs' claims that adaptive management "allows improper modifications of standards and limits contained in the Record of Decision without going through the process of formal plan amendment or compliance with NEPA"]; In re Operation of the Missouri River System Litig. (D. Minn. 2004) 363 F.Supp.2d 1145 [upholding adaptive management and noting that additional NEPA compliance will be required if "a major policy change results"].)	Please see Chapter 3 in the FEIR/EIS for a full description of the Adaptive Management and Monitoring Program included in the preferred alternative, 4A. The commenter does not raise any issues with the environmental analysis provided in the EIR/S.
2590	38	In Theodore Roosevelt Conservation Partnership, supra, 605 F.Supp.2d 263, a district court rejected many of the objections against adaptive management that have been raised by commenters here. According to the plaintiff in that case, "BLM's adaptive-management-mitigation plan [was] 'so amorphous and ill-defined' that the agency was unable to determine the environmental consequences of the project and thus unable to take the requisite 'hard look' at the project's effect on the environment." (Id. at p. 279 [footnote and citations omitted].) The court there noted that BLM was not relying on adaptive management to determine what mitigation measures should be, but was only using adaptive management to monitor and adjust the "numerous specific mitigation techniques" that had already been identified in the EIS. (Ibid.) Nor did the court accept plaintiff's claim that adaptive management is "equivalent to a decision to 'act now and deal with environmental consequences later...'" (Id. at p. 280.) It summarily dismissed this characterization of adaptive management by pointing out that "NEPA does not prevent agencies from adopting mitigation techniques and acknowledging they may be adjusted later depending on their effectiveness." (Ibid.) These determinations were upheld on appeal, where the circuit court determined that nothing in NEPA "force[s] agencies to make detailed, unchangeable mitigation plans for long-term development projects." (Theodore Roosevelt Conservation v. Salazar (D.C. Cir. 2010) 616 F.3d 517.) Indeed, the court found that "[a]llowing adaptable mitigation measures is a reasonable decision in light of the inherent uncertainty of environmental impacts, not a violation of NEPA." (Ibid.; see also Save Panoche Valley, supra, 217 Cal.App.4th at p. 524; National Parks and Conservation Association v. County of Riverside (1999) 71 Cal.App.4th 1341, 1366 [agency appropriately deferred details of species protection measures in order to further study migration patterns during project operation].) As with that case, the uncertainties inherent in the Delta environment make adaptive management a necessity to ensure that mitigation measures actually operate as anticipated.	The Mitigation, Monitoring and Reporting Program would be considered a condition of project approval and would therefore be required to be implemented.

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2590	39	<p>The adaptive management approach also obviates any plan to over-compensate for potential mitigation failures. For example, one commenter urged that the Final EIR/S require wetlands restoration at a greater than 1:1 ratio, given the potential failure of some restoration projects, and otherwise claims other mitigation measures are overly optimistic. Adaptive management planning monitors the progress of mitigation projects to adjust implementation so that mitigation goals are accomplished. Although some mitigation measures may fail at particular locations, without adaptive management, these failed mitigation projects would either be undocumented or simply be abandoned. Adaptive management allows a management team to diagnose reasons for mitigation measures that fail, and to undertake newer efforts having a greater chance of success. Thus, to use the example presented by a commenter, there is no need to require wetlands restoration at greater than a 1:1 ratio as the adaptive management team will continue the restoration work until the required 1:1 ratio is actually achieved.</p>	<p>Section 4 of the RDEIR/SDEIS describes the mitigation ratios applied to Environmental Commitments for the preferred alternative, 4A, and Table 4.1-8 lists the "Terrestrial Biology Resource Restoration and Protection Principles for Implementing Environmental Commitments". For additional information on Adaptive Management please see Master Response 33.</p>
2590	40	<p>The Final EIR/S should more explicitly reflect limits and uncertainties of science.</p> <p>Although the RDEIR/SDEIS presents significant amounts of scientific information, the discussion of the science in the Final EIR/S should be enhanced. The Final EIR/S should better reflect the significant uncertainty that arises when considering how science should guide operations within environmental conditions at least ten years from now. It is impossible to predict precisely when specific fish species will be in the vicinity of the new infrastructure, and what operational criteria will apply at that point in time. There is additional uncertainty associated with decisions on operational criteria resulting from today's scientific knowledge. That said, decisions must be made, but those decisions are policy decisions, informed by the best available science. All would benefit if this were explained more explicitly in the Final EIR/S.</p> <p>The RDEIR/SDEIS includes a Real Time Operations program. (See, e.g., RDEIR/SDEIS at pp. 4.1-7 - 4.1-10, Table 4.1-2.) It allows for operations that maximize water supplies, unless then-current conditions warrant restrictions needed to avoid jeopardizing species or adverse modification to critical habitat. Real Time Operations reflects inherent uncertainties noted above. The Collaborative Science and Adaptive Management Program included in the RDEIR/SDEIS also reflects existing uncertainty. It allows the lead agencies and others to use the years between project approval and operations of the new infrastructure to improve the science and decisionmaking and ultimately allow for maximized water supplies while not jeopardizing listed species or adversely modifying their critical habitat.</p>	<p>Considerable scientific uncertainty exists regarding the Delta ecosystem, including the effects of CVP and SWP operations and the related operational criteria. To address this uncertainty, DWR, Reclamation, DFW, USFWS, NMFS, and the public water agencies will establish a robust program of collaborative science, monitoring, and adaptive management. For more information regarding adaptive management please see Master Response 33.</p> <p>The lead agencies believe that the BDCP and EIR/EIS are complete in their evaluation of impacts, direct and cumulative, that project description is complete and satisfies the requirements of NEPA, that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies agree that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS.</p>
2590	41	<p>The Final EIR/S should acknowledge more completely the uncertainties surrounding future conditions and limitations in currently available science.</p> <p>NEPA requires acknowledgment of incomplete or unavailable information regarding adverse effects on the human environment. (40 C.F.R. § 1502.22.) CEQA likewise requires the lead agency to acknowledge the limitations of its ability to forecast future conditions and to disclose areas of scientific uncertainty or disagreement. (CEQA Guidelines, §§ 15144, 15145, 15151.) Here, the RDEIR/SDEIS properly acknowledges limits or uncertainties associated with certain effects analyses (see, e.g., RDEIR/SDEIS at p. 2-4 [addressing uncertainty from contrasting model results]), but it can and should more fully and clearly disclose the limits of scientific certainty or areas of disagreement among researchers. In order to provide the entire picture for the decision makers, the lead agencies should use the Final EIR/S to disclose even more fully additional literature on critical issues. Moreover, where the</p>	<p>The lead agencies believe that the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS are complete in their evaluation of impacts (using the best available science and modeling), direct and cumulative, that project description is complete and satisfies the requirements of NEPA, and that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies believe that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information regarding the potential impacts and proposed mitigation measures on which to make informed comments which have been considered and incorporated into the Final EIR/EIS. For resource topics where uncertainty exists related to CALSIM/DSM2 and biological models, the limitations and uncertainty inherent in these tools is presented in the resource chapter methodology sections and in Appendixes that support the resource analyses. The analyses and the CEQA/NEPA conclusions presented in the EIR/EIS are an objective interpretation of all of the data, modeling results and research thought to be relevant for a particular resource topic. Because CEQA and NEPA allow for disagreement among experts, no additional information</p>

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		<p>agencies are making policy judgments and drawing inferences from limited scientific knowledge, the Final EIR/S should better acknowledge those limitations.</p>	<p>on analysis limitation is needed.</p>
2590	42	<p>Current Scientific Hypotheses Correlating Flows to Benefits to Native Delta Species Fail to Account for the Mechanisms those Flows Provide: The hypothesized benefit of Delta outflow is a critical assumption underlying prescriptive operating criteria now proposed for the new conveyance. Scientific hypotheses concerning the relationship between increased Delta outflow and fish abundance, however, have not been fully tested and the science cited to support criteria that increase Delta outflow is limited, uncertain, and debated. Hence, to better identify and disclose these limitations, the RDEIR/SDEIS should cite additional important science on the relationship between outflow and abundance, including Latour 2015 and Kimmerer et al. 2013. A recent report by the Delta Independent Science Board reinforces the fact there remains considerable uncertainty surrounding the relationship between flows and abundance. As that report highlights:</p> <p>"Many studies -- and management decisions -- rely on correlations between water flows and fish populations. But the decisions warrant fuller understanding of precisely how the flows affect the fishes. Knowledge of these underlying mechanisms is likely to facilitate adaptive management by clarifying uncertainty and risk, by creating specific expectations for outcomes and by strengthening testable hypotheses. This report therefore recommends, first and foremost (there are other recommendations as well), redoubling effects [sic] to identify causes and effects concerning fishes and flows in the Delta."</p> <p>(See Delta Independent Science Board, Flows and Fishes in the Sacramento-San-Joaquin Delta, Research Needs in Support of Adaptive Management at i (August 2015) (Delta ISB Report).)</p> <p>As the Delta ISB [Independent Science Board] Report points out, many of these mechanisms have neither been identified or studied. Rather, flows have often been used as a surrogate or tool intended to benefit native species without understanding the mechanisms various flow regimes serve across various species and life stages. For example, one mechanism a particular flow regime may provide is the transport of nutrients to important rearing areas for food production. In this case, the benefit is likely diminished due to alterations in nutrients being transported and the food biomass and species composition created by those nutrients in rearing areas (Jassby et al. 2002; Lehman 2000; Lehman et al. 2005; Lehman et al. 2010; Jassby et al. 2002; Sommer et al. 2007; Glibert et al. 2011; Winder and Jassby 2010). Additional flow in today's altered system may not improve the food web that native species have evolved to rely upon. Another mechanism a particular flow regime may provide is creation of additional floodplain habitat for splittail spawning and salmon rearing. There is an incremental threshold of flow necessary to inundate the floodplain whereby too little flow would not produce the benefit and too much would be unnecessary and potentially detrimental. As a result, use of flow / abundance relationships alone may result in too much or not enough water being dedicated for the desired result. It could also cause water to be dedicated when there is a non-flow action that could improve fish conditions directly, for example notching a weir to cause floodplain inundation at lower flow levels.</p> <p>This caution is reflected in Chapter 11 of the RDEIR/SDEIS. There, the RDEIR/SDEIS acknowledges that "appreciable uncertainty related to the significance of the [Low Salinity Zone] and fall outflow management efforts for delta smelt" has led to increased research. However, the chapter concludes that implementation of alternatives that do not include Fall X2 will have adverse effects on delta smelt. (See RDEIR/SDEIS at pp. 11-33, 11-205; see also</p>	<p>The uncertainty regarding the outflow needs of fish has been documented throughout Chapter 11. Additionally, the initial operating criteria propose to maintain fall and spring outflow consistent with the No Action alternative. The conclusions in the EIR/EIS are based on the current state of science, but the uncertainty is acknowledged, and the Adaptive Management Program will be used to reduce these uncertainties and adjust operations accordingly. Also see Master Response 33.</p> <p>The Lead Agencies will make the final decisions regarding the selection of an alternative (and therefore, an operational scenario) for the purposes of CEQA and NEPA. USFWS and NMFS have authority under the federal Endangered Species Act to determine whether the Proposed Project meets the regulatory standard of ESA Section 7, and CDFW, a CEQA responsible agency, has authority to determine if the Proposed Project meets the regulatory standards of CESA. Please see Section 4.1.2, Description of Alternative 4A, RDEIR/SDEIS for additional information on Proposed Project operations.</p> <p>Also please refer to Master Response 28, Operational Criteria.</p> <p>Please see Master Response 28 and 29 for more information regarding operational scenarios and compliance with ESA respectively.</p> <p>For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.</p>

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		RDEIR/SDEIS at pp. 4.3.7-25 -27.) However, if the Final EIR/S retains that conclusion, it should reflect that the conclusion is made out of an abundance of caution, in spite of the appreciable uncertainty. Similar statements should be included for other conclusions that are based on limited or uncertain science.	
2590	43	Uncertainty With Survey Data: The RDEIR/SDEIS cites scientific hypotheses concerning Delta Smelt abundance that are based on correlations between environmental conditions and data from Delta Smelt surveys. At least some of those surveys were designed to sample very different fish species and may not be very efficient at sampling Delta Smelt. Bennett and Burau 2014 have shown that the tidal cycle significantly influences Delta Smelt catchability in the open water where the sampling occurs; this survey inefficiency may introduce bias in the data and potentially undermine other analyses dependent on the data from these surveys. Disclosure of survey efficiency and potential bias, as an example, is important when seeking to understand the strength and limit of the scientific support for actions and ultimately the impacts of actions.	Recognition of these potential factors has been added to the FEIR/EIS in discussion of Impact AQUA-5 for Alternative 4A.
2590	44	Consider Fully the Effects of Other Stressors: The Final EIR/S should acknowledge more completely the effects of other significant stressors in the Delta. Researchers and policymakers have debated how changes in food supply, loss of habitat, predation by non-native species, and water quality (e.g. nutrients), among others, may impact species abundance as native listed species struggle to thrive in the altered Delta ecosystem. While these stressors and many others have been identified, in many cases projects and actions to address them have not been implemented. This despite, for example, an impressive list of over 200 pages of recovery actions identified in NMFS' 2014 Recovery Plan for Winter-Run, Spring-Run, and Central Valley Steelhead. [footnote 17: National Marine Fisheries Service, Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-Run Chinook Salmon and Central Valley Spring-Run Chinook Salmon and The Distinct Population Segment of California Central Valley Steelhead (July 2014).] These recovery actions include efforts to address the adverse effects of loss of habitat, increased non-native fish predation, wildfire management, in-Delta unscreened diversions, and ocean harvest on these listed species. Perhaps most importantly, these recovery actions go so far as to identify those agencies and entities best-suited to implement the specific recovery action. This is precisely the kind of inter-agency implementation that is needed in the next decade to address the complex and interrelated suit of stressors and improve conditions for native fish, and so that decisions regarding operations are fully informed within the context of all stressors.	<p>The comment expresses the recommendation that the Final EIR/EIS should fully acknowledge the effect of stressors on species. As part of the permitting process, appropriate mitigation and actions would be included to protect species. To include such items in the CEQA/NEPA process would be speculative and inappropriate.</p> <p>Please note that the BDCP is no longer the preferred alternative. The preferred alternative is now Alternative 4A and no longer includes an HCP.</p> <p>The comment expresses the recommendation that the Final EIR/EIS should fully acknowledge the effect of stressors on species. As part of the permitting process, appropriate mitigation and actions would be included to protect species. To include such items in the CEQA/NEPA process would be speculative and inappropriate.</p> <p>The Proposed Project would enable DWR to construct and operate new conveyance facilities that improve conditions for endangered and threatened aquatic species in the Delta while at the same time improving water supply reliability, consistent with California law (see, e.g., Cal.Wat. Code, § 85001[c]). Implementing the conveyance facilities would help resolve many of the concerns with the current south Delta conveyance system, and would help reduce threats to endangered and threatened species in the Delta, including entrainment at the south Delta export facilities. For instance, implementing a dual conveyance system would align water operations, and their location, to better reflect natural seasonal flow patterns by creating new water diversions in the north Delta equipped with State-of-the-art fish screens, thus reducing reliance on south Delta exports during times of the year when listed aquatic species are present and most vulnerable. For more information on mitigation measures to minimize contraction and operational-related impacts to fish species, including Delta and longfin smelt, please see Chapter 11, RDEIR/SDEIS.</p>
2590	45	Distinguishing the impacts of proposed new facilities and operations from the impacts of the many other stressors on the Delta ecosystem is important for at least two reasons. First, doing so is necessary to understand the impacts of the proposed new facilities and operations. Absent such an effort, the true effect will be unknown. Second, understanding causation is essential to applying the standards of ESA section 7. A determination of whether the proposed action will jeopardize a species or adversely modify critical habitat must be based on the effects caused by that action, not the effects of all stressors generally. For consultation purposes, the effects of other stressors are part of the baseline to which the effects caused by the proposed action are added.	<p>For information on the environmental baseline, including the status of listed species and associated stressors, please see Chapter 11 and 12 in the FEIR/EIS and Chapter 4 in the California WaterFix Biological Assessment. Also, refer to Master Response 24 for a summary of other stressors in the Delta. Appendix 5, BDCP, provides additional information on abiotic and biotic stressors in the Delta as well. In addition, the project proponents are concurrently involved in Section 7 consultations with NMFS and USFWS. These agencies will be responsible for issuing a biological opinion and making a jeopardy/no jeopardy determination on the proposed project.</p> <p>Also, refer to Chapter 4 in the FEIR/EIS for a description on the approach to the environmental resource evaluations.</p>

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			For more information regarding environmental baselines please see Master Response 1.
2590	46	<p>When rendering decisions in light of limited and uncertain science, the lead agencies should acknowledge that the decisions are policy driven.</p> <p>Decisions made with limited and uncertain science ultimately are policy decisions, based on available science. While policy decisions must be made, they should be presented with full transparency; the Final EIR/S should better acknowledge that, in many areas, available science falls short of requiring specific operational criteria.</p> <p>When scientific support is lacking because of either limited or uncertain information, the basis for decision is risk tolerance and intuition. In 2004, the National Research Council (NRC) observed that "even when a policy decision is made to apply the precautionary principle, the question of whether the decision is consistent with the available scientific information is important. . . . At some point [] erring on the side of protection in decision-making ceases to be precautionary and becomes arbitrary." (NRC 2004 at p. 315.) In its 2004 report, the NRC addressed the degree of scientific certainty, or lack thereof, regarding measures imposed under the ESA for the protection of listed fishes in the Klamath River basin. [footnote 18: National Research Council, Endangered and Threatened Fishes in the Klamath River Basin: Causes of Decline and Strategies for Recovery. Washington, DC: The National Academies Press, 2004.] The NRC developed "specific conventions for judging the degree of scientific support for a proposal or hypothesis," which are summarized in the following table: [ATT1]</p> <p>The NRC explained that "[t]he scientific value of such a hypothesis ranges from negligible to very high, depending on the amount of testing to which it has been subjected. At the low end of the scale of scientific strength is an assertion or proposal that is entirely intuitive and thus without scientific support." (NRC 2004 at p. 35.) DWR and Reclamation should consider using these or similar criteria in the Final EIR/S to better inform the decisions that will necessarily be based on science.</p>	<p>This comment is an opinion regarding project decision-making and how decisions are made when uncertainty exists. The Draft EIR/EIS and RDEIR/SDEIS contain no project approval decisions. Analyses present the best available information and science for resource topics in an objective manner based on the identified methodology. Where uncertainty exists related to data or science it is noted in the analyses. Impact analyses conclusions are based on the application of threshold criteria to aid in judging whether a specific impact would be significant or adverse under CEQA and NEPA respectively.</p>
2590	47	ATT1: Table 1-2 Categories Used by the Committee for Judging the Degree of Scientific Support for Proposed Actions Pursuant to the Goals of the ESA	The comment describes an attachment to the comment letter. The attachment does not raise any additional issues related to the environmental analysis in the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS that are not already addressed in the comment referencing the attachment or the Final EIR/EIS.
2590	48	<p>The lead agencies should use the next decade to follow a collaborative process to expand the relevant science to allow for more informed judgment on how best to operate the new conveyance.</p> <p>The RDEIR/SDEIS recognizes scientific uncertainty regarding the Delta ecosystem, including the effects of water deliveries and the related operating criteria. To address that uncertainty, the lead agencies have included a collaborative process to study further the potential impacts of implementing these infrastructure improvements. (RDEIR/SDEIS at p. 4.1-18) The Water Authority and Westlands support that effort. [footnote 19: See Delta Independent Science Board, Flows and Fishes in the Sacramento-San-Joaquin Delta, Research Needs in Support of Adaptive Management at p. i (August 2015) [concluding that "scientific findings that relate fishes and flows increasingly guide decisions on how to manage flows for the well being of threatened or endangered species" but that "the decisions warrant fuller understanding of precisely how the flows affect the fishes" and recommending "first and foremost" to redouble efforts "to identify causes and effects</p>	<p>Please see Chapter 3, Section 3.6.4.2 for an updated description on the Collaborative Science and Adaptive Management Program under the proposed project. Considerable scientific uncertainty exists regarding the Delta ecosystem, including the effects of CVP and SWP operations and the related operational criteria. To address this uncertainty, DWR, Reclamation, DFW, USFWS, NMFS, and the public water agencies will establish a robust program of collaborative science, monitoring, and adaptive management. For more information regarding adaptive management please see Master Response 33. (from RECIRC letter 2597).</p> <p>For responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.</p>

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		<p>concerns fishes and flows in the Delta."]] The approach is sound for two particular reasons.</p> <p>First, with a strong science program, uncertainties we see today can be reduced and the additional research can add granularity to today's knowledge. Much of today's science, for example, is premised on a single conveyance. Additional study focused on a dual conveyance could better inform decisionmakers on how to frame project operations using these new facilities. Targeted research and studies on this issue, and other issues raised above, can and should proceed until the new intakes become operational, with the results of those studies forming the basis for establishing the final range of operating criteria.</p> <p>Second, the use of the Collaborative Science and Adaptive Management Program squares fully with NEPA and CEQA. Although future impacts from the long-term operational phase of the project carry some uncertainty, the RDEIR/SDEIS provides the information that NEPA and CEQA require by updating the pre-existing Draft EIR/S analyses for 23 different categories of reasonably foreseeable direct and indirect impacts. Moreover, the impact assessment requirements of NEPA and CEQA only require the lead agencies to provide sufficient information to inform the decision makers and the public of reasonably foreseeable direct and indirect effects. (40 C.F.R. 1502.16; CEQA Guidelines, § 15064(d).) This is particularly true with the revisions suggested herein. Neither statute requires the agencies to engage in speculation or conjecture about hypothetical impacts that may occur in the future. (See, e.g., City of Davis v. Coleman (9th Cir. 1975) 521 F.2d 661, 676 ["While 'foreseeing the unforeseeable' is not required, an agency must use its best efforts to find out all that it reasonably can"]; Foundation for San Francisco's Architectural Heritage v. City and County of San Francisco (1980) 106 Cal.App.3d 893, 910 [CEQA "does not demand what is not realistically possible given the limitation of time, energy, and funds. 'Crystal ball' inquiry is not required"].) This environmental review should depict the likely outer bounds of reasonably foreseeable impacts. That is all that the law requires.</p> <p>In sum, to enable the lead agencies to make the best policy decision possible in light of existing uncertainties, the Final EIR/S should better acknowledge such uncertainties, and arm future decisionmakers with the tools necessary to respond to improved knowledge and new science in the intervening decade.</p>	
2591	1	<p>The water rights owners on Ryer Island own riparian water rights from the Sacramento River and have established these rights for over 100 years. There is considerable concern that the BDCP will increase the salinity for the Sacramento River as more and more fresh water is pumped from the Delta. There is a salinity monitoring station at the Rio Vista Bridge that must be maintained in order to ensure water quality for Ryer Island. Any interference with water quality must be evaluated as part of the EIS/EIR process and appropriate mitigation measures implemented.</p>	<p>Alternative 4A, also known as California WaterFix, has been developed in response to public and agency input and is the new CEQA Preferred Alternative. Alternative 4A is also the NEPA Preferred Alternative, a designation that was not attached to any of the alternatives presented in the 2013 Public Draft EIR/EIS. Alternative 4 remains a potentially viable alternative and is being carried forward in this RDEIR/SDEIS because it represents the original habitat conservation plan/natural community conservation plan (HCP/NCCP) alternative approach, and because it provides an important reference point from which the Alternative 4A, 2D, and 5A descriptions and analyses were developed. If the Lead Agencies ultimately choose the alternative implementation strategy and select an alternative presented in the RDEIR/SDEIS after completing the CEQA and NEPA processes, elements of the conservation plan contained in the alternatives in the 2013 Public Draft EIR/EIS may be utilized by other programs for implementation of the long term conservation efforts.</p> <p>The EIR/EIS analyzes the potential for water conveyance operations to affect salinity conditions and beneficial uses (including agricultural uses) in the Delta (including Suisun Marsh) under existing conditions and future no action conditions, and with implementation of each project alternative (including conservation measures). See Chapter 8, Water Quality, of the EIR/EIS for the salinity-related parameters chloride (Impact WQ-7) and electrical conductivity (Impact WQ-11). Where significant impacts to water quality</p>

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			would occur due to the alternative, mitigation to lessen those impacts is provided. For more information regarding salinity please see Master Response 14 (Water Quality) and for more information regarding mitigation measures please see Master Response 22 (Standards Governing the Adequacy of Mitigation Measures).
2591	2	Reclamation District 501 is also concerned with concentrations of selenium, chloride, mercury and other harmful substances increasing in the water as a result of the bypassing of large quantities of water from north to south in the pipeline. Reclamation District 501 requests that additional monitoring of these substances be included in any mitigation plans and that mitigation measures be in place to prevent these pollutants from interfering with the agricultural operations on Ryer island.	Please refer to Master Response 14 for additional discussion regarding water quality impacts, including in particular selenium, mercury and chlorides.
2591	3	Reclamation District 501 is also concerned about subsidence of the lands affected by the proposal. Ryer Island is already below sea level. It is an accepted fact that the groundwater beneath Ryer Island is hydro-geologically connected directly to the flows of the Sacramento River. As water is withdrawn from the Delta that otherwise would flow as part of the underground flow of the river, then subsidence of the overlying lands can occur. Any further subsidence of the lands would move the Ryer Island surface closer to the water table. It is important for the soils on Ryer Island remain at a sufficient depth above the water table so that seepage will not occur. If the land subsides as a result of the removal of water from the Delta through the tunnels, then there is a probability that the surface of the land will subside and expose the crops to saturation at the root level, causing root rot. Obviously, this will be highly detrimental to the growth and sustainability of the crops. Reclamation District 501 is responsible for the drains and pumps on Ryer Island and this kind of subsidence could interfere greatly with Reclamation District 501's mission to remove excess water from the island.	Land subsidence is discussed in Chapter 10, which notes that the primary cause of subsidence in the Delta is decomposition of organic carbon in the peat soils. Land subsidence in the Delta is not linked to diversions of surface water. The proposed project would not significantly impact groundwater levels, and so would not cause land subsidence. While groundwater levels could be temporarily lowered in localized areas during the dewatering phases of construction, groundwater would return to pre-pumping levels over the course of several months following the dewatering phase. Mitigation has been proposed to maintain water supplies in areas affected by construction dewatering. Additionally, the lead agencies would relocate and/or replace wells, pipelines, power lines, drainage systems, and other infrastructure that are needed for ongoing agricultural uses and would be adversely affected by project construction or operation. For additional information regarding proposed agricultural mitigation, please see Master Response 18.
2591	4	Moreover, any subsidence of the overlying lands caused by the removal of water from the Delta will have an adverse impact on the levees surrounding Ryer Island. As the land subsides, the integrity of the foundation of these levees will be compromised. This in turn may cause the levees to crack or fail which will cause an inundation of the interior of the island. Not only will the farmers, be adversely affected by this, but Reclamation District 501's pumps, drains and infrastructure will also be adversely impacted. The roads around Ryer Island sit atop these levees and they will become impassable if the levees crack or fail. Reclamation District 501 would not be able to maintain its facilities if the levees fail. Mitigation plans must be in place to measure and prevent subsidence and to deal with emergencies if a levee failure occurs.	Please see Appendix 6A, Section 6A.6.2.1.3, FEIR/EIS, for a discussion on DWR consistency with the State Plan of Flood Control (SPFC), and Section 6A.6.1.2 for information on project consistency with USACE, CVFPB, and DWR flood standards and regulations. Also, see Chapter 10, Soils, FEIR/EIS, for information on potential effects to soils subject to subsidence. Section 6A.6 also includes a discussion on levees modified by construction of the California WaterFix (CWF), including responsibilities of the project proponents. Before and/or during construction of the CWF water conveyance facilities, project proponents will explore opportunities with local reclamation districts and the Central Valley Flood Protection Board (CVFPB) to address potential conflicts regarding levee maintenance, inspection, and flood fighting activities on project and non-project levees. DWR will look to enter into agreements with local reclamation districts with jurisdiction in the Delta to ensure levee management activities by both government and local agencies are not interrupted during construction of the water conveyance facilities. In addition, DWR will comply with all applicable flood protection requirements and regulations to ensure flood neutrality during construction and operations of the CWF.
2591	5	We understand that the proposed action will involve the protection of endangered species, limiting incidental takes, but also protecting the water rights of CVP and SWP members up to their contractual limits. There was no mention of protecting riparian water right owners in the project purposes and that protection must be included. The Delta is a large region and consists of many different interests. The interests of one of the largest agricultural producing regions in the world must be protected. Ryer Island is a significant contributor to	The proposed project does not increase the amount of water to which DWR holds water rights or for use as allowed under its contracts. Water deliveries from the federal and state water projects under a fully-implemented Alternative 4A are projected to be about the same as the average annual amount diverted in the last 20 years. Although the proposed project would not increase the overall volume of Delta water exported, it would make the deliveries more predictable and reliable, while restoring an ecosystem in steep decline. For information about water rights, please see Master Response 26 (Area of Origin) and

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		the success of agriculture in the Delta, and its resources must be protected. Riparian water rights are the highest, protected type of water rights in California. Ryer Island water right owners have established these water rights as a result of the existence of the island immediately adjacent to the Sacramento River. The BDCP must ensure that no part of the project will interfere with these rights.	Master Response 32 (Water Rights Issues).
2591	6	Not only is Reclamation District 501 concerned about water quality, it is also concerned about water quantity. As more and more water is shipped south and now with the two tunnels bypassing the region, there is considerable concern that the BDCP will result in less fresh water being available for farmers along the path of the San Joaquin and Sacramento Rivers. Steps must be taken to ensure that the quantity of water is maintained in the river to support agriculture.	For information about water quality, please refer to Master Response 14 (Water Quality) and Chapter 8 of the Final EIR/EIS and the Impacts Summary Table. For information about water rights, please see Response to Comment 2591-5.
2591	7	Ryer Island is below sea level and must depend on Reclamation District 501's pumps to keep the island from flooding. However, Ryer Island also has a series of intake pumps and siphons to divert water from the river to the island for irrigation. These intakes are set at certain depths and a drop in the level of the river could mean that farmers would have to reset their intakes deeper into the river. Mitigation steps must be taken to ensure that water that bypasses Ryer Island does not cause a drop in the river that prevents the water right owners from diverting water onto the island.	As noted in Chapter 6 of the 2013 EIR/EIS, no adverse flow conditions in the Sacramento River would be expected as a result of the proposed project when compared to the without project conditions. Please see Appendix X, section 7.3.3, Final EIR/EIS, for information on project-related changes in water surface elevation.
2591	8	Ryer Island was the subject of a temporary entry permit to investigate the feasibility of using the island as a route for the proposed tunnels. Although the route is not the preferred proposal, it is still an alternative analyzed in the EIS/EIR. Reclamation District 501 is adamantly opposed to the use of its levees and easements for use as a right of way for the tunnel. The disruption caused by the construction alone would destroy Ryer Island's viability as a farming operation.	The Project proponents acknowledge your opposition to the project alternative. It should be noted that any modifications to levees as a result of implementing the project alternatives would comply with USACE, CVFPB, and DWR flood protection standards and levee criteria to ensure flood neutrality in the Delta. For information on potential impacts to farmland in the Delta, please see Chapter 14 (Agricultural Resources) in the FEIR/EIS.
2591	10	For the foregoing reasons, Reclamation District 501 asks that you reconsider the proposed project, that you not select Ryer Island as a site for the `tunnels, that you protect riparian rights, and that you ensure that water quality and water quantity are maintained in the Delta.	The preferred CEQA/NEPA alternative (Alternative 4A) conveyance facilities would not cross Ryer Island. No effect on riparian water rights is proposed as part of the California WaterFix. Water Quality impacts of the action alternatives is presented in Chapter 8 of this Final EIR/EIS and mitigation measures to protect beneficial uses are presented, where appropriate. For additional information regarding water quality, please see Master Response 14.
2592	1	It is acknowledged in the BDCP EIR/EIS (Section 31, page 31-5) that current water project operations have caused "long standing adverse environmental consequences associated with . . . diversions from the South Delta, such as . . . fish losses from entrainment." Facts that are commonly recognized are: Reduced exports from the South Delta result in reduced entrainment and reduced losses of fish during low flow conditions, reduced use of the South Delta facilities during certain critical periods will improve fish survival, and migrating salmon have less chance of survival if diverted into the Central Delta where predation pressure and entrainment are greatest.	The Proposed Project would enable DWR to construct and operate new conveyance facilities that improve conditions for endangered and threatened aquatic species in the Delta while at the same time improving water supply reliability, consistent with California law (see, e.g., Cal.Wat. Code, § 85001[c]). Implementing the conveyance facilities would help resolve many of the concerns with the current south Delta conveyance system, and would help reduce threats to endangered and threatened species in the Delta, including entrainment south Delta export facilities. For instance, implementing a dual conveyance system would align water operations, and their location, to better reflect natural seasonal flow patterns by creating new water diversions in the north Delta equipped with State-of-the-art fish screens, thus reducing reliance on south Delta exports during times of the year when listed aquatic species are present and most vulnerable. For more information on mitigation measures to minimize contraction and operational-related impacts to fish species, including Delta and longfin smelt, please see Chapter 11, Final EIR/EIS. Please also note that Alternative 4A, also known as California WaterFix, has been developed in response to public and agency input and is the new CEQA Preferred Alternative. Alternative 4A is also the NEPA Preferred Alternative, a designation that was not attached to any of the alternatives presented in the 2013 Public Draft EIR/EIS. Alternative 4 remains a potentially viable alternative and is being carried forward in this

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			RDEIR/SDEIS because it represents the original habitat conservation plan/natural community conservation plan (HCP/NCCP) alternative approach, and because it provides an important reference point from which the Alternative 4A, 2D, and 5A descriptions and analyses were developed. If the Lead Agencies ultimately choose the alternative implementation strategy and select an alternative presented in the RDEIR/SDEIS after completing the CEQA and NEPA processes, elements of the conservation plan contained in the alternatives in the 2013 Public Draft EIR/EIS may be utilized by other programs for implementation of the long term conservation efforts.
2592	2	It is also understood within the Delta scientific community that current water project operations have increased hydraulic residence times in the Delta, increased temperatures, altered salinity regimes, changed the annual hydrograph, and caused indirect loss of productivity. These changes have led to various impacts, including the proliferation of invasive species, changes in the Delta food web, and increased predation of covered fish species.	DWR's fundamental purpose of the proposed project is to make physical and operational improvements to the SWP system in the Delta necessary to restore and protect ecosystem health, water supplies of the SWP and CVP south of the Delta, and water quality within a stable regulatory framework, consistent with statutory and contractual obligations. By establishing a point of water diversion in the north Delta and new operating criteria, the proposed project is designed to establish a more natural east-west flow for migratory fish, improve habitat conditions, and allow for greater operational flexibility.
2592	3	CVCWA is concerned that the BDCP EIR/EIS and RDEIR/SDEIS do not directly address these impacts of past water project operations on covered fish species and the Delta ecosystem. Such information represents the foundation for assessment of future impacts of changed water project operations under the proposed project. CVCWA is concerned that the failure to establish this foundation limits the ability to project or understand the future impacts of the proposed project.	<p>The lead agencies believe that the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS are complete in their evaluation of impacts (using the best available science and modeling), direct and cumulative, that project description is complete and satisfies the requirements of NEPA, and that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies believe that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS.</p> <p>The Proposed Project would enable DWR to construct and operate new conveyance facilities that improve conditions for endangered and threatened aquatic species in the Delta while at the same time improving water supply reliability, consistent with California law (see, e.g., Cal. Wat. Code, § 85001[c]). Implementing the conveyance facilities would help resolve many of the concerns with the current south Delta conveyance system, and would help reduce threats to endangered and threatened species in the Delta, including entrainment at the south Delta export facilities. For instance, implementing a dual conveyance system would align water operations, and their location, to better reflect natural seasonal flow patterns by creating new water diversions in the north Delta equipped with State-of-the-art fish screens, thus reducing reliance on south Delta exports during times of the year when listed aquatic species are present and most vulnerable. For more information on mitigation measures to minimize contraction and operational-related impacts to fish species, including Delta and longfin smelt, please see Chapter 11, RDEIR/SDEIS.</p> <p>Please see Master Response 1 for additional information regarding the environmental baselines used for the analyses.</p>
2592	4	The EIR does not clearly identify or distinguish the differences in export volumes that are currently occurring versus the export volumes that will be accommodated by the proposed project. This difference must be provided as a "bright line, bold print" statement so that all parties can understand the ultimate impact of the proposed project. Instead, the BDCP does not include a clear operations plan so that the public can meaningfully analyze or comment on the proposed project. Because the impact of current and proposed future exports is clearly tied to impacts on covered fish species and the Delta ecosystem, lack of clarity in the RDEIR/SDEIS on this point creates a lack of confidence in the overall impact assessment.	The description of SWP and CVP Delta exports under Existing Conditions in the EIR/EIS is based upon a model run that simulates the current operational criteria, land use, and water demands over a wide range of hydrological conditions that have previously occurred during an 82-year period. This period includes a range of hydrological conditions that range from numerous critical dry years to several wet years. As described in Appendix 5A, Section C, of the EIR/EIS, total Delta exports at 2030 (Early Long-term) conditions under Existing Conditions, No Action Alternative (with climate change, sea level rise, and projected population by 2030), and Alternative 4A (proposed project with climate change, sea level rise, and projected population by 2030) would be 5.1, 4.7, and 4.9 million acre-feet/year, respectively. The impacts on aquatic species and the Delta ecosystem are also presented in the EIR/EIS for Existing Conditions, No Action Alternative, and Alternative 4A. Additionally, graphic figures have been added to the Executive Summary and to each resource chapter in the FEIR/S to summarize a selection of impacts for each resource area and to increase readability of the document. The Water Supply figure depicts the percent change in exports (SWP and CVP deliveries) for each alternative compared to the No Action Alternative (NAA). It shows that Alternative 4A

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			would not change SWP deliveries compared to the NAA, but it would increase CVP deliveries by 5% compared to the NAA.
2592	5	<p>The BDCP is supposed to improve the Delta ecosystem, consistent with the co-equal goals of the Delta Plan. The proposed modified BDCP intends to improve the Delta ecosystem through reduced entrainment in the South Delta. It no longer includes elements to improve ecosystem health through wetlands creation. A high degree of uncertainty continues to exist regarding the ability of the proposed project to deliver on this intent.</p> <p>The burden of proof is on the BDCP to clearly identify the positive and negative impacts it will have on the Delta ecosystem and to ensure that the advertised benefits are realized. Instead, the plan fails to meet this burden. CVCWA and many other stakeholders, including eight U.S. Congressional Representatives (see letter dated June 29, 2014), believe the BDCP and the supporting documentation to be legally deficient under the National Environmental Policy Act, the California Environmental Quality Act, and several other statutes, including the Clean Water Act (CWA).</p>	<p>See Master Response 31 and Final EIR/EIS Appendices 3I and 3J for discussion of the proposed project’s consistency with the Delta Reform Act. See also response to comment 2592-1.</p> <p>Please also note that the Proposed Project is the result of more than seven years’ collaboration and consultation with numerous stakeholders, agencies, public water agencies and environmental organizations. The organizations that have participated in the Steering Committee, public meetings or written letters to provide input on the Plan include: American Rivers, Bay Institute, Defenders of Wildlife, The Endangered Species Coalition, Environmental Defense Fund, The Golden Gate Salmon Association, National Audubon Society, Natural Resources Defense Council, the Nature Conservancy, and Planning and Conservation League. The feedback was used to guide the development and subsequent revisions of the Proposed Project and its associated EIR/EIS to reflect concerns addressed from the various groups. All of the documents, studies, administrative drafts, and meeting materials have been posted online since 2010 in an unprecedented commitment to provide public access and government transparency. Although the RDEIR/SDEIS, EIR/EIS and much of the proposed project has been drafted by scientists working for a private consulting firm (ICF) working for the Lead Agencies, the Agencies’ scientists have been intimately involved, and their judgments are reflected throughout the EIR/EIS and the proposed project itself. The State is most interested in putting forth the best project that meets the goals of ecosystem improvement and water supply reliability. To the degree that the current Plan is endorsed by some environmental organizations serves as confirmation that the proposed Plan protects species, habitats and the Delta ecosystem in a way that is compatible with their goals. The website includes correspondence from agencies and NGOs received prior to the start of the formal comment period. Comments received during the comment period are to be included in the Final EIR/EIS.</p>
2592	6	CVCWA is very concerned that the proposed BDCP invests inordinate authority to the agencies promoting the BDCP in the implementation of adaptive management, a cornerstone of the BDCP proposal. On the one hand, the proposed BDCP recognizes the great uncertainties regarding the impact of the project on the Delta ecosystem and the actual benefits that may be realized by the proposed project. Absent the proposed wetlands restoration elements that were previously proposed, this uncertainty is magnified. On the other hand, the proposed BDCP continues to be definitive in restricting the imposition of future constraints on the permittees and grants those parties significant leverage in resisting such future requirements, which may be essential to protecting the health of the Delta ecosystem and Delta beneficial uses.	Wetland restoration is incorporated into the proposed project (Alternative 4A) to reduce potential effects of constructing and operating the proposed conveyance facilities. This level of wetland and other restoration actions is intended to meet the requirements of ESA Section 7 and CESA Section 2081(b). Additional restoration acreage would be completed under the California EcoRestore program. Where uncertainty exists in the environmental analyses, particularly in the fish and aquatic resources chapter care has been taken to identify the uncertainties. A biological opinion and 2081(b) permit will be issued by USFWS, NMFS, and DFW for compliance with ESA and CESA with possible requirements to protect listed species.
2592	7	A dramatically impaired fishery and ecosystem in the Delta seriously impacts Central Valley POTWs – BDCP documents fail to adequately address the impacts of water project operations on the Delta fishery, including past and future impact of entrainment and the loss of hundreds of millions of larval, juvenile, and adult fish as a result of the proposed project. Most problematic, the BDCP and related documents fail to ensure that the Delta fishery will be restored, or even that it will not continue to be in crisis or get worse under the proposed project. The BDCP EIR/EIS and RDEIR/SDEIS are fundamentally flawed in their failure to provide an adequate assessment of the current project operations on the Delta ecosystem. There is significant uncertainty as to whether the BDCP will improve the health of the estuary.	Analysis of Alternative 4A and other action alternatives related to fish and aquatic resources, from conveyance facility operations impacts on fish entrainment is included in Final EIR/EIS Chapter 11, Fish and Aquatic Resources. Analysis of existing and future conditions for fish and aquatic resources, surface water changes, and water quality effects is addressed in the existing conditions and No Action Alternatives analyses. Alternative 4A, the preferred CEQA and NEPA alternative has been developed to ensure the continued existence of ESA and CESA listed fish species are not jeopardized. This Final EIR/EIS does present the beneficial, less than significant, and significant effects on fish species in Chapter 11. The impacts of conveyance facility operations on water quality are presented in Chapter 8 of the Final EIR/EIS.
2592	8	2. Adaptive management deficiencies – The RDEIR/SDEIS fundamentally relies on “collaborative science and adaptive management” to address many uncertainties associated	For more information regarding adaptive management please see Master Response 33.

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		with the proposed project. However, the BDCP governance structure restricts, rather than promotes, effective adaptive management. The BDCP fails to establish the scientific foundation/baseline or proper future monitoring requirements to allow for adaptive management to properly function, or the future impacts of the BDCP project operations to be determined (and managed). BDCP monitoring and research commitments by the project proponents are largely absent, and where present, are weak. Monitoring and research performed by neutral science experts should itself be a BDCP conservation measure, not a loose end.	The lead agencies believe that the BDCP and EIR/EIS are complete in their evaluation of impacts, direct and cumulative, that project description is complete and satisfies the requirements of NEPA, that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies agree that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS.
2592	9	BDCP is one sided and inequitable – The BDCP guarantees certainty to the construction of Sacramento intakes and conveyance and ensures certainty regarding water operations, but it restricts the ability to adaptively regulate project operations, and fails to ensure Delta restoration, including the wetlands areas so vital to the achievement of the “dual goals” articulated in the 2009 Delta Reform Act, which have now been excluded from the proposed project.	See responses to comments 2592-1 and 2592-2. The proposed project was developed to meet the rigorous standards of the federal and state Endangered Species Acts. By establishing a point of water diversion in the north Delta and new operating criteria, the project is designed to improve native fish migratory patterns and allow for greater operational flexibility. Regarding restoration, commitments, the BDDP presents a comprehensive conservation strategy that includes restoration, enhancement and protection of habitat for covered species. The proposed project also provides for habitat restoration to address potential habitat effects on listed species from construction and operation of the water conveyance facility. A collaborative science and adaptive management program would be implemented to influence the operation and management of facilities and protected or restored habitat associated with the proposed project.
2592	10	Serious problems with the BDCP governance structure – The proposed structure provides undue power to the water contractors and does not allow effective input from many Delta and Central Valley stakeholders or a fair process for regulating water contract operations. One example is the makeup of the Real Time flow management and Adaptive Management teams, which fail to include representatives from local communities or non-governmental agencies.	Please refer to Master Response 33 regarding adaptive management and Master Response 5 regarding governance structure for project implementation.
2592	11	Unbalanced assessment of BDCP impacts on nutrient levels and nutrient-related effects in the Delta – The BDCP EIR/EIS, and RDEIR/SDEIS fail to properly address the effects of the proposed BDCP project and associated projects in comparison to nutrient impacts from other sources, e.g., the BDCP documents allege that nutrients from future wetlands are beneficial whereas nutrients from municipal and other sources are detrimental. The BDCP EIR/EIS and RDEIR/SDEIS fail to provide a mass balance of nutrients in the Delta that would allow for the fair assessment of various sources. The RDEIR/SDEIS does not acknowledge or account for the fact that the effects of nutrients are exacerbated by historic water operations and the proposed project.	The sources of nutrients (ammonia, nitrate, and phosphorus) to the Delta are not identified as beneficial or detrimental in the EIR/EIS. Further, the purpose of the assessments of nutrients is not to evaluate relative source contributions, but to evaluate how the project alternatives would change nutrient levels. No change to the analysis has been made. See Chapter 8 of the Final EIR/EIS and Master Response 14 for discussion of water quality.
2592	12	Inadequate assessment of the impacts of the proposed project on flow regimes and residence times in the Delta – The BDCP fails to adequately consider the effects of modified in-Delta flow regimes and increased residence time changes associated with the proposed project. For example, it is commonly accepted that flow is a prime driver of the undesirable proliferation of invasive macrophytes (e.g., Brazilian waterweed and water hyacinths) and cyanobacteria (e.g., Microcystis) in the Delta. The occurrence and magnitude of these undesirable species are associated with low velocities and increased residence times in the system. Although the RDEIR/SDEIS includes new information regarding Microcystis and other harmful aquatic species, the document does not properly link the acknowledged project-related increases in residence times in the Delta to a worsening of the Microcystis problem. The RDEIR/SDEIS also fails to link changed flow regimes associated with the proposed project to the increased proliferation of undesirable macrophytes in the Delta. The RDEIR/SDEIS should be modified to acknowledge these impacts in the South	Chapter 8, Water Quality, of the EIR/S evaluates the potential for increased undesirable aquatic life via assessment of the potential for increased Microcystis blooms in Impacts WQ-32 and WQ-33. Since publication of the RDEIR/SDEIS, additional residence time modeling of Alternative 4A became available through preparation of the California WaterFix Biological Assessment. The Final EIR/S incorporates this new information. Please see Master Response 14, Water Quality for additional information regarding Microcystis analysis in Chapter 8 of the Final EIR/EIS.

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		Delta and in the Lower Sacramento River.	
2592	13	Failure to adequately address the impact of the BDCP on the Delta food web, including significant loss of productivity with the exports – The BDCP documents provide inadequate consideration of historic water operations and the proposed project on the Delta food web, a low productivity estuarine system. Mass transport of phytoplankton and nutrients in the exports is not accounted for in the analysis of the Delta ecosystem. Additionally, the impacts of invasive species (clams, macrophytes) on the food web and the effects of the proposed project on the proliferation of those invasive species are not addressed.	<p>Consideration of the potential effects on the food web has been addressed most recently in the California WaterFix BA submitted in August 2016, which quantitatively examines the potential removal of phytoplankton carbon by the NDD and qualitatively discusses the potential offsetting by in situ production and greater input from the San Joaquin River. Analyses presented in the Draft EIR/EIS Appendix 5.F and Chapter 5 addressed potential effects of the BDCP on clams and macrophytes (submerged aquatic vegetation).</p> <p>For more information regarding, tidal habitat restoration effects under Alternative 4, see Master Response 5.</p>
2592	14	Inadequate analysis of compliance with federal antidegradation policy – The BDCP RDEIR/SDEIS fails to remedy the serious problem of inconsistency with the federal antidegradation policy with regard to CWA section 303(d) listed parameters such as electrical conductivity (EC) in the Delta. The RDEIR/SDEIS continues to include information to confirm that significant measurable degradation of EC in the Delta associated with the proposed project will occur. This significant, measurable degradation of EC levels is illegal under the federal antidegradation policy provisions of the Clean Water Act. (See 33 U.S.C. § 1313(d)(4)(B).) The BDCP EIR/EIS and RDEIR/SDEIS fail to identify adequate alternatives or mitigation measures to offset this significant impact. Such measures were identified and requested in the U.S. Environmental Protection Agency’s (USEPA) comment letter on the BDCP dated August 26, 2014. This fatal flaw results in a proposed project that violates the CWA.	The comment concerns electro conductivity (EC) levels in the Delta. Substantial analysis of water quality effects of all project alternatives has been done, including modeling and sensitivity analysis. Conclusions regarding effects of preferred alternative 4A facilities operations and maintenance would be significant before mitigation. However, with implementation of mitigation measures WQ-11e and WQ-11f, the impacts would be less-than-significant (under CEQA) and not adverse (under NEPA). Please see Chapter 8 of the Final EIR/S for more detail. Also, please see Master Response 14, Water Quality regarding the relevance of the federal and state antidegradation policies to the EIR/EIS assessment.
2592	15	Fails to adequately evaluate future Delta flow scenarios/alternatives as mandated by the Delta Reform Act – The BDCP documents largely ignore the Delta flow criteria that have been identified as necessary to support a healthy ecosystem by State Water Resources Control Board in its August 2010 report. These inadequacies in the BDCP documents represent a fundamental flaw that, unless corrected, should prevent the adoption of the BDCP as an element of the Delta Plan.	Water flow criteria are presented in detail in Section 4.1.2.2 of the RDEIR/SDEIS. Please also see Master Response 31 and Final EIR/EIS Appendices 3I and 3J for discussion of the proposed project’s compliance with the Delta Reform Act.
2592	16	Fails to reduce reliance on the Delta as a water supply – The BDCP fails to reduce reliance on the Delta as required by California law. Despite clear comments by many parties pointing out this deficiency, BDCP proponents have seemingly gone out of their way to reject alternatives that would reduce reliance on the Delta. For instance, the proposed BDCP EIR/EIS or RDEIR/SDEIS fails to include the analysis of a “Portfolio Alternative,” as described by the Natural Resources Defense Council, Representative John Garamendi, and others. The proposed BDCP flouts the Delta Reform Act and takes California in the direction of increased water diversions and exports from the Delta.	<p>Please see Master Response 4 (Alternative Development). The alternatives included in the EIR/EIS represent a legally adequate reasonable range of alternatives and the scope of the analysis of alternatives fully complies with both CEQA and NEPA. The specific proposals that were considered but ultimately rejected by the Lead Agencies are discussed in Appendix 3A, Identification of Water Conveyance Alternatives. Final EIR/EIS Appendix 3A thoroughly explains why various proposals were not analyzed in the EIR/EIS, including the NRDC Portfolio-Based Proposal, Congressman Garamendi’s Water Plan, and other similar concepts that would require actions that are beyond the scope of the project.</p> <p>The proposed project is just one element of the state’s long-range strategy to meet anticipated future water needs of Californians in the face of expanding population and the expected effects of climate change. The proposed project is not a comprehensive, statewide water plan, but is instead aimed at addressing many complex and long-standing issues related to the operations of the SWP and CVP in the Delta, including reliability of exported supplies. It is important to note that the proposed project is not intended to serve as a statewide solution to all of California’s water problems, and it is not an attempt to address directly the need for continued investment by the State and other public agencies in conservation, storage, recycling, desalination, treatment of contaminated aquifers, or other measures to expand supply and storage (as described in Section 1.C.3 of Appendix 1C, Demand Management Measures). For more information regarding water demand management, see Master Response 6.</p>

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			All of the alternatives evaluated in the EIR/EIS would only divert water under existing water rights which were issued to DWR and Reclamation by the State Water Board with consideration for senior water rights and Area of Origin laws and requirements. The proposed project does not seek any new water rights nor any change in total water rights issued to DWR and Reclamation. The proposed project would decrease total exports of SWP and CVP water as compared to Existing Conditions and No Action Alternative in the summer and early fall months; and increase exports in the wet winter months when the river flows are high to improve conditions for aquatic resources in the Delta.
2592	17	Given the deficiencies noted above, CVCWA requests that the BDCP proponents significantly modify the proposed project and associated documentation to address these major concerns. Simple mitigation will not be adequate to address concerns of this magnitude. The proposed project, its impact on future exports from the Delta, and the proposed operation of the project must be clearly and simply stated. The means by which the dual goals of the Delta Reform Act and reduced reliance on the Delta will be met must be clearly stated.	DWR recognizes and intends to fully comply with its obligations under the 2009 Delta Reform Act. Appendix 3J of the RDEIR/SDEIS, Alternative 4A (Proposed Project) Compliance with the 2009 Delta Reform Act, discusses how Alternative 4A would demonstrate consistency with the Delta Plan. Appendix 3J provides a description of the process that would apply, if Alternative 4A is selected, in order to demonstrate the proposed project's consistency with the Delta Reform Act's co-equal goals, including compliance with the (existing or modified) Delta Flow Objectives (currently, 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay Delta WQCP) (State Water Resources Control Board 2006). See also Master Response 31 and Final EIR/EIS Appendices 3I and 3J for additional discussion of the proposed projects compliance with the Delta Reform Act. See also Master Response 22, regarding standards covering the adequacy of the mitigation measures.
2593	1	I am definitely opposed for many reasons but the main reason is the effect of the salt water incursion on the Delta. The Vacaville municipal water supply depends on 25% of its water from the lower Delta. Of course, this would be unusable. Another 25% comes from local wells that eventually would also be affected. I don't understand how a public project of this magnitude can ignore the needs of the people and communities who depend on the continuing flow of fresh water through the system. Please be responsive to our needs and preserve our beautiful and bountiful river systems.	The issue raised by the commenter addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/EIS.
2593	9	The analysis alternatives fail to predict effects on Northern California water agencies and users that may need to offset Delta water quality impacts through upstream storage releases. This is of particular concern to the Sacramento water agencies and the associated operations of the Folsom Reservoir. In this regard, there is insufficient evidence to conclude that the project will not injure other legal users of water, including those with area of origin water rights.	Under the alternatives, senior water rights holders would continue to receive the same amount of water as under the No Action Alternative. Conveyance facilities under the action alternatives could only deliver the amount of water diverted under the existing SWP and CVP water rights and in accordance with the existing and future related regulatory requirements based upon river water levels and flow, water available in the system, the presence of threatened and endangered fish species, and water quality standards. As discussed in Chapter 5, Water Supply, of the EIR/S, climate change, sea level rise, and population growth in the northern Delta watershed are anticipated to effect senior water rights holders (as shown in the comparison between the Existing Conditions and the No Action Alternative model runs) with or without implementation of the action alternatives. Effects due to climate change are provided for informational purposes only and do not lead to mitigation. The hydrologic analysis in the EIR/EIS considered changes over long-term conditions which includes high flow events and drought periods, conditions similar to the 1976-1977 and 1987-1992 droughts, as described in Appendix 5A, Modeling Technical Appendix. The EIR/EIS analysis did not evaluate SWP and CVP emergency operations conditions such as during the recent drought because separate environmental documentation is prepared for those conditions.
2593	10	Lastly, the revised Chapter 31 in Appendix A still shows 50 significant and unavoidable impacts from California WaterFix. How this number of significant and unavoidable impacts	For more information regarding significant and unavoidable impacts please see Master Response 10.

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		(which are not debated) could be justifiably overridden by an administrative decision is unconscionable. This alone, notwithstanding our concerns above and those which are likely to be submitted by others, ought to demonstrate that California WaterFix and the associated RDEIR/SEIS is not a project beneficial to California and should not be approved.	
2594	1	<p>The "Little Sip, Big Gulp" Proposal. The recirculated EIR/EIS for the California Water Fix seems intended to promote the State Department of Water Resources' foregone conclusion to build Alternative 4A, the massive twin 40-foot diameter tunnels, capable of carrying 15,000 cubic feet of water per second (cfs). The new draft does not consider the full range of alternatives available to meet the legally required coequal goals of water supply and ecosystem restoration in the Delta. The divorce of California EcoRestore from the conveyance facility only reinforces the fact that this project is not about protecting the environment, but rather about building a plumbing system that will harm the Delta and San Francisco Bay without creating a drop of new water.</p> <p>Just as the EIR/EIS for the Bay Delta Conservation Plan (BDCP) did not consider a more diverse range of alternatives necessary to truly protect both the Delta and reliability of water supply, the 8,000 pages of new material attempt to prop up a project with well documented flaws from an environmental, economic and engineering perspective. While experts will be able to point out a myriad other flaws in the California Water Fix, I will focus my comments on the need for more serious consideration of a range of alternative measures that meet the legally required co-coequal goals</p>	<p>Please see Master Response 4 for more information regarding the range of alternatives evaluated in the EIR/EIS. The alternatives included in the EIR/EIS represent a legally adequate reasonable range of alternatives and the scope of the analysis of alternatives fully complies with both CEQA and NEPA. The specific proposals that were considered but ultimately rejected by the Lead Agencies are discussed in Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1, FEIR/EIS. Appendix 3A explains why various proposals were not analyzed in the EIR/EIS.</p> <p>For more information regarding the purpose and need of the proposed project, please see Master Response 3. For more information regarding the proposed project's compliance with the Delta Reform Act please see Master Response 31, and Appendix 3I and Appendix 3J of the Final EIR/EIS.</p>
2594	2	<p>Under the National Environmental Policy Act (NEPA), a range of alternatives that would meet the project's purpose and need must be evaluated. The California Environment Quality Act (CEQA) requires that similar analysis must be conducted. Furthermore California statute states:</p> <p>"Providing a more reliable water supply for the state involves implementation of water use efficiency and conservation projects, wastewater reclamation projects, desalination, and new improved infrastructure, including water storage and Delta conveyance facilities." CA Water Code, Division 35, Section 85004(b)</p> <p>The California Water Fix and this recirculated EIR/EIS do not meet the most fundamental requirements of both state and federal law.</p>	<p>Alternatives must achieve at least a few of the project's Purpose and Need. DWR's fundamental purpose of the proposed project is to make physical and operational improvements to the SWP system in the Delta necessary to restore and protect ecosystem health, water supplies of the SWP and CVP south of the Delta, and water quality within a stable regulatory framework, consistent with statutory and contractual obligations. By establishing a point of water diversion in the north Delta and new operating criteria to improve water volume, timing, and salinity, the proposed project is designed to improve native fish migratory patterns and allow for greater operational flexibility. Please see Master Response 45 for additional information regarding the purpose and need behind the proposed project.</p> <p>More than two-thirds of the residents of the state and more than two million acres of highly productive farm land receive water exported from the Delta watershed. The proposed project aims to provide a more reliable water supply, in a way more protective of fish. However, the project proponents have no authority to designate what water is used for.</p> <p>One of the State Water Resources Control Board's (State Water Board's) charges is to ensure that the State's water is put to the best possible use and that this use is in the best interest of the California public. This charge is reflected in part by the designation of beneficial uses established through the State Water Board's planning process. These beneficial uses are identified in each Water Quality Control Plan (Basin Plan) issued by the State Water Board.</p> <p>The Lead Agencies have no power to impose penalties on individual water users. DWR and Reclamation have contracts with various entities, some of which sell water to water retailers, who have individual policies and programs to motivate ratepayers to conserve water. Different districts have the right to take different approaches depending on their individual circumstances.</p> <p>See Master Response 4 regarding range of alternatives.</p>

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2594	3	<p>If the California Water Fix truly lived up to its name, it would cast a wider net for solutions to our state's water infrastructure and ecological challenges. Just as the Delta Stewardship Council's Delta Plan, the Department of Water Resources' California Water Action Plan, the Natural Resources Defense Council's Portfolio-Based BDCP Conceptual Alternative, and my Water Plan for All of California, consider a wide range of actions that should be taken to provide water reliability, so should the California Water Fix consider actions beyond a new pumping facility and large underground tunnels. Each of the plans listed above discuss water conservation, recycling, desalination, the creation of more storage (both surface and aquifer), and fixing the Delta as the means to achieving a reliable water supply. These elements are vital to our water future, and by leaving them out of the California Water Fix's scoping and planning, the state is failing to seek out the most economical and environmentally viable option for our state and the Delta.</p>	<p>Since 2006, the proposed project has been developed based on sound science, data gathered from various agencies and experts over many years, input from agencies, stakeholders and independent scientists, and more than 600 public meetings, working group meetings and stakeholder briefings. Please refer to Master Response 4 for additional details on the selection of alternatives and compliance with CEQA and NEPA and the Delta Reform Act, including why the Portfolio-Based alternative was not included in the proposed project.</p> <p>Appendix 1C of the Final EIR/EIS, Water Demand Management, describes conservation, water use efficiency, and other sources of water supply including desalination. Refer to Master Response 6 for more information on demand management. Although components such as desalination plants and demand management measures have merit from a statewide water policy standpoint, and are being implemented or considered independently through the State, they are beyond the scope of the proposed project. For more information regarding why water storage was not included in the proposed project, refer to Master Response 37 and Appendix 1B, Water Storage, EIR/EIS.</p>
2594	4	<p>If California is to create a more reliable and environmentally sensitive water supply it must adopt a comprehensive approach. There are six specific actions to provide a foundation for California's water future.</p> <ol style="list-style-type: none"> 1) Use a science driven process, 2) Water conservation, 3) Recycling and desalination 4) The creation of new surface and aquifer storage systems, 5) Fix the Delta - right sized conveyance, levee improvements, and habitat restoration, 6) Protection of existing water rights 	<p>The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS. However, please refer to Master Response 6 for additional details on demand management. Also, please see Master Response 4 for additional details on the selection of alternatives and Master Response 26 for additional information on water rights and changes in Delta exports. Additionally, please refer to Master Response 7 for information on desalination and why it was not included as a project alternative.</p>
2594	5	<p>Let science drive the process</p> <p>The California Water Fix and any other proposal must be based on, and driven by, quality science that measures and informs decisions. California law requires that the Delta's aquatic and terrestrial ecosystems be protected. [footnote 2 CA Water Code, Division 35, Section 85004(c)] We must do so, not just because the laws demand it, but because our status as human beings on this planet demands that we pay attention and protect precious and rare ecosystems.</p> <p>"In assessing the environmental impact of any project, concern is usually shown for its effects on soil, water and air, yet few careful studies are made of its impact on biodiversity, as if the loss of species or animals and plant groups were of little importance." Pope Francis</p> <p>Go forward carefully. Start with the least destructive option. Use science to evaluate each step starting with conservation, recycling, and surface and underground aquifer storage systems, fixing the Delta levees, and then and only then, if necessary proceed to a conveyance facility through the Delta. Remember that the Delta is a unique and precious environmental resource. We must let science govern.</p>	<p>The primary objective of the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) is to disclose to decision makers the environmental impacts of a proposed action and alternatives, evaluating the potential adverse change to existing conditions and determining if mitigation is available to offset the potential impact. The 2015 RDEIR/SDEIS and the 2013 DEIR/EIS together with many other supporting documents developed through the project planning (e.g., engineering, economic, and other technical studies and other environmental compliance processes [e.g., Endangered Species Act, Clean Water Act, and water rights compliance]), will serve as the basis for DWR and other agencies' decisions on whether to approve the proposed project. The Federal and State Lead Agencies have done their best to make the EIR/EIS for the proposed project as fair, objective, and complete as possible. The Lead Agencies are following the appropriate legal process and are complying with CEQA and NEPA in preparing the EIR/EIS for the proposed project.</p> <p>The proposed project is one component, among many, of the California Water Action Plan. The California Water Plan evaluates different combinations of regional and statewide resources management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. Follow the California Water Plan here: http://www.waterplan.water.ca.gov/.</p> <p>By establishing a point of water diversion in the north Delta the proposed project is designed to improve native fish migratory patterns while securing reliable water deliveries. Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1, EIR/EIS, describes the range of conveyance</p>

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			alternatives considered in the development of the EIR/EIS. Appendix 1B, Water Storage, EIR/EIS, describes the potential for additional water storage and Appendix 1C, Demand Management Measures, EIR/EIS, describes conservation, water use efficiency, and other sources of water supply including desalination. While these elements are not proposed as part of the proposed project, the Lead Agencies recognize that they are important tools in managing California's water resources. Please refer to Master Response 4 for additional details on the selection of alternatives. Also, please see Master Response 6 for additional details on demand management.
2594	6	<p>The quickest and cheapest source of new water is to stretch our current supplies by conserving what we have. Californians have been at this for years in our cities, in our industries, on our farm, and in our homes. Statewide conservation efforts this summer alone have saved 611,566 acre feet of water proving the potential of this largest source of readily available new water. [footnote 3: California State Water Resources Control Board, Water Conservation Portal-Conservation Reporting</p> <p>http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.shtml</p> <p>All of us should do a lot more water conservation, not just the agriculture community. The water conservation mandate set by the state is a 20 percent reduction per capita by 2020 which equals 2 million acre feet. [footnote 4: California, Department of Water Resources, California Water Plan Update 2013, Urban Water Use Efficiency Chapter 3, 2013 http://www.waterplan.water.ca.gov/docs/cwpu2013/Final/Vol3_Ch03_UrbanWUE.pdf] In a very real way conservation can create new water that was not previously available for use. To be on the conservative side, let us assume that just one half of the State's goal could be obtained in the next decade, thereby adding 1 million acre feet of new water to our supplies each year.</p>	The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS. See Response to Comment 2594-5 for a discussion of how the proposed project is one component, among many, of the California Water Action Plan which evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship.
2594	7	<p>Can you name the fifth largest river on the west coast of the Western Hemisphere? It's the water that flows out of the sanitation plants in Southern California and is dumped into the Pacific Ocean.</p> <p>Why would any sane government take water from the Sacramento River, pump it 500 miles south, lift it 2,000 feet in the air, clean it, use it once, then clean it again to a higher standard than the day it arrived in Southern California, then dump it in the ocean? California does just this as it discharges vast quantities of water to the ocean each year, much of which could be reused.</p> <p>We need to think seriously about recycling, not just in Southern California, but everywhere. The State of California currently recycles approximately 669,000 acre feet of municipal water each year [footnote 5: CA Department of Water Resources, 2009 Municipal Wastewater Recycling Survey Results.</p> <p>Http://www.waterboards.ca.gov/water_issues/programs/grants_loans/water_recycling/docs/munirecsrvy/Table1.pdf</p> <p>and has set a water recycling goal of 1.5 million acre feet of new water in California by 2020, and 2.5 million acre feet by 2030. [footnote 6: California, Department of Water Resources, California Water Plan Update 2009, Integrated Water Management Bulletin 160-09, Vol. 2, Chapter 11, 2009. http://www.waterplan.water.ca.gov/cwpu2009/index.cfm]</p>	The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS. However, see Response to Comment 2594-5 for a discussion of how the proposed project is one component, among many, of the California Water Action Plan which evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship.

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2594	8	Another option is desalination of the ocean water. This is feasible and used throughout the world, however it is not a viable option for all communities. It costs about 36 to 60 percent more to desalinate sea water than to recycle urban wastewater using current technologies. [footnote 7: California, Department of Water Resources, California Water Plan Update 2013, Resource Management Strategies Bulletin 160-13, Vol. 3, Chapter 10, 2009.] However, technological advances are being pursued for both recycling and desalination that could lower the costs of each.	The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS. However, see Response to Comment 2594-5 for a discussion of how the proposed project is one component, among many, of the California Water Action Plan which evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. For more information regarding desalination please see Master Response 7.
2594	9	Water storage south of the Delta is possible and necessary. The combined capacity of the great Delta pumps near Tracy is 15,000 cubic feet per second. They do not operate year round, only when there is sufficient water in the Delta, when threatened fish are not near the pumps, and when there is agricultural and urban demand south of the Tracy pumps. Currently, there is very limited water storage capacity south of the Delta. We must build more. San Luis and Los Vaqueros reservoirs should be expanded. New dams could be built at Los Banos Grandes, and numerous smaller off stream sites throughout the San Joaquin Valley. There are many aquifers throughout the San Joaquin Valley that may prove suitable to store additional water that would be used in a conjunctive use water management system. With these water storage facilities in place, the need for havoc causing excessive pumping in the Delta could be avoided.	See Response to Comment 2594-5 for a discussion of how the proposed project is one component, among many, of the California Water Action Plan which evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. While water storage is a critically important tool for managing California's water resources, developing new water supplies and including new storage is not part of either DWR's fundamental purpose or project objectives or Reclamation's purpose and need for the proposed project, which are focused on fixing problems with the current conveyance system for the SWP rather than expanding the system with new storage facilities. For more information regarding purpose and need for the proposed project please see Master Response 3. Please see Master Response 37 regarding water storage.
2594	10	When coupled with recycling, the underground aquifers in Southern California are another key to our water future. The underground aquifers of the South Coast Hydrologic Region in Southern California have a combined capacity larger than Lake Shasta. [footnote10: California, Department of Water Resources (1975). Bulletin no. 118: California's Ground Water. http://www.dwr.water.ca.gov/pubs/groundwater/bulletin_118/california's_ground_water_bulletin_118-75_/b118-1975.pdf] [footnote 11: Based on DWR calculations of 10.4 million acre-feet of usable storage capacity in the South Coastal Hydrologic Study Area) Today Orange County Water District and the Chino Basin agency recycle water and put into the underground water basins to be stored for those inevitably dry years and to protect the quality of the aquifer. When needed, it is pumped out, used, cleaned and returned to storage. Statewide, this recycling system could create as much as 2.5 million acre feet of new water, and thereby reduce the need for importing Colorado and Sacramento River water. We applaud the recent decision by Metropolitan Water District to build a new recycling program in its district and encourage other water districts to pursue expanding the capacity of the state's water recycling system.	The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS. See Response to Comment 2594-5 for a discussion of how the proposed project is one component, among many, of the California Water Action Plan which evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. As discussed in Response to Comment 2594-9, developing new water storage is not part of either DWR's fundamental purpose or project objectives or Reclamation's purpose and need for the proposed project, which are focused on fixing problems with the current conveyance system for the SWP rather than expanding the system with new storage facilities. For more information regarding purpose and need please see Master Response 3.
2594	11	Surface and underground storage should be used in a conjunctive use water management program. Use the rivers when there is lots of water and use the reservoirs when there is little. Water storage north of the Delta is also important, and three proposals are on the books today. An off stream reservoir at Sites, located west of Williams in Colusa County, has great promise for storage and for creating greater flexibility in managing the Sacramento River for salmon runs, water demand, and Delta outflow. This reservoir can deliver 500,000 acre feet of annual yield and the additional flexibility that it offers can under some scenarios, save another 500,000 acre feet of water that would otherwise be released into the river systems [footnote 12; Sites Project Joint Powers Authority, North-of-the-Delta Off Stream Storage Fact Sheet, www.sitesjpa.net .] Raising Shasta Dam is also possible, as is better conjunctive management of the many aquifers in the Sacramento and San Joaquin Valley. State and federal agencies have already commenced studies for these projects. A	See Response to Comment 2594-5 for a discussion of how the proposed project is one component, among many, of the California Water Action Plan which evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. As discussed in Response to Comment 2594-9, developing new water storage is not part of either DWR's fundamental purpose or project objectives or Reclamation's purpose and need for the proposed project, which are focused on fixing problems with the current conveyance system for the SWP rather than expanding the system with new storage facilities. For more information regarding purpose and need please see Master Response 3.

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		quick completion of these studies and construction of those that are feasible is essential.	
2594	12	<p>All of the alternatives envisioned in this EIR/EIS (Alternatives 4A, 2D, 5A) depend on the existing Delta channels to deliver approximately half of the average annual water deliveries of approximately 2.5 million acre feet of water. This is the "Big Gulp". Thus, an important part of securing California's water system is improving the integrity of the Delta levees. The levee improvements, which are not included in Alternatives 4A, 2D, 5A would increase the security of the water delivery system, and also significantly increase the safety and security of state highways, rail lines, natural gas fields, gas and fuel pipelines, drinking water pipelines, and numerous businesses and towns.</p> <p>Alternative 4A, the "twin tunnels", does not "fix" California's water problem. It assumes a dual conveyance strategy of transporting water to the pumps in the tunnels and also through the existing Delta channels. However the recirculated draft EIR/EIS does not include any meaningful analysis of the improvement of the levees or how the construction process would impact the levees. If the Delta levees are not improved, the only conclusion that can be drawn is that the California Water Fix really intends to abandon the Delta and only use the massive tunnels to transport water south. Thus the "twin tunnels" become an existential threat to the Delta and San Francisco Bay, the largest and most important estuary system on the west coast of the western hemisphere. This would be in direct violation of the Delta Reform Act.</p>	<p>The California Department of Water Resources' Levee Repairs and Floodplain Management Office is responsible for administering levee programs through evaluation and direct rehabilitation of structural deficiencies in California's levee system. Overall levee repairs and improvement programs administered by DWR will continue with available funding. For additional information on the relationship between the proposed project and flood protection in the Delta, please see EIR/EIS Appendix 6A BDCP/California WaterFix Coordination with Flood Management Requirements. See Response to Comment 2594-5 for discussion of how the proposed project is one component, among many, of the California Water Action Plan which evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. See Master Response 31 for a discussion of the proposed project's compliance with the Delta Reform Act.</p>
2594	13	<p>Furthermore, the lack of storage south of the Delta in Alternative 4A makes the massive size of the proposed tunnels superfluous. There is no place to store the water. As a result, the California Water Fix as it stands does not meet the State's mandated coequal goals and fails to offer any alternatives that even come close to meeting them. The State's preferred alternative constructs a conveyance facility that will potentially harm the Delta while providing no reliable water supply.</p> <p>Fixing the Delta must begin with fixing the Delta levees.</p> <p>"15 years after the CALFED Bay-Delta program set a goal of bringing all Delta levees up to the standards of the U.S. Army Corps of Engineers' PL 84-99 program, the levee systems protecting 69 percent of the Delta's land do not meet this standard. Demands for future levee improvements are significant." [footnote 13; Delta Stewardship Council. (2015). State Investments in Delta Levees: Key Issues for Updating Priorities. http://deltacouncil.ca.gov/sites/default/files/documents/files/Item%2011_Attach%201_14-0918%20Levee%20Investment%20Strategy%20Issue%20Paper.pdf]</p> <p>Analyses conducted by Department of Water Resources and the Army Corps of Engineers have shown that seismic activity and subsidence represent threats to earthen levees protecting the Delta. Levee failures would not only inundate Delta islands, but would also cause salt water intrusions disrupting the water supply. [footnote 14: United States Army Corps of Engineers. (2014) Delta Islands and Levees Feasibility Study, California]</p> <p>In order to ensure that this "Big Gulp" of high-water flows can actually work, the levees must be improved. Specifically the levees for South and North Forks of the Mokelumne River and the sloughs and rivers in the Central and South Delta must be upgraded to ensure greater capacity, reliability and flood safety. Also key levees blocking sea water intrusion into the Delta must be upgraded.</p>	<p>See Response to Comment 2594-5 for a discussion of how the proposed project is one component, among many, of the California Water Action Plan which evaluates different combinations of regional and statewide resources management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. As discussed in Response to Comment 2594-9, developing new water storage is not part of either DWR's fundamental purpose or project objectives or Reclamation's purpose and need for the proposed project, which are focused on fixing problems with the current conveyance system for the SWP rather than expanding the system with new storage facilities. For more information regarding purpose and need please see Master Response 3. See Response to Comment 2594-12 for a discussion of the relationship between the proposed project and levee stability. Please see Appendix 6A regarding flood and levees and the Final EIR/EIS Appendix 1B that explains water storage and the proposed project.</p>

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2594	14	<p>A key component of improving the Delta is a fish screen on the Cross Delta Channel Gates and Georgiana Slough, which are located in Walnut Grove, so that out migrating salmon will not be drawn southward to the pumps. Consideration should be given to the sound and light fish screen concept recently tested on the Georgiana Slough.[footnote 15: California Department of Water Resources. 2011 Georgiana Slough Non-Physical Barrier Performance Evaluation. http://baydeltaoffice.water.ca.gov/sdb/GS/docs/GSNPB_2011_Final_Report+Append_090512.pdf]</p>	<p>The commenter refers to the bioacoustical fish fence (BAFF) that has been tested at Georgiana Slough. DWR continues to explore engineering options for keeping migrating fish from straying into the central Delta, and the proposed project would implement a barrier design based on further testing and research that is already underway.</p>
2594	15	<p>The little sip solution: an overview:</p> <p>As conservation, recycling, surface and aquifer storage and improvements to the Delta levees come on line, continuous and robust scientific study of the effects of these improvements on the health of the Delta must take place. If it is determined that the reduced demand on water from the Delta and altered pumping regimes from the Delta are not sufficient to meet the goal of water reliability, then it's time for "Little Sip Facility".</p> <p>The "Little Sip Facility" is a much smaller facility with a capacity of no more than 3,000 cubic feet per second, built to deliver water from the Sacramento River to the Tracy pumps. 40 percent of this Delta-friendly system is already built and begins only two miles from the State Capitol, at the Port of Sacramento. A fish screen and a low head pump at the existing opening on the Sacramento River would allow 3,000 cubic feet per second of Sacramento River water to enter the Sacramento Deepwater Ship Channel and flow 25 miles south to a shipping lock at the southern end of the channel. Then, pumps would deliver the water into two 10-foot diameter, pressurized pipes that would span a mere 12 miles beneath the Sacramento and San Joaquin Rivers and deliver water into a new channel along the east side the Old River channel leading to the Tracy Pumps.</p> <p>An alternative route could deliver the water from the pressurized pipe to an aqueduct at Brentwood and on to the pumps at Tracy. This route would intersect six vital San Francisco Bay aqueducts, thus creating a safety system for 8 million Bay Area residents.</p> <p>The "Little Sip" described above would be coupled with a "Big gulp" which is drawing water from the existing Delta channels when there are high water flows and no Delta smelt near the Tracy pumps.</p>	<p>As described in Response to Comment 2594-1, the alternatives evaluated in the EIR/EIS represent a legally adequate reasonable range of alternatives and the scope of the analysis of alternatives fully complies with both CEQA and NEPA. The specific proposals that were considered but ultimately rejected by the Lead Agencies are discussed in Appendix 3A Identification of Water Conveyance Alternatives, Conservation Measure 1, FEIR/EIS. Appendix 3A explains why various proposals were not analyzed in the EIR/EIS. Please see also Response to Comment 4 for discussion of the range of alternatives selected.</p>
2594	16	<p>With the normal minimum flows in the Sacramento River above 15,000 cubic feet per second, a small 3,000 cubic feet per second facility could operate at least 300 days per year, delivering approximately two million acre feet of water to the pumps at Tracy and then on to the new and expanded storage facilities in the south (Los Vaqueros, San Luis reservoir, Los Banos Grandes, and the many aquifers in the San Joaquin Valley and south of the Tehachapí's.) Note that the full 9,000 cubic feet per second capacity of the tunnels proposed in Alternative 4A of the California Water Fix would only be operational during large storms flows that occur at most a few times each year. Thus these huge tunnels become a massive waste of money for California and California water agencies.</p> <p>This is where the "Little Sip, Big Gulp" strategy comes into play, and why fortification of the Delta levees is so essential. In average and above average water years, there is sufficient water in the Delta to allow the Delta pumps to take a "Big Gulp" of 2.5 million acre feet of water. This amount, together with the two million acre feet delivered through the 3,000 cubic feet per second facility, would meet the annual water demand south of the Delta.</p>	<p>Please see Chapter 3 in the EIR/EIS and Appendix A RDEIR/SDEIS, Description of Alternatives, Section 3.5.10, for a description of facilities that would be constructed under Alternative 5. Alternative 4A and other action alternatives were developed to decrease total exports of SWP and CVP water as compared to Existing Conditions and No Action Alternative in the summer and early fall months; and increase exports in the wet winter months when the river flows are high. The water would be stored at locations south of the Delta during the high flow periods to allow reductions in deliveries in drier periods. Please see also Master Response 4 for discussion on the range of alternatives selected.</p>

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		<p>Rather than spending billions of dollars on a construction project that will rarely operate at its full capacity, we should prioritize the 300 day reliability of "Little Sip" versus the sporadic operation of the twin tunnels.</p> <p>By Department of Water Resource's own analysis in the BDCP Draft EIR/EIS under Alternative 5, a 3,000 cubic feet per second facility in the North Delta would result in a net increase in water supply of 345,000 acre feet per year on average, when operated in conjunction with South Delta exports. [footnote 16: 2013 BDCP Draft EIR/EIS, Figure 5-17]</p>	
2594	17	<p>We must improve delta smelt science around the Tracy pumps. Current studies indicate that the delta smelt follow turbidity and move toward the Tracy pumps during times of high pumping, as storm water flows are pulled through the Delta.[footnote 17:Feyrer, F., M. Nobriga, and T. Sommer. 2007. Multi-decadal trends for three declining fish species: habitat patterns and mechanisms in the San Francisco Estuary, California, U.S.A. Canadian Journal of Fisheries and Aquatic Sciences 64:723-734.] Improved monitoring can and should be implemented to determine where the smelt are, so that pumping necessary to achieve the "Big Gulp" of 2.5 million acre feet can occur without harming the delta smelt and other endangered species. (Note that this level of pumping is less than one half current annual water pumped from the Delta).</p> <p>Delta smelt trawl surveys conducted by the California Department of Fish and Wildlife have found smelt in the Sacramento Deep Water Ship Channel.[footnote 18: Spring Kodiak Trawl Survey #3 of 2014 http://www.dfg.ca.gov/delta/data/skt/DisplayMaps.asp] The construction of a single shipping lock at the southern end of the levees would isolate the Sacramento River water flowing south in the channel from the Delta water and any smelt in the area. Some smelt habitat in the channel would be lost. However mitigation measures such as shallow flooding of low value land in the area could significantly expand delta smelt habitat.</p> <p>Salmon migration in and out of the Delta is covered in the Alternative 4A studies. One 3,000 cubic feet per second fish screen at the Sacramento Ship Channel facility and another fish screen at the Delta Cross Channel Gates would be much cheaper and environmentally preferable to three larger (9,000 cubic feet per second) fish screens further down the Sacramento River as envisioned in Alternative 4A.</p>	<p>With respect to delta smelt science, the Collaborative Science and Adaptive Management Program is currently working to improve the science. The Sacramento Deepwater Ship Channel already has a boat lock, cutting it off from the Sacramento River, so it is tidal and does not receive Sacramento River water in the manner the commenter suggests. Analysis of project alternatives included consideration of a fish screen at the Delta Cross Channel (Alternative 9); it is unclear what a fish screen at the Sacramento Deepwater Ship Channel would be intended for.</p> <p>The proposed project would enable DWR to construct and operate new conveyance facilities that improve conditions for endangered and threatened aquatic species in the Delta while at the same time improving water supply reliability, consistent with California law (see, e.g., Cal.Wat. Code, § 85001(c)). Implementing the conveyance facilities would help resolve many of the concerns with the current south Delta conveyance system, and would help reduce threats to endangered and threatened species in the Delta, including entrainment at south Delta export facilities. For instance, implementing a dual conveyance system would align water operations, and their location, to better reflect natural seasonal flow patterns by creating new water diversions in the north Delta equipped with State-of-the-art fish screens, thus reducing reliance on south Delta exports during times of the year when listed aquatic species are present and most vulnerable. For more information on mitigation measures to minimize contraction and operational-related impacts to fish species, including Delta and longfin smelt, please see Chapter 11, EIR/EIS.</p>
2594	18	<p>Mitigation of the effects for the use of the ship channel could be strengthening the west levee of the Deep Water Shipping Channel. This would serve the dual purpose of protecting the levees necessary to move water down the channel and protecting West Sacramento from floods caused by high water flows in the Yolo Bypass.</p> <p>Additional mitigation should include deepening the ship channel to 35 feet, designing the intake fish screen on the Sacramento River in manner that is compatible with development plans of West Sacramento including access roads, river oriented parks, walkways and educational facilities focused on the ecology of the region.</p> <p>Delays caused by the new shipping lock on the Deep Water Shipping Channel could be mitigated by building a new high bridge across the Sacramento River on Highway 12 at Rio Vista, thus eliminating the current impediment to all river and Highway 12 traffic. This high bridge is a subject of a Caltrans study.</p> <p>Mitigation for the loss of delta smelt and other species habitat in the shipping channel could</p>	<p>The commenter offers an opinion on additional mitigation measures that could be carried out improve the Deep Water Ship Channel and does not raise a specific issue related to the adequacy of the EIR/EIS.</p>

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		be accomplished by inundating low value islands near the southern end of the channel thus creating shallow water habitat.	
2594	19	According to a presentation made to the BDCP Steering Committee by Ron Milligan from the United States Bureau of Reclamation on July 2010, a 3,000 cubic feet per second conveyance with one intake on the Sacramento River south of Freeport would cost approximately \$7 billion dollars. This modeling is based on a 40-mile tunnel along the same alignment as the twin tunnel project. It does not use the Deep Water Shipping Channel. The report estimated that SWP-CVP exports would average 6 million acre feet, with 1.4 MAF from the northern diversion and 4.6 million acre feet from the southern diversion point. Furthermore, the capital cost for an incrementally increased supply increases dramatically as the size of the conveyance increases - while water would cost \$150/acre foot with a 3,000 cubic feet per second conveyance, a 15,000 cubic feet per second conveyance would cost approximately \$210/acre foot under current conditions. Furthermore, a 3,000 cubic feet per second conveyance would cost approximately \$380 million annually, when considering debt service, operations and maintenance, and power costs compared to \$540 million for the 9,000 cubic feet per second twin tunnels. Note that these figures are based on very different project than the "Little Sip" discussed here. [footnote 19: Milligan, R. (2010, July 1). BDCP Sizing Presentation. Lecture presented at BDCP Steering Committee, Sacramento, CA.]	The comment appears to be referencing a project alternative with one intake (3,000 cfs). This was Alternative 5—Dual Conveyance with Pipeline/Tunnel and Intake 1 (3,000 cfs; Operational 27 Scenario C) in the Public Draft EIR/EIS released in December 2013. This alternative was not selected as the preferred alternative for the reasons described in the Draft EIR/EIS. See Master Response 4 for a discussion of the range of alternatives selected. See also Response to Comment 2594-16 for a discussion of Alternative 5.
2594	20	In a 1997 report, CALFED considered using the Sacramento Deep Water Shipping Channel and found "no major technical problems" in this route, (Alternative 3G). [footnote 20: CALFED Bay-Delta Program. (1997) Alternative Narrowing Process: Alternative 3G] This route is identical to that proposed in "Little Sip, Big Gulp", except it diverted 5,000 cubic feet per second from the river. A 3,000 cubic feet per second facility would result in a lower cost. The State identified the need for a low lift pump station on the Sacramento River that would provide the hydraulic head to move water through the channel during periods when gravity flows alone were insufficient. The plan called for a new unscreened pumping plant that would move water into a pressurized pipeline to Brentwood (about the same distance as the pipe line to Old River) where an open canal would convey the water to Clifton Court Forebay and the Tracy pumping plants. This early plan did not include a shipping lock or a fish screen on the Sacramento River. However this plan indicates the potential for the use of the ship channel.	As described in Response to Comment 2594-1, the alternatives evaluated in the EIR/EIS represent a legally adequate reasonable range of alternatives and the scope of the analysis of alternatives fully complies with both CEQA and NEPA. The specific proposals that were considered but ultimately rejected by the Lead Agencies are discussed in Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1, FEIR/EIS. Appendix 3A explains why various proposals were not analyzed in the EIR/EIS. Please see also Response to Comment 4 for the range of alternatives selected.
2594	21	The "Little Sip, Big Gulp" solution would require construction of a new intake replacing the existing intake at the Port of Sacramento. A fish screen at the intake, a low head pump to move water during periods of insufficient gravity; a shipping lock at the south end of the channel to facilitate commerce and to prevent Sacramento River water from flowing into the Delta; an intake and second pump north of the southern end of the eastern levee of the Deep Water Shipping Channel; two new 10-foot diameter pressurized pipelines to carry water under the Sacramento and San Joaquin Rivers; and an aqueduct to carry the water to the Tracy pumps along the east side of Old River or to Brentwood then through Contra Costa County to the Tracy Pumps. The discussion above indicates that the "Little Sip, Big Gulp" solution would be less expensive than the Department of Water Resource's \$7 billion cost estimate for a 3,000 cubic feet per second 40-mile tunnel through the entire Delta. Even if we were to accept the Department of Water Resource price tag the Little Sip Big Gulp solution would be \$10 billion less expensive than the \$17 billion cost of the 9,000 cubic feet per second tunnel in Alternative 4A.	The commenter offers an opinion about the desirability of a through Delta alternative concept and does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS. See Response to Comment 2594-1 and Master Response 4 for a discussion of the range of alternatives evaluated in the EIR/EIS.

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2594	22	<p>U.S. Armt Corps of Engineers estimated the costs of deepening the Deep Water Shipping Channel to 35' to be around \$168 million, with an annual cost of \$8 million and an annual benefit of \$24 million. [footnote 21: United States Army Corps of Engineers. (2011) Sacramento River Deep Water Ship Channel Limited Reevaluation Report: With-Project Economic Analysis.http://www.spn.usace.army.mil/Portals/68/docs/SRDWSC/Appendix_E.pdf]</p> <p>CALFED estimated a cost of \$1.1 billion to \$2.2 billion (adjusted for inflation to 2015 dollars) to upgrade the Delta levees, as reported in the Public Policy Institute of California's Armored-Island Aqueduct proposal. [footnote 22: PPIC. Dealing with the Delta: Envisioning Futures, Finding Solutions. February 2007] Presumably the twin tunnel project and the Little Sip would have the same Delta levee costs, since both rely on continuing to pump water from the Delta when it is available.</p>	<p>Please see Chapter 2, FEIR/EIS, for the BDCP/CWF purpose and need, and Appendix 6A Sections 6A.2 and 6A.3 for discussion on existing levee improvement programs and funding mechanisms, which would not be affected by the BDCP/CWF. Levees are an important public safety resource and the proposed project would not change levee policy or replace ongoing programs and grant projects aimed at facilitating and supporting levee improvements in or outside the Delta. It recognized that levee maintenance and safety in the Delta is an important issue for the residents of the Delta and for statewide interests.</p>
2594	23	<p>The analysis by the Department of Water Resources for the 3,000 cubic feet per second option that takes water out of the Sacramento River below Freeport includes a fish screen at the intake. It is reasonable to assume that a similar fish screen at the port of Sacramento would have a similar cost. The CALFED Storage and Conveyance Refinement Team estimated that screening an isolated Delta conveyance facility would cost \$22,700 per cubic feet per second in 2007. [footnote 23: CALFED Storage and Conveyance Refinement Team 1997i. Facility Descriptions and Updated Cost Estimates for an In-Delta Storage Project. October 1997.] Based on this information, a 3,000 cubic feet per second facility today would cost \$78,150,000 adjusted for inflation.</p>	<p>The issue related to the cost estimate as raised by the commenter addresses the merits of the project and does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS. The project description and related cost estimate developed in the 1997 Facility Descriptions and Updated Cost Estimates for an In-Delta Storage Project was subsequently analyzed in the 2002 In-Delta Storage Draft Report on Engineering Investigations and the 2002 In-Delta Storage Program Draft Report on Environmental Evaluations prepared by the CalFed Bay-Delta Program. The 2002 reports indicated that the fish screens identified in the previous 1997 report would not have been compliant with the California Department Fish and Game (now known as California Department of Fish and Wildlife (CDFW)) and NMFS Fish Screening Criteria to reduce the potential for impingement, entrainment, and loss due to predation. In addition, the fish screens identified in the previous 1997 report would not meeting cleaning requirements either for manual or automatic cleaning methods as established by CDFW and NMFS. It should be noted that the regulatory requirements for fish screening criteria have continued to change since 2002. The 1997 report also included numerous diversion facilities which were consolidated into two 3,000 cfs intakes in the 2002 reports.</p>
2594	24	<p>An additional mitigation measure could be strengthening the west bank levee of the Sacramento deep Water Shipping Channel. According to United States Army Corps of Engineers estimates improving the west bank levee of the would cost \$202 million [footnote 24: United States Army Corps of Engineers. (2014) West Sacramento General Reevaluation Report]</p>	<p>Please see Chapter 2, FEIR/EIS, for the BDCP/CWF purpose and need, and Appendix 6A Sections 6A.2 and 6A.3 for discussion on existing levee improvement programs and funding mechanisms, which would not be affected by the BDCP/CWF. Levees are an important public safety resource and the proposed project would not change levee policy or replace ongoing programs and grant projects aimed at facilitating and supporting levee improvements in or outside the Delta. It recognized that levee maintenance and safety in the Delta is an important issue for the residents of the Delta and for statewide interests.</p>
2594	25	<p>These financial savings could be used for new and expanded storage facilities south of the Delta at Los Vaqueros, San Luis reservoir, Los Banos Grandes, and the many aquifers in the San Joaquin Valley and Los Angeles basin, and north of the Delta at the off stream Sites Reservoir. Savings could also be used for urban and agricultural conservation.</p>	<p>While water storage is a critically important tool for managing California's water resources, developing new water supplies and including new storage is not part of either DWR's fundamental purpose or project objectives or Reclamation's purpose and need for the proposed project, which are focused on fixing problems with the current conveyance system for the SWP rather than expanding the system with new storage facilities. For more information regarding purpose and need please see Master Response 3. Please see Master Response 37 regarding water storage.</p>
2594	26	<p>Ultimately, construction of a 3,000 cubic feet per second conveyance as described in the "Little Sip, Big Gulp" proposal with levee improvements and appropriate mitigation, is a much cheaper alternative than the alternatives in the California Water Fix. The State's proposal would also eliminate the economic, historic, cultural, and environmental impact on the North Delta. Armoring the Delta as presented in the "Little Sip, Big Gulp", would reduce flood risk in Delta cities and historic communities and also create water supply reliability for</p>	<p>See Response to Comment 2594-1 and Master Response 4 for a discussion of the range of alternatives evaluated in the EIR/EIS, Master Response 31 for discussion of the proposed project's compliance with the Delta Reform Act, Master Response 6 for additional details on demand management, and Master Response 24 for details on the Delta as a place and the impacts of the proposed project on the Delta. See also Response to Comment 2594-12 for a discussion of the relationship between the proposed project and levee stability.</p>

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		Southern California and the San Joaquin Valley.	
2594	27	<p>Under the National Environmental Policy Act (NEPA), a range of alternatives that would meet the project’s purpose and need must be evaluated. The Council on Environmental Quality (CEQ) has provided guidance on what this "range of alternatives" means as Environmental Impact Statements (EIS) are developed under NEPA:</p> <p>"The phrase "range of alternatives" refers to the alternatives discussed in environmental documents. It includes all reasonable alternatives, which must be rigorously explored and objectively evaluated... Section 1502.14 requires the EIS to examine all reasonable alternatives to the proposal. In determining the scope of alternatives, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant." [footnote 25: Counsel on Environmental Quality, Guidance document "NEPA Forty Most Asked Questions"</p> <p>This guidance is clear that alternatives must represent a wide range of options that can be rigorously explored and objectively evaluated. The draft EIS fails to meet this requirement in several ways. First, it fails to provide a wide range of options that meet the purpose and need of the proposed action. The stated planning goals for the California Water Fix/BDCP are to restore ecological functions of the Sacramento-San Joaquin Delta and improve water supply reliability in the state of California. Alternatives to meet these needs should include not only a conveyance facility, but also other actions and water projects that could be pursued to achieve water reliability. The alternatives in the recirculated draft EIR/EIS fall drastically short in this regard. There is no discussion of water conservation measures or recycling projects or increasing storage capacity, all of which could be used to support water reliability the recirculated draft EIS fails to rigorously explore alternatives. Building massive tunnels through the Delta is not the only option for creating water reliability, and there are plenty of other ideas out there for how reliability could be achieved. If the range of alternatives identified do not include all options that could reasonably meet the purpose and need for the California Water Fix/BDCP, then a rigorous review is impossible to achieve.</p> <p>Finally, reasonable alternatives are those that are practical and feasible from a technical and economic standpoint, not just those that are desirable for the applicant. Proponents of the California Water Fix/BDCP have one goal in mind – building tunnels to move water from the North to the South. These blinders have limited the scope of this project and the scope of alternatives put forth for analysis. For these reasons, this EIR/EIS violates federal law and fails to provide the required components for an EIS under NEPA.</p>	<p>See Response to Comment 2594-1 and Master Response 4 for a discussion of the range of alternatives evaluated in the EIR/EIS. See Response to Comment 2594-5 for a discussion of how the proposed project is one component, among many, of the California Water Action Plan which evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. While water storage is a critically important tool for managing California’s water resources, developing new water supplies and including new storage is not part of either DWR’s fundamental purpose or project objectives or Reclamation’s purpose and need for the proposed project, which are focused on fixing problems with the current conveyance system for the SWP rather than expanding the system with new storage facilities. For more information regarding purpose and need please see Master Response 3. Please see Master Response 37 regarding water storage.</p>
2594	28	<p>The current draft EIS/EIR also violates state laws governing the development of the project. First, the California Environmental Quality Act (CEQA) applies to state projects which “may have a significant effect on the environment. [footnote 26: CA Public Resources Code Section 21100(a)] Since building tunnels 40-feet wide and 40-miles long through the Delta will directly cause physical change, the state has prepared a Draft Environmental Impact Report (EIR) to comply with CEQA. However, draft EIRs must provide feasible alternatives or mitigation measures that could substantially lessen the significant environmental effects of the proposed project, and this is where the state has failed. As previously mentioned, the alternatives offered in the draft EIR are not actual alternatives to the proposed project, they merely offer different sizes of conveyance systems without looking at alternatives that</p>	<p>CEQA requires an evaluation of the comparative effects of a range of reasonable alternatives to a project that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any significant environmental effects of the proposed project (CEQA Guidelines Section 15126.6[a]). As part of the alternatives analysis, CEQA also requires evaluation of a “No Project” alternative. The 2013 DEIR/DEIS included analysis of the No Project Alternative in each environmental topic section. Please see Response to Comment 2594-1 and Master Response 4 for a discussion of the range of alternatives evaluated in the EIR/EIS.</p>

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		would actually lessen the environmental impact. Building tunnels, no matter what size, will have a major environmental impact. To comply with CEQA, the project proponents need to offer alternatives that would provide a reliable water supply through a variety of methods that extend beyond building a new conveyance system.	
2594	29	<p>Second, in 2009, the Sacramento-San Joaquin Delta Reform Act became state law and mandated coequal goals for the Sacramento-San Joaquin Delta [footnote 27: CA Water Code, Division 35, Section 85000]. These two goals are to provide a more reliable water supply for California and to protect, restore and enhance the Delta ecosystem [footnote 28: CA Water Code, Division 35, Section 85020]. The Delta Stewardship Council (DSC) was created through the legislation and charged with the mission of developing and implementing a Delta Plan to achieve these goals. Rather than allowing the Delta Stewardship Council to complete its work in developing a Delta Plan, a group of independent stakeholders rushed ahead with the BDCP in an effort to find an easier way to export water from the Delta to the South under the guise of meeting the coequal goals. However, this narrow focus clearly fails to comply with the state law which states:</p> <p>"Providing a more reliable water supply for the state involves implementation of water use efficiency and conservation projects, wastewater reclamation projects, desalination, and new improved infrastructure, including water storage and Delta conveyance facilities." [footnote 29: CA Water Code, Division 35, Section 85004(b)]</p> <p>A conveyance system is only one element to achieving water reliability, and any plan that is put into place should encompass the entire list above. Some may argue that this is just the first step to achieving reliability, but that is the wrong approach. The Delta Reform Act goes on to discuss the need to reduce reliance on the Delta:</p> <p>"The policy of the State of California is to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency. Each region that depends on water from the Delta watershed shall improve its regional self-reliance for water through investment in water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved regional coordination of local and regional water supply efforts" [footnote 30: CA Water Code, Division 35, Section 85021]</p>	For more information regarding the proposed project's compliance with the Delta Reform Act please see Master Response 31. As stated in Response to Comment 2594-5 the proposed project is one component, among many, of the California Water Action Plan which evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. Please see Response to Comment 2594-1 and Master Response 4 for a discussion of the range of alternatives evaluated in the EIR/EIS. Also, please see Master Response 6 for additional details on demand management. Awaiting changes based on DWR review
2595	1	This document does not discuss the results of Sacramento Municipal Utility District's System Impact Study, which indicated that this project could be served by SMUD's proposed new Franklin Bulk Substation. However, a transmission line from the Franklin Substation would be shorter in length than the one identified in the RDEIR/SDEIS extending from a point north of Lambert Road and west of Highway 99 and SMUD assumes that the magnitude of impacts from a shorter line would not exceed those analyzed in the RDEIR/SDEID and Draft EIS/EIR.	Section 21.1.4 in Chapter 21, Energy, has been updated to incorporate the results of SMUD's SIS and the potential to connect to the Franklin Bulk Substation. The analysis is still based on the most conservative estimates for footprint impacts. See Final EIR/EIS Chapter 21.
2595	2	The System Impact Study, prepared for this project, indicates that an area 250 feet by 300 feet would be required for each substation needed to support the project, but the RDEIR/SDEIS identifies a smaller footprint. The larger area should be assumed for purposes of measuring environmental impacts.	The estimate for substation size included in the EIR/EIS provides adequate information as necessary to evaluate potential physical effects. Future changes to the project based on permitting and other approval requirements may necessitate revisions to the EIR/EIS project description and possible revisions to analyses prior to project approval.
2595	3	Appendix 3C Construction Assumptions, Table 3C-1 SMUD's 69kV poles are typically spaced 250 to 350 feet apart, not 450 feet as indicated on	Project plans have not advanced yet to the point where engineering and design work are complete. Environmental review is typically conducted based on less complete plans, because complete engineering and design work is not required for impact assessment, and most project proponents are reluctant to invest in complete engineering and design work before they know that their projects have received the

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		page 3C-15	entitlements and permits needed to proceed towards construction. Please see Master Response 2 for further information regarding the level of detail provided in the EIR/EIS Analysis. The use of a 450 foot assumption was utilized for purposes of the analysis at this stage, but are not anticipated to create any new impacts if during refinement of the project details, poles are spaced 250 to 350 feet apart.
2595	4	Chapter 25, Public Health, Impact PH-4 As mentioned in our comment letter on the DEIS/EIR, Sacramento Municipal Utility District will abide by the California Public Utilities Commission's (CPUC) seven interim measures that address EMF from its November 1993 decision which was affirmed on January 27, 2005. The "CPUC EMF Design Guidelines for Electrical Facilities" document referenced on page 25-73, lines 13-14, of the DEIS/EIR does not, to SMUD's knowledge, exist..	The "CPUC EMF Design Guidelines for Electrical Facilities" document referenced in the DEIS/EIR is available on the CPUC website, please see http://www.cpuc.ca.gov/environment/emf/actions.htm - Seven Interim Measures. This document is consistent with CPUC decision D93.11.013 adopted by the Commission in November 1993, and reaffirmed in 2005. This document will also be available as part of the administrative record of the BDCP/California WaterFix FEIR/FEISEIR/EIS documentation.
2595	5	The California's Public Utility Commission interim measures state that approximately four percent of the project cost to be used for electrical magnetic frequency (EMF) mitigation. Shading by placing trees or other physical barriers along the transmission right-of-way or increasing the distance between the source of the EMF and receptor by a higher tower or wider right-of-way (Page 25-72, lines 40-43) would be very expensive, would quickly exceed this four percent allocation, and DWR should consider whether the cost would make such measures infeasible.	Costs relating to the location and design of all conveyance facility features, including transmission lines, have been estimated. The proposed project, Alternative 4A which is the new preferred alternative, is estimated to cost significantly less relative to the former preferred alternative, Alternative 4. The difference in cost is largely due to the reduced level of restoration specifically funded by the project, as well as other Conservation Measures that are not included under Alternative 4A. As such, the total estimated cost for Alternative 4A is \$14.9 billion in undiscounted 2014 dollars. The estimated cost to implement the former preferred alternative is \$24.7 billion in undiscounted 2012 dollars. EMF mitigation and associated costs will be considered as part of final design. For additional information on the cost of the proposed project BDCP, please see Master Response 5.
2595	6	Chapter 3, Description of Alternatives Page 3-58, line 8, discusses the use of a dipped cross arm configuration that could be used to discourage raptor perching. Sacramento Municipal Utility District does not typically or currently use this configuration, but would be willing to work with DWR to find a solution that addresses this concern.	Please see Master Response 4 for discussion of the development of the project alternatives. For more information regarding Swainson's hawk and other biological resources please see Master Response 17. DWR welcomes SMUD's participation in addressing this concern.
2595	7	Phase Separation clarification: Page 3-58, lines 11-13 state that for 69kV lines, there would be 60 inches between the conductor and pole face. Please confirm whether this separation would be the result of materials placed on the conductors at each pole to create 60 inches of separation between perching opportunities and exposed wires, or whether the wires themselves would be constructed 60 inches apart. Would this standard also apply to distribution lines constructed or relocated for this project?	The transmission line portion of the project has not been finalized. This level of detail will be determined in the final design phase. However, DWR will work with the electrical service provider as well as with USFWS to ensure that the design of the transmission lines will meet all avian safety requirements.
2595	8	Please identify the party responsible for identifying areas of raptor concern as discussed on page 3-58, lines 12 and 13. Will DWR or the local utility designate those areas?	As lead agency, DWR is responsible. As discussed in Appendix 3B of the Final EIR/ EIS under AMM30, the alignment of proposed transmission lines will be designed to avoid sensitive terrestrial and aquatic habitats when siting poles and towers, to the maximum extent feasible. Lines will be co-located where feasible, when such co-location would minimize effects on greater sandhill cranes and other sensitive resources. In cases where this is not feasible, the project proponents will ensure that impacts are minimized to the greatest degree feasible, and disturbed areas will be returned as near as reasonably and practically feasible to preconstruction conditions, by reestablishing surface conditions through carefully grading, reconstructing features such as irrigation and drainage facilities, and replanting vegetation and crops and/or compensating farmers for crops losses.
2595	9	Material coating on monopole and lattice structures (page 3-58, lines 21-23): Sacramento Municipal Utilities District typically uses hot-dip galvanized steel that is dulled to reduce reflectivity as material for its poles. Please describe the material that would be used (both	This level of detail will be determined in the final design phase. If SMUD is the selected electrical service provider, the project intends to comply with SMUD's regular

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		type and color) that would address reflectivity and visibility.	practice and procedure regarding material coating.
2595	10	<p>Avoidance and Minimization Measure 20, Greater Sandhill Crane.</p> <p>Similar to Comment 1c, please confirm that DWR will identify the bird strike risk zones and greater sandhill crane winter use areas.</p> <p>Sacramento Municipal Utility District is open to exploring the feasibility of undergrounding existing lines in high bird strike zones, but removing or relocating lines may be infeasible due to our obligation to provide power to our existing customers. SMUD has several concerns associated with construction and operation of underground transmission and sub-transmission lines, including but not limited to: costs; increased environmental impacts associated with constructing the lines (i.e., the physical impacts from a trench exceed the impacts associated with installing poles); increased environmental impacts associated with maintenance of the lines; and potentially feasibility given the high water table, soil type, and seismicity. The Draft EIS/EIR discusses some of these concerns on pages 3-59 through 3-61.</p> <p>SMUD is willing to install and maintain flight diverters on all new permanent lines and existing lines in the highest risk zones at DWR's cost. SMUD would like to be kept apprised of discussions and plans to install bird flight diverters on electrical lines or transmission and distribution line construction design options as well any other issues related to mitigating electrical facility construction and wildlife and power line interactions.</p>	<p>Please see Master Response 17, Biological Resources for more information regarding proposed sandhill crane habitat avoidance and minimization measures. DWR welcomes SMUD's participation in addressing this concern.</p>
2595	11	<p>Chapter 13, Land Use</p> <p>Impacts associated with utility easements and existing infrastructure are not described in the Land Use discussion and could result in additional incompatibilities. Sacramento Municipal Utility District recognizes that there is some discussion of this impact in the Public Services and Utilities Section, starting on Page 20-17. Please ensure these issues are adequately addressed in the Final EIR/EIS.</p>	<p>Chapter 20, Public Services and Utilities of the Final EIR/EIS fully addresses impacts to utilities in Impact UT-6 which addresses potential conveyance facilities effects on existing electric transmission lines and natural gas pipelines, among other possible utilities. This analysis indicates that 12 transmission lines and 6 natural gas pipelines could be affected by construction. Three SMUD transmission lines are identified as being potentially affected by Alternative 4A, the preferred CEQA and NEPA. These potential effects would be reduced by implementing Mitigation Measures.</p> <p>UT-6a, b, and c. which requires verification of utility locations in all construction areas, relocation of utilities to minimize effects on operational reliability and avoidance of impacts on public health and safety. Consultation with utility providers will occur to avoid utility effects from construction. This analysis is sufficient for the purposes of CEQA and NEPA. Additional analysis in the Chapter 13, Land Use, is not needed.</p>
2595	12	<p>Chapter 17, Aesthetics and Visual Resources</p> <p>The mitigation for visual impacts included potentially undergrounding transmission lines in areas where significant visual impacts would occur. Sacramento Municipal Utility District rarely installs transmission lines underground, as described above in section 2b, due to costs and additional construction and operational environmental impacts, but is willing to work with DWR to address this concern. The BDCP Mitigation Monitoring Plan should state that the project applicant is responsible for the funding of the associated aesthetic mitigation measures.</p>	<p>Implementation of mitigation measures for Alternative 4A, the new preferred alternative, is the responsibility of DWR. Please refer to the Mitigation Monitoring and Reporting Program for the responsible parties for specific mitigation measures, environmental commitments, and Avoidance and Minimization Measures. See also Master Response 22.</p>
2595	13	<p>Chapter 20, Public Services and Utilities</p> <p>Sacramento Municipal Utility District has existing distribution lines throughout the project area including both the water conveyance system and Conservation Zone 4 that serve existing customers. Construction and operation of the water conveyance system may</p>	<p>See response to comment 2595-11. Under Alternatives 1A through 8, electrical power to operate the new north Delta pumping plant facilities would be delivered through 230 kV transmission lines that would interconnect with a local utility at a new or existing utility substation depending on the conveyance alignment. The alignment of this transmission line and its interconnection point would be based on the selection of a power provider for the project following selection of a conveyance alignment. This selection</p>

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		require relocation of SMUD facilities as described in Impact UT-6 and UT-7, respectively. DWR would be responsible for obtaining any easements and resolving any environmental issues.	is ongoing and the alignment of the transmission lines will be finalized at a later date. Details of the alignment of the transmission line and interconnection will be discussed with the selected power provider.
2595	14	Chapter 22, Air Quality Sacramento Municipal Utility District may not have the equipment required to comply with the environmental commitments that DWR has proposed for its portion of the project, but is willing to work with DWR to reduce generation of criteria pollutants resulting from project construction.	The Construction Equipment Exhaust Reduction Plan includes a performance standard of model year 2013 engines for offroad equipment (greater than 50 break-horsepower). The performance standard applies to all construction sites and activities, rather than only at specific features (e.g., intakes). The mitigation plan provides flexibility in that the performance standard (average of model year 2013 engines) may be achieved through a variety of different control strategies, including Tier 3 or 4 equipment, engine electrification, or diesel particulate filters.
2595	15	Chapter 23, Noise Sacramento Municipal Utility District is willing to work with DWR to ensure that the proposed noise cancelling and vibration reducing mitigation measures are indeed feasible.	The comment about SMUD's willingness to work with DWR on feasible mitigation measures is noted.
2595	16	Chapter 24, Hazards and Hazardous Materials Please ensure that Sacramento Municipal Utility District will be included in the preparation of all plans for this project with which it will be required to comply, including but not limited to the storm water pollution prevention plans, hazardous materials management plans, spill prevention, containment, and countermeasure plans, and a barge operations plan stated along with HAZ-1a and HAZ -1b and TRANS-1a.	As necessary, Sacramento Municipal Utility District will be included in the preparation of plans for which the proposed project is required to comply.
2595	17	The RDEIR/SDEIS as it is currently written appears, on its face, to be sufficient for Sacramento Municipal Utility District to use as the CEQA document addressing construction of any electrical infrastructure facilities necessary to serve the BDCP project. While the details of electrical infrastructure SMUD could potentially build to serve the project have not yet been determined, the RDEIR/SDEIS and the Draft EIS/EIR appear to have captured a "worse-case scenario" for the resulting environmental impacts.	The commenter's determination of sufficiency is appreciated.
2595	18	Sacramento Municipal Utility District would like to continue to be kept apprised of the planning, development, and completion of this project. We aim to be partners in the efficient and sustainable delivery of the proposed project. Please ensure that the information included in this response is conveyed to the project planners and the appropriate project proponents.	The official public review process for the Draft BDCP and EIR/EIS and the RDEIR/SDEIS provided an opportunity for formal public comment on the proposed project and project alternatives. Public and agency comments on the public draft have led to further refinement of the proposed project, as evidenced in the RDEIR/SDEIS. To review responses to comments submitted by the Sacramento Municipal Utility District during the 2013 or 2015 comment periods, please refer to the index of commenter's to find the appropriate letter number(s).
2596	1	Thank you for the opportunity to comment on the Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (RDEIR/SDEIS). There are several significant changes to the WaterFix, most notably the change from a Section 10 to Section 7 permit, and the addition of 3 new alternatives with a different regulatory approach. The change in regulatory approach has a substantial impact	See responses to comments 2596-2 through 2596-13.

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		on the project's economic viability, and the new alternatives put forward are completely unresponsive to repeated requests made by numerous independent experts and various stakeholders for years. Thus, these comments are focused on critical problems with the revisions and response to comments in the RDEIR/SDEIS.	
2596	2	Specifically, these comments focus on two critical structural errors in the description of the project and its alternatives: 1) use of a project description that is known to be economically unviable due to its extremely low and highly uncertain water yields, 2) the exclusion of obvious, common-sense alternatives. The project description and the alternatives are the basis for the voluminous technical analysis that makes up the bulk of the RDEIR/SDEIS. The inaccurate description of project water yields and alternatives appear to be intentional actions to hide negative environmental and social impacts of the proposed project. I will leave it to legal experts to argue whether these actions are unlawful, but it is clear that the inaccurate project description and omission of alternatives has resulted in an RDEIR/SDEIS that is severely biased to support the proposed tunnels.	<p>The Federal and State Lead Agencies have done their best to prepare an EIR/EIS for the proposed project that is as fair, objective, and complete as possible. The Lead Agencies are following the appropriate legal process and are complying with CEQA and NEPA in preparing the EIR/EIS for the proposed project. These agencies readily acknowledge, however, that the document addresses a number of topics for which some scientific uncertainty exists. Such uncertainty can give rise to differing opinions as to what conclusions may be reached.</p> <p>With regard to alternatives, for example, the broad range of alternatives included in the EIR/EIS reflects a commonly used type of "bookend" analysis, referring to a range of decision-making options (alternatives) consisting of a continuum of choices. Under the "bookend" approach utilized by the Lead Agencies for the operational alternatives, the EIR/EIS evaluated alternatives that ranged from higher export deliveries at one end, and reduced exports and higher outflows to protect fish species at the lower end. (See Final EIR/EIS Appendix 3A, Section 3A.9 and Chapter 3, Section 3.2.1.4.) By analyzing various alternatives covering the entire spectrum of impacts, the alternatives included in the Draft EIR/EIS, RDEIR/SDEIS and Final EIR/EIS represent an appropriate range of alternatives and will permit the Lead Agencies to make a reasoned choice among alternatives. Thus, the range of alternatives included in the EIR/EIS fully complies with CEQA and NEPA. For additional information regarding the formulation and selection of alternatives for evaluation in the EIR/EIS, please see Master Response 4.</p>
2596	3	Water yields: The financial viability of the tunnels requires much higher water yields than described in the RDEIR/SDEIS. Financially viable water yields would substantially reduce freshwater flows to the Delta and have serious negative effects on water quality and endangered/threatened fish species.	Operations of the conveyance facilities are not expected to result in a substantial decrease or increase in Delta surface water levels. See Appendix 5A, Section C, CALSIM II and DSM2 Modeling Results, EIR/EIS and RDEIR/SDEIS, for more information. The proposed project aims to stabilize water supplies, and exports could only increase under certain circumstances. Water deliveries from the federal and state water projects under a fully-implemented Alternative 4A are projected to be about the same as the average annual amount diverted in the last 20 years. Although the proposed project would not increase the overall volume of Delta water exported, it would make the deliveries more predictable and reliable, while restoring an ecosystem in steep decline.
2596	4	The minimal water yields reported in the RDEIR/SDEIS are far too low for the \$16+ billion capital investment to make economic or financial sense. Compared to the No Action Alternative, the average annual water yield from Alternative 4A (the preferred project) ranges from a loss of 23,000 acre-feet to a best case scenario of 537,000 acre-feet or a midpoint of 257,000 acre-feet. Thus, the water yield from the tunnels is about 15,000 acre-feet per \$1 billion in capital investment. A simple comparison to the most costly alternatives available to urban water agencies and the value of farmland illustrates the economic absurdity of the tunnels if operated in the manner described in the RDEIR/SDEIS.	The issue related to the cost estimate or financial viability as raised by the commenter addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/S. However, to provide additional information, please refer to the discussion of socioeconomic effects of the various alternatives described and assessed in Chapter 16, Socioeconomics, of the 2013 Public Draft EIR/EIS. In addition, a Draft Statewide Economic Impact Report has also been published, which indicates that the proposed project would result in a substantial economic net benefit to the State of California. (http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Draft_BDCP_Statewide_Economic_Impact_Report_8-5-13.sflb.ashx).
2596	5	For farmers, 15,000 acre-feet of annual average water yield for \$1 billion capital investment would be sufficient to keep about 5,000 acres of land in crops. That is a \$200,000 capital cost per acre of crop land, nearly 20 times the current market price of cropland with reliable water in the San Joaquin Valley. The tunnels are more likely to be affordable for urban areas, but their cost per acre foot greatly exceeds the most costly urban alternatives. For example, a desalination plant under construction in San Diego County yields 56,000 acre-feet for a \$1 billion capital investment, over three times the water yield per dollar of investment than the tunnels. A water recycling proposal being considered by Metropolitan	<p>The issue related to the cost estimate or financial viability as raised by the commenter addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/S. As described in response to comment 2596-4, socioeconomic effects of the various alternatives are described and assessed in Chapter 16, Socioeconomics, of the 2013 Public Draft EIR/EIS. A Draft Statewide Economic Impact Report has also been published, which indicates that the proposed project would result in a substantial economic net benefit to the State of California.</p> <p>Please review Master Response 5 regarding the BDCP and funding.</p>

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		Water District would yield 150,000 acre-feet for a \$1 billion capital investment, ten times the water yield per dollar of capital investment. Independent economist Rodney Smith has estimated that the average cost of the tunnels' RDEIR/SDEIS water yield is about \$3,000 per acre-foot when considering operating and financing costs over the project's expected life cycle which is much higher than the cost of alternatives and well above what farmers have been willing to pay for water during the most extreme drought years.	
2596	6	Even the BDCP's own chief economic consultant, Dr. David Sunding, said that the tunnels do not make sense at the water yields in the environmental documents. He was asked by a board member of the Metropolitan Water District if the tunnels penciled out at the 2013 EIR/EIS water yields, and he answered "No." It should be noted that the 2013 EIR/EIS water yields were higher than those in the current RDEIR/SDEIS. It should also be noted that the seismic risk reduction and water quality benefits do not provide economic justification according to their own expert. His 2013 analysis estimated the seismic risk reduction and water quality benefits to water exporters were worth a cumulative \$2.5 billion over the first 50 years of operation, only about 15% of the tunnel's cost. The majority of the economic benefits he estimated from the tunnels were based on the 50-year regulatory protection from being part of the BDCP habitat conservation plan [HCP] -- based on the theory that environmental restrictions on pumping are likely to get stronger in the future -- and the Section 10 ESA permit would protect the water agencies from future water exports that he argued would be much lower than the No Action Alternative in the EIR/EIS. In essence, the value of the tunnels was that the Section 10 HCP would lock in current or somewhat higher level of exports for 50 years. However, the new alternative 4A in the RDEIR/SDEIS is not a Section 10 HCP. Thus, that analysis from a draft August 2013 economic impact report is irrelevant to the new alternative 4A, and no update has been released despite repeated promises.	The commentor is correct regarding the 50-year HCP analysis does not apply to the new preferred Alternative 4A. An updated analysis is underway outside of the EIR/EIS process as it is not required as would be needed for an HCP. Please refer to Master Response 5 and the Final EIR/EIS, Chapter 16 for additional information.
2596	7	Many of the water agencies that would pay for the WaterFix have stated openly (i.e. Kern County Water Agency RDEIR/SDEIS comment letter) that the project is economically infeasible at the EIR/EIS water yields, or expressed serious doubts (Westlands Water District, San Diego County Water Authority). There can be no doubt that after the tunnels are built that there will be enormous financial pressure to export far more water than described in the RDEIR/SDEIS. Given the project's extreme cost and reliance on water rates and water sales to generate revenue for its massive debt service, the project description is incomplete without a detailed financial plan and analysis.	The issue related to the cost estimate or financial viability as raised by the commentor addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/S. As described in response to comment 2596-4, socioeconomic effects of the various alternatives are described and assessed in Chapter 16, Socioeconomics, of the 2013 Public Draft EIR/EIS. A Draft Statewide Economic Impact Report has also been published, which indicates that the proposed project would result in a substantial economic net benefit to the State of California. Please see note that all comments received during the 2013 and 2015 public comment period are included in the FEIR/EIS. Please refer to the table of commenters to locate the letter of interest.
2596	8	The RDEIR/SDEIS claims that it is being responsive to the call for new alternatives by adding three revisions to the North Delta Intakes and isolated tunnel conveyance. In doing so, it continues to ignore the substance of repeated comments from independent scientific experts and stakeholders. Incredibly, the RDEIR/SDEIS even ignores alternatives that are specifically cited as viable tunnel alternatives in current plans and recent reports by the beneficiaries of the tunnels.	Since 2006, the proposed has been developed based on sound science, data gathered from various agencies and experts over many years, input from agencies, stakeholders and independent scientists, and more than 600 public meetings, working group meetings and stakeholder briefings. The alternatives included in the Final EIR/EIS represent a legally adequate reasonable range of alternatives and the scope of the analysis of alternatives fully complies with both CEQA and NEPA. The EIR/EIS includes an extensive evaluation of alternatives considered but not considered in detail in the EIR/EIS, including explanations about why some alternatives were not carried forward to the EIR/EIS. Please refer to Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1. New alternatives presented in the RDEIR/SDEIS include a range of facility improvements and operational scenarios assuming ESA compliance would be under Section 7 versus an HCP/NCCP. As explained in Chapter 1, Introduction and Chapter 3, Description of Alternatives, the change in regulatory approach for Alternatives 4A, 2D and 5A resulted in some important changes related to the goals for the project that has affected the approach to habitat restoration, offsets for conveyance facility effects and operational criteria. Please see also Master

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			Response 4 addressing development of Alternatives.
2596	9	<p>The RDEIR/SDEIS ignores at least four obvious alternatives to the north Delta intakes and tunnels. These four alternatives should be considered separately and combined into comprehensive alternatives. As another possible approach to correcting this deficiency, several of these alternatives could be included in the No Action Alternative, especially when they have been already identified in the plans of various water agencies as actions that they will take or expect if the tunnels are not constructed. While these comments specifically mention the four most obvious alternatives that have been ignored, it should not be considered a complete list.</p> <p>Levee Upgrades: Delta levees are simultaneously a water conveyance system and habitat, and concerns about the performance of the "aging" levee system is the most prominent motivation for the proposed tunnels. Upgrading the existing system is an obvious and common sense alternative that must be considered. In fact, several other comprehensive analyses of the Delta have found levee upgrades are a superior approach to isolated conveyance. Thus, it seems the only reasonable explanation for ignoring levee upgrades in the alternatives is to avoid serious negative findings in the RDEIR/SDEIS. Among the analyses recommending levee upgrades that were produced during the California Water Fix process are the following:</p> <p>a. The Department of Water Resources' 2008 Report to the California Legislature "Risks and Options to Reduce Risks to Fishery and Water Supply Uses of the Sacramento/San Joaquin Delta" included seismic levee upgrades along with isolated conveyance on a short list of three promising strategies for further analysis. [Footnote 1: http://www.water.ca.gov/floodsafe/fessro/levees/drms/docs/AB1200_Report_to_Legislature.pdf] It is indefensible that the same agency that told the California Legislature levee upgrades were on the short list of promising alternatives would then omit it among fifteen BDCP/WaterFix alternatives that were developed shortly thereafter.</p> <p>B. The peer-reviewed Economic Sustainability Plan approved by Delta Protection Commission in early 2012 recommended seismic levee upgrades as a superior approach to isolated conveyance. It found that seismic levee upgrades would enhance water supply reliability, improve riparian habitat, and compared to isolated conveyance it has the added benefits of enhancing public safety [and] protecting critical infrastructure and property.</p> <p>C. Department of Water Resources consultants working on DRMS [Delta Risk Management Strategy] Phase II found that Seismic Levee Upgrade strategy had higher benefits and lower costs than other strategies including a peripheral canal similar to the current WaterFix proposal. The Department of Water Resources then omitted Seismic Levee Upgrades from the options in the DRMS Phase 2 final report and delayed its release by several years. [Footnote 2: http://www.pacific.edu/Documents/school-business/BFC/Econ%20Sustain%20Plan%20PDFs/Appendices/Appendix%20N.pdf] This omission of seismic levee upgrades from the DRMS Phase 2 final scenarios when it performed best in the draft analysis, provides an important precedent that shows DWR has a history of deleting levee upgrade alternatives from their reports if it does not support their politically preferred alternative.</p> <p>Unlike isolated conveyance, which only protects water exports from the risk of earthquakes and floods, seismic levee upgrades would protect water exports, save hundreds of lives, prevent destruction of habitat and water quality degradation, and protect billions of dollars</p>	<p>Please response to comment 2596-8 see Master Response 4 regarding the range of alternatives selected.</p> <p>The specific proposals that were considered but ultimately rejected by the Lead Agencies are discussed in Appendix 3A of the DEIR/EIS, Identification of Water Conveyance Alternatives, Conservation Measure 1. Appendix 3A thoroughly explains why various proposals were not analyzed in the EIR/EIS, including the NRDC Portfolio-Based Proposal, Congressman Garamendi's Water Plan, and other similar concepts that would require actions that are beyond the scope of the proposed project.</p> <p>Please also refer to Master Response 3 for information on the purpose and need for the project. The project proposes to stabilize water supplies, and exports could only increase under certain circumstances. Although the proposed project would not increase the overall volume of Delta water exported, it would make the deliveries more predictable and reliable, while restoring an ecosystem in steep decline.</p> <p>Final EIR/EIS Alternative 9 is based on a through-delta water conveyance concept that includes enhancing levees. Notably, although Alternative 9 would shore up levees at risk of failure following a major earthquake, Alternative 9 does not include a new set of points of diversion in the north Delta, and thus would not provide the operational flexibility, with attendant ecological benefits for Delta smelt and other species, that would exist with alternatives that do include north Delta diversions. Nevertheless, it is recognized that levee maintenance and safety in the Delta is an important issue for the residents of the Delta and for statewide interests. Levees are an important public safety resource and the proposed project would not change levee policy or replace ongoing programs and grant projects aimed at facilitating and supporting levee improvements in or outside the Delta.</p> <p>Additional information can be reviewed in the Final EIR/EIS, Chapter 6, Appendix 6A.</p>

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		in critical infrastructure and private economic assets. Thus, if compared to a seismic levee upgrade strategy, the BDCP/Water Fix preferred project would be found to result in avoidable fatalities [and] environmental and economic damage. Clearly, that serious negative impact for tunnels is not disclosed in the RDEIR/SDEIS because it ignores seismic levee upgrades as an alternative.	
2596	10	<p>The RDEIR/SDEIS ignores at least four obvious alternatives to the north Delta intakes and tunnels. These four alternatives should be considered separately and combined into comprehensive alternatives. As another possible approach to correcting this deficiency, several of these alternatives could be included in the No Action Alternative, especially when they have been already identified in the plans of various water agencies as actions that they will take or expect if the tunnels are not constructed. While these comments specifically mention the four most obvious alternatives that have been ignored, it should not be considered a complete list.</p> <p>Increased Investment in Alternative Water Supplies and Conservation: Many water agencies have stated that they will increase investment in alternative water supplies in the absence of the tunnels. In fact this strategy is in the official resource management plan of some of the agencies, and water agencies have put forward economic analysis that describes much of the benefit of the tunnels as avoiding these obvious alternatives. Thus, it is inexcusable to exclude increased investment in alternative water supplies from the No Action and alternative scenarios.</p>	<p>Please see response to comments 2596-8 for discussion of proposed project alternatives. As it relates specifically to alternative water supply sources, the proposed project is one component, among many, of the California Water Action Plan. The California Water Plan evaluates different combinations of regional and statewide resources management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. Follow the California Water Plan here: http://www.waterplan.water.ca.gov/.</p> <p>By establishing a point of water diversion in the north Delta the proposed project is designed to improve native fish migratory patterns while securing reliable water deliveries. Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1, EIR/EIS, describes the range of conveyance alternatives considered in the development of the EIR/EIS. Appendix 1B, Water Storage, EIR/EIS, describes the potential for additional water storage and Appendix 1C, Demand Management Measures, EIR/EIS, describes conservation, water use efficiency, and other sources of water supply including desalination. While these elements are not proposed as part of the proposed project, the Lead Agencies recognize that they are important tools in managing California's water resources.</p>
2596	11	<p>The RDEIR/SDEIS ignores at least four obvious alternatives to the north Delta intakes and tunnels. These four alternatives should be considered separately and combined into comprehensive alternatives. As another possible approach to correcting this deficiency, several of these alternatives could be included in the No Action Alternative, especially when they have been already identified in the plans of various water agencies as actions that they will take or expect if the tunnels are not constructed. While these comments specifically mention the four most obvious alternatives that have been ignored, it should not be considered a complete list.</p> <p>Increased Freshwater Flows, Reduced Exports: This is the No Action Scenario DWR uses in previous economic analysis, and continues to argue is their expected outcome without the tunnels' use when questioned on costs. But the RDEIR/SDEIS invalidly and inconsistently ignores higher flows in either the No Action scenario or alternative scenarios.</p>	<p>The project proposes to stabilize water supplies, and exports could only increase under certain circumstances. Water deliveries from the federal and state water projects under a fully-implemented Alternative 4A are projected to be about the same to the average annual amount diverted in the last 20 years. Although the proposed project would not increase the overall volume of Delta water exported, it would make the deliveries more predictable and reliable, while restoring an ecosystem in steep decline. Please see response to comment 2596-8 for additional discussion of proposed project alternatives. Please see also responses to comments 2596-3 through 2596-5.</p>
2596	12	<p>The RDEIR/SDEIS ignores at least four obvious alternatives to the north Delta intakes and tunnels. These four alternatives should be considered separately and combined into comprehensive alternatives. As another possible approach to correcting this deficiency, several of these alternatives could be included in the No Action Alternative, especially when they have been already identified in the plans of various water agencies as actions that they will take or expect if the tunnels are not constructed. While these comments specifically mention the four most obvious alternatives that have been ignored, it should not be considered a complete list.</p> <p>Alternative Intake Locations, Especially the West Delta: This is another obvious alternative that is ignored in the analysis. It would reduce environmental and socioeconomic impacts in the Delta and potentially reduce costs to the water agencies by greatly shortening the lengths of the tunnels. While there are advantages to water exporters of being further upstream, there is no valid reason to completely exclude a full analysis of moving the</p>	<p>Please see responses to comments 2596-8 and 2596-11.</p> <p>Please also refer to Master Response 3 for information on the purpose and need for the project. The project proposes to stabilize water supplies, and exports could only increase under certain circumstances. Although the proposed project would not increase the overall volume of Delta water exported, it would make the deliveries more predictable and reliable, while restoring an ecosystem in steep decline.</p>

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		intakes downstream.	
2596	13	<p>The RDEIR/SDEIS should be rejected. A generous review of the RDEIR/SDEIS would reject it for providing an incomplete description of the project without a financial plan to support the low water yield, and incomplete because it fails to consider a full range of viable, practical alternatives. Given the substantial record and nine years of planning, a less generous review would reject the RDEIR/SDEIS for making intentional false statements about expected water yields, the No Action scenario, and available alternatives in order to obtain environmental approvals with a severely biased analysis.</p> <p>The WaterFix is the most costly and controversial water project ever proposed in California's history. I do not have the legal expertise to offer an opinion on whether or not the RDEIR/SDEIS meets minimal legal standards. However, it is clear that the RDEIR/SDEIS falls well short of the unbiased and complete analysis that California and U.S. citizens deserve to support such an important policy decision. If the WaterFix was a strong project, the obvious bias in the framing of the analysis described in this letter would not be necessary. Having closely studied the development of BDCP/WaterFix for the past seven years, there is no doubt in my mind that there are not only superior alternatives, but that building the tunnels will ultimately prove to be more economically and environmentally harmful than doing nothing at all. Fortunately, there is no shortage of positive actions and investments that will be more likely to occur without the Delta tunnels, even if those likely and preferable alternatives are ignored in BDCP/WaterFix RDEIR/SDEIS.</p>	The issue raised by the commenter addresses the merits of the project and does not raise any issues with the environmental analysis provided in the EIR/S. Please see responses to comments 2596-2 through 2596-12 for discussion of project alternatives and adequacy of the analysis contained in the RDEIR/SDEIR.
2597	1	The environmental review for the proposed BDCP/WaterFix lacks definition and analysis of many key aspects of the project, including how the project will be operated and how it will be integrated with the statewide water supply system. The RDEIR/SDEIS indicates that some of these issues will be decided during the consultation process for the project pursuant to Section 7 of the federal Endangered Species Act. We [Contra Costa Water District (CCWD)] understand that modeling has been conducted as part of that consultation process, and we request that those model runs and any future runs that are done for the Section 7 consultation be provided to CCWD and other interested stakeholders. This will ensure that public participation and input on the BDCP/WaterFix are fully informed and meaningful.	The surface water and groundwater model runs used in the preparation of the EIR/EIS and the biological assessment were made available by DWR to all stakeholders who requested those models. Please see Master Response 5 related to Section 7 and Master Response 30 related to modeling.
2597	2	[ATT1: Figure 2-1. Analytical Framework Used to Evaluate Environmental Impacts.]	The RDEIR/SDEIS provided sensitivity analysis for Alternatives 2D, 4A, and 5A. The Final EIR/EIS includes model results specifically for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C. Alternatives 2D, 4A, and 5A only include a small area of wetlands restoration based upon mitigation requirements for construction of the conveyance facilities. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS.
2597	3	The various flaws in the RDEIR/SDEIS point to a critical need to revisit the environmental analysis, to ensure that the project's adverse impacts are thoroughly and accurately disclosed, adequately evaluated, and properly mitigated.	The EIR/EIS presents an analysis and assessment of alternatives that meets the requirements of CEQA and NEPA for impact disclosure and identification of mitigation measures to reduce environmental impacts of the proposed project and alternatives. Please see Master Response 29 related to environmental compliance.
2597	4	The lack of information about the proposed project's initial operating criteria and the range of operational adjustments and adaptive management makes it impossible to determine whether the analysis presented in the RDEIR/SDEIS captures the full range of potential project impacts. The determination of initial operating criteria for Alternative 4A, the new Preferred Alternative, is deferred until the future permitting process when the Lead Agencies will consult with the federal and state fishery agencies (NMFS, USFWS and CDFW)	The lead agencies believe that the BDCP and EIR/EIS are complete in their evaluation of impacts, direct and cumulative, that project description is complete and satisfies the requirements of NEPA, that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies agree that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS. Please see Master Response 29 related to environmental compliance.

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		<p>regarding the project's effects on listed species. RDEIR/SDEIS, Executive Summary at p. ES-21 and Section 4.1.2.2 at p. 4.1-5.</p> <p>As illustrated in Figure 2-1 [ATT1], consultation with the fishery agencies is a necessary step to define criteria for operation of the project. At the same time, a defined set of operating criteria is necessary for a complete and accurate project description, which in turn is necessary for a complete and accurate evaluation of the environmental effects of the project. Further, an open and public review of the operating criteria, and of how these criteria affect the analysis of environmental impacts, is a critical part of the CEQA and NEPA review process.</p> <p>But under DWR's schedule for project review and permitting, the operating criteria will not be determined until after the public review and comment period on the RDEIR/SDEIS has closed. According to DWR's Office of the Chief Counsel, consultation with the fishery agencies is occurring during the CEQA review; the Lead Agencies anticipate the following schedule:</p> <ul style="list-style-type: none"> -Final EIR/EIS completed in May-June 2016. -USFWS and NMFS biological opinions issued in April-June 2016. -CDFW permit issued after DWR completes the CEQA process. <p>(Bogdan, K.M., 2015) [ATT19]</p> <p>This schedule does not allow for adequate analysis of the project's effects, or for a meaningful public review of that analysis, once the operational criteria are determined. The operational criteria are an integral piece of the project description that is necessary for an adequate evaluation of the environmental impacts to water supply, surface water, water quality, and aquatic resources. Modifications to the assumed operational criteria will modify the resulting impacts.</p> <p>The Lead Agencies cannot rely on the future permitting process to fill in gaps in their own environmental analysis. The permitting agencies will require conditions and mitigation consistent with their statutory responsibilities, but these agencies will not consider the potentially significant impacts caused by these permit conditions and mitigation on environmental resources that are outside their regulatory purview. Thus, the fisheries permitting process has a much narrower focus than the Lead Agencies' obligations under NEPA and CEQA, which require a complete analysis of all of the project's impacts on the environment.</p> <p>As a result, the environmental analysis in the RDEIR/SDEIS must be revised to define the full range of possible operating criteria that may result from the permit process in order to bracket the full range of potential project impacts, or alternatively, this environmental analysis must be revised once the operational criteria have been determined. And in either case, the revised analysis must be recirculated for public review and comment.</p>	<p>Please see Master Response 5 and Master Response 28 related to operational criteria.</p> <p>For the Proposed Action, the USFWS and NMFS will conduct an internal ESA section 7 consultation prior to issuance of an Section 10(a) (1) (B) permit for the Proposed Action. These federal agencies will coordinate the ESA consultation process and other environmental review processes, such as the National Environmental Policy Act (NEPA), consistent with federal regulations. In addition, the USFWS and NMFS will consult with the Reclamation to complete biological opinions or a joint biological opinion prior to federal action to carry out the proposed project. Please see Master Response 29 related to environmental compliance.</p> <p>For more information regarding adaptive management please see Master Responses 2, 5, 24, and 33.</p>
2597	5	<p>The RDEIR/SDEIS defers the determination of the source of water to meet proposed flow criteria for the new Preferred Alternative, Alternative 4A. As discussed in CCWD [Contra Costa Water District]'s July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS, failure to disclose the source of the water omits an important element of the project description</p>	<p>Please see Master Response 5 related to the BDCP/CA WaterFix, Master Response 28 related to operational criteria, and Master Response 29 related to environmental compliance.</p>

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		<p>and results in an inadequate environmental analysis. The RDEIR/SDEIS suffers from the same deficiencies described in Section 1.1.5 of CCWD’s July 25, 2014 comment letter. Further, the RDEIR/SDEIS compounds the problem by stating that if sufficient water transfers from willing sellers cannot be identified to meet the spring Delta outflow criteria, "the spring outflow criteria will be accomplished through operations of the SWP and CVP to the extent an obligation is imposed on either the SWP or CVP under federal or applicable state law." RDEIR/SDEIS, Section 4.1.2.2 at p. 4.1-6. This implies that a key element of the project description is dependent on yet-to-be-determined legal obligations. The end result is that the RDEIR/SDEIS fails to present the full range of impacts that may result from the future determination of this key project element.</p> <p>The RDEIR/SDEIS must be revised to provide a complete and accurate project description, and to provide a full and adequate impact analysis based on that project description, so that decision-makers and the public can understand the true extent of the project’s potential adverse effects on water quality, water supply and other environmental resources.</p>	
2597	6	<p>The description of the revised Alternative 4 and new Alternative 4A includes requirements for positive net flows in Old and Middle Rivers at times when the Head of Old River Barrier (HORB) is closed, although positive net flows are not physically possible when the barrier is closed. The hydrodynamic and water quality modeling, which is based upon numerical formulations of real-world physical processes, thus cannot match the unrealistic project description. As discussed in Section 5.3 below, this inconsistency results in an inadequate and inconsistent project description and an insufficient evaluation of the project’s water quality impacts.</p> <p>Old River and Middle River are natural distributaries of the San Joaquin River. Figure 3-1 [ATT2] shows the head of Old River where Old River branches off from the San Joaquin River near Lathrop in the south Delta. Downstream of the head of Old River, Middle River branches off from Old River. Water entering the Delta via the San Joaquin River (orange arrows on Figure 3-1) would naturally split at the head of Old River junction, feeding a northerly flow into Old and Middle Rivers; this is the only source of northerly net flow in Old and Middle Rivers (OMR). Net southerly flow in Old and Middle Rivers is caused by water diversions at intakes located south of the flow gages on Old and Middle Rivers. The CVP and SWP pumping plants in the south Delta (Jones and Banks, respectively) are the dominant cause of net southerly flow. Northerly net flow is positive OMR, while southerly net flow is negative OMR.</p> <p>The project description in the RDEIR/SDEIS indicates that the HORB will be closed from the start of the San Joaquin River salmon migration in January (assumed to be January 1 in the modeling) through June 15 except for real time operational (RTO) decisions for flooding, water stage, and water quality concerns. RDEIR/SDEIS, Section 4.1.2.2 at p. 4-1-13. Of these potential RTO modifications, only flooding concerns are quantified in the RDEIR/SDEIS; to alleviate the flooding concerns, the HORB will be opened when San Joaquin River flow as measured at Vernalis is greater than 10,000 cfs [cubic feet per second]. RDEIR/SDEIS, Section 4.3.7 at p. 4.3.7-180; see also 2013 BDCP Draft EIR/EIS, Chapter 3 at pp. 3-203 and 3-205.</p> <p>During this same time period each year from January to June, positive OMR is required in each month as follows:</p>	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The model results indicate that salinity would increase in summer months in the Sacramento River at Collinsville under the operations of the entirety of the Alternative 4A as compared to the No Action Alternative. Alternative 4A includes operations of a permanently-installed Head of Old River Barrier. The comparative salinity results between Alternative 4A and the No Action Alternative and the Existing Conditions are generally similar or lower than the results presented in the RDEIR/SDEIS. Please see Master Response 4 related to alternatives development, Master Response 14 related to water quality, and Master Response 5 related to BDCP/CA WaterFix.</p>

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		<p>-January - Wet* years</p> <p>-February - Wet* years</p> <p>-March - Wet* and Above Normal* years</p> <p>-April - when Vernalis flow > 5,666 cfs</p> <p>-May - when Vernalis flow > 5,666 cfs</p> <p>-June - when Vernalis flow > 3,500 cfs</p> <p>* Wet and Above Normal water year types are defined by the Sacramento River 40-30-30 index.</p> <p>RDEIR/SDEIS, Section 4.1.2.2 at p. 4.1-8.</p> <p>Table 3-1 [ATT3] indicates the percent of time that positive OMR is required, the percent of time that the HORB may be closed without flood concerns (i.e., Vernalis flow is less than 10,000 cfs), and the combined occurrence of these two conditions for Alternative 4A. OMR is required to be positive when the HORB may be closed without flood concerns in a significant portion of the 82-year simulation period in all months from January through June.</p> <p>Overall, positive OMR is required when the HORB may be closed for at least one month between January and June in 67% of the years that were analyzed. However, as explained below, it is physically impossible for OMR to be positive with the HORB closed. Closure of the HORB blocks flow in the San Joaquin River from entering Old River which, as discussed above, is the only source of positive OMR; closure of the HORB thus prevents OMR from being positive. As a result, the project description for OMR flow requirements is internally inconsistent with the project description for HORB operation in two-thirds of the analysis period. This inconsistency is demonstrated by reviewing measurements of OMR flows at times when a barrier has been installed at the head of Old River in the past. Historically, a temporary barrier of rocks at the head of Old River has been constructed in the fall or spring. [Footnote 1: Revised Alternative 4 and new Alternatives 4A and 2D propose to replace this temporary rock barrier with a permanent operable barrier that will be opened and closed as indicated in the project description. Where the temporary barrier is typically installed for no more than 3 months a year (2 months in the fall and 1 month in the spring), the permanent barriers is proposed to be closed for over 7 months of the year (2 months in the fall and 5 ½ months in the winter and spring), which would dramatically alter Delta water quality.] Review of OMR flows that were measured when the HORB was installed confirms that OMR is never positive with the HORB installed (Figure 3-2 [ATT4]).</p> <p>Pumping at the existing CVP and SWP export facilities in the south Delta (Jones and Banks, respectively) contributes to negative OMR -- the greater the total pumping at the existing south Delta facilities, the more negative OMR (Figure 3-2). Limiting pumping at the south Delta facilities limits the negative OMR but cannot create positive OMR. Positive OMR can only occur with inflow from the San Joaquin River when the HORB is not installed. Since the project description for OMR flow requirements is internally inconsistent with the project description for HORB operation, the modeling cannot be configured to meet both requirements. Instead, the RDEIR/SDEIS modeling assumes that the HORB would be 50%</p>	

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		open at times when the project description indicates that the HORB would be closed. RDEIR/SDEIS, Section 4.1.2.2, Table 4.1-2, at p. 4.1-9. This partial opening in the modeling allows water to enter the south Delta through the HORB, which would not be possible if the HORB is closed as described in the project description. This inconsistency results in an underestimation of water quality impacts.	
2597	7	[ATT2: Figure 3-1. Regional map of the south Delta.]	The map attached is not considered a comment.
2597	8	[ATT3: Table 3-1. Frequency of Old and Middle Rivers and Head of Old River Barrier operating criteria for Alternatives 4 and 4A.]	It should be noted that the RDEIR/SDEIS provided sensitivity analysis for Alternatives 2D, 4A, and 5A. The Final EIR/EIS includes model results specifically for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C. Alternatives 2D, 4A, and 5A only include a small area of wetlands restoration based upon mitigation requirements for construction of the conveyance facilities. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS. Please see Master Response 4 related to alternatives development, Master Response 14 related to water quality, and Master Response 5 related to BDCP/CA WaterFix.
2597	9	[ATT4: Figure 3-2. Old and Middler River flow when Head of Old River Barrier is closed.]	Please see Master Response 4 related to alternatives development, Master Response 14 related to water quality, and Master Response 5 related to BDCP/CA WaterFix.
2597	10	<p>The project description lacks an operations plan with information regarding how operation of existing water supply facilities will be modified (i.e., how the facilities will be "reoperated") to integrate the new facilities that are proposed by the BDCP/CWF [California WaterFix] into the water supply system. Consequently, the modeling utilized in the impacts assessment did not include reasonable logic for reoperation of existing facilities, resulting in unrealistic operations and an underestimation of water supply and water quality impacts. The SWP and CVP coordinate operation of their facilities, including operation of reservoirs located upstream of the Delta and operation of the diversion facilities within the Delta that export water to the San Joaquin Valley and southern California. The system is connected by natural waterways such as the Sacramento River and man-made canals such as the Delta-Mendota Canal. Operations in one location can affect operations throughout the system. For example, the amount of water released from the upstream storage reservoirs is inextricably tied to the amount of water pumped out of the Delta at the export facilities.</p> <p>The RDEIR/SDEIS fails to give adequate consideration to the changes to existing facilities operations that would necessarily occur due to implementation of the Preferred Alternative. This creates flaws in the analysis of water supply, water quality, and fisheries impacts. CCWD [Contra Costa Water District]'s July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS provides examples of these flaws (e.g., Sections 1.1.2, 2.3.2.1, and 2.3.2.2). These flaws remain in the RDEIR/SDEIS.</p> <p>Delta outflow in October is typically regulated by the Bay-Delta Water Quality Control Plan, with water released from upstream CVP and SWP reservoirs to meet minimum Delta outflow requirements or salinity standards. There is seldom enough precipitation in the watershed in October for natural Delta outflow to be in excess of these requirements. However, the BDCP modeling indicates that Delta outflow would exceed the amount necessary to meet minimum outflow requirements and salinity standards over 66% of the time in the early long term (ELT) for Alternatives 4/4A [Footnote 2: The RDEIR/SDEIS uses modeling for Alternative 4 under ELT conditions to assess impacts for Alternative 4A for both the H3 and H4 operational scenarios.] H3 and H4 (Figure 3-3 [ATT5]). In comparison,</p>	<p>Changes to SWP and CVP upstream operations assumptions for the action alternatives as compared to the Existing Conditions and the No Action Alternative are presented in Appendix 5A, Section B, CALSIM II and DSM2 Modeling Simulations and Assumptions, of the EIR/EIS. Changes in Delta outflows under the action alternatives as compared to the Existing Conditions and the No Action Alternative are also presented in Appendix 5A. Changes in Delta water quality are presented in Chapter 8. Water Quality, of the EIR/EIS. Changes in aquatic resources conditions upstream of the Delta are presented in Chapter 11, Fish and Aquatic Resources.</p> <p>As shown in Appendix 5A, Section C, of the Final EIR/EIS, the proposed project, Alternative 4A, is consistent with State Water Resources Control Board Decision 1641. As discussed in this comment, the criteria for Sacramento River flows at Rio Vista in October would become more critical with action alternatives that include north Delta intakes. Under the future operations, there would be a balance between operations of Delta Cross Channel closure to minimize effects on upstream reservoir storage and water quality criteria. Operations under Alternative 4A would increase Delta outflow due to Old and Middle River criteria which will improve water quality as compared to the No Action Alternative. It is recognized that assumptions were used for the impact analysis in the EIR/EIS based upon modeling analyses; and that the real-time operations would provide more flexibility than the CALSIM II monthly-model time step. However, the incremental differences that could occur under the No Action Alternative conditions and Alternative 4A would be similar with different CALSIM II model assumptions in the No Action Alternative conditions and Alternative 4A. It should be noted that the Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS.</p> <p>Please see Master Response 4 related to alternative development, Master Response 5 related to BDCP/CA WaterFix, and Master Response 28 related to operational criteria.</p>

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		<p>the No Action Alternative [Footnote 3: The No Action Alternative is used for comparison because it includes the same assumptions for hydrology and water demands, which have a direct effect on Delta outflow, as Alternative 4/4A. In contrast, the CEQA baseline includes different assumptions for hydrology and water demands than the No Action Alternative and Alternative 4/4A.] has excess Delta outflow in October only 2% of the time in the ELT. The dramatic increase in the occurrence of excess flow under Alternatives 4/4A H3 and H4 in the ELT is not as substantial in the late long term (LLT) and is probably the cause for the different impact determinations between the ELT (as analyzed in the RDEIR/SDEIS) and the LLT (as analyzed in the 2013 BDCP Draft EIR/EIS). Although excess October Delta outflow occurs less often in the Alternative 4/4A LLT modeling than in the Alternative 4/4A ELT modeling, the frequency of occurrence in the LLT modeling is also unrealistic.</p> <p>The excess Delta outflow simulated in Alternative 4/4A is due to the lack of a coherent operations plan. In particular, operational requirements for the new project facilities and modified operational criteria for the existing south Delta facilities were specified for the operational model (CalSim II) without recognizing that these new criteria for the proposed BDCP/CWF would upset the operations of the larger water supply system.</p> <p>In this instance, the modeling projects that Water Quality Control Plan requirements for flow in the Sacramento River at Rio Vista would cause releases from upstream reservoirs that cannot be captured at the south Delta facilities and instead become excess Delta outflow. This seldom happens in the No Action Alternative because there are no OMR [Old and Middle Rivers] requirements in October under the No Action Alternative, so that flow released to meet the Rio Vista requirements can be exported at the south Delta facilities. The project descriptions for the revised Alternative 4 and the new Alternative 4A indicate that that the south Delta facilities will be shut down for 14 days in October. The 14-day shut-down requirement is modeled as a requirement for OMR to be greater than -5,000 cfs [cubic feet per second] for the entire month of October -- even though there are no OMR requirements in the project description for October. When OMR is regulated, pumping at the CVP and SWP south Delta export facilities is limited. Since the modeling assumes OMR is regulated for the entire month of October, the water released from reservoirs to meet Rio Vista flow requirements cannot be fully captured at the south Delta facilities.</p> <p>In reality, the south Delta facilities would probably be able to capture the additional flows for the 17 days during which export pumping is permitted. For the remaining 14 days when the south Delta export facilities are shut down, the CVP and SWP, rather than increasing reservoir releases, are far more likely to limit the amount of reservoir releases that flow out to the San Francisco Bay by closing the Delta Cross Channel to meet Sacramento River flow requirements at Rio Vista flow requirements without creating excess Delta outflow. When the Delta Cross Channel gates are open, a portion of the Sacramento River flow enters the central Delta, reducing flow in the Sacramento River downstream of the Delta Cross Channel (Figure 3-4 [ATT6]). To meet flow requirements in the Sacramento River at Rio Vista, DWR and Reclamation have two options: (1) increase reservoir releases to increase the Sacramento River flow entering the Delta, or (2) close the Delta Cross Channel gates to increase the amount of flow that reaches Rio Vista without increasing Sacramento River inflow.</p> <p>The operational strategy to close the Delta Cross Channel to meet Rio Vista flows without unnecessary reservoir releases has been implemented recently in November of 2009 and in October of 2013 and 2014 (Reclamation, 2015 [ATT18]). This is the realistic operational</p>	

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		<p>strategy that should have been used in the modeling. Failure to model this operational strategy, when it has in fact been implemented repeatedly in recent years, biases the salinity results in the water quality impacts analysis, showing reduced salinity with the project. In reality, when the Rio Vista flow requirements are met by closing the Delta Cross Channel instead of by releasing flow from upstream reservoirs, interior Delta salinity will increase with the project.</p> <p>The unrealistic excess Delta outflow in October freshens the modeled interior Delta salinity for many months. This is illustrated in Figure 3-5 [ATT7], which shows that excess Delta outflow in October freshens the water at CCWD's Old River Intake in October and that the freshening effect is maintained through December (blue bars in Figure 3-5). In contrast, during years without excess Delta outflow in October, Alternative 4/4A H3 increases the salinity at CCWD's Old River Intake in October, November, and December (orange bars in Figure 3-5). Further, averaging salinity over all years (green bars in Figure 3-5) underestimates the impacts that would occur.</p> <p>This discussion serves to show that the unrealistic assumption of excess Delta outflow results in a significant underestimation of salinity impacts as a result of the proposed project. Conversely, implementing and modeling an operations plan that corrects this unrealistic excess Delta outflow assumption would reveal greater salinity impacts due to the project.</p>	
2597	11	[ATT5: Figure 3-3. Frequency of Excess Outflow in October.]	It should be noted that the RDEIR/SDEIS provided sensitivity analysis for Alternatives 2D, 4A, and 5A. The Final EIR/EIS includes model results specifically for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C. Alternatives 2D, 4A, and 5A only include a small area of wetlands restoration based upon mitigation requirements for construction of the conveyance facilities. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS. Please see Master Response 28 related to operational criteria, Master Response 14 related to water quality, and Master Response 5 related to BDCP/CA WaterFix.
2597	12	[ATT6: Figure 3-4. Closure of the Delta Cross Channel maintains higher flow in the Sacramento River.]	Please see Master Response 28 related to operational criteria, Master Response 14 related to water quality, and Master Response 5 related to BDCP/CA WaterFix.
2597	13	[ATT7: Figure 3-5. Excess Delta Outflow in the month of October during the Early Long Term biases the modeling results for multiple months.]	It should be noted that the RDEIR/SDEIS provided sensitivity analysis for Alternatives 2D, 4A, and 5A. The Final EIR/EIS includes model results specifically for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C. Alternatives 2D, 4A, and 5A only include a small area of wetlands restoration based upon mitigation requirements for construction of the conveyance facilities. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS. Please see Master Response 28 related to operational criteria, Master Response 14 related to water quality, and Master Response 5 related to BDCP/CA WaterFix.
2597	14	The environmental analysis for the new alternatives (Alternatives 4A, 2D and 5A) does not comply with the requirements under CEQA and NEPA to assess both short-term and long-term impacts. More specifically, the analysis for the new alternatives contains an evaluation of short-term effects projected to occur in the year 2025, but does not adequately evaluate the environmental impacts that could occur over the long term. The CEQA Guidelines make clear that the direct and indirect environmental effects of a proposed project "shall be clearly identified and described, giving due consideration to both	<p>The three new sub-alternatives (4A, 2D, and 5A) evaluated in the RDEIR/SDEIS and Final EIR/EIS embody a different implementation strategy that would not involve a 50-year HCP/NCCP approved under ESA Section 10 and the NCCPA, but rather would achieve incidental take authorization under ESA Section 7 and California Endangered Species Act (CESA) Section 2081(b) assuming a shorter project implementation period. Please see Master Response 4 related to alternatives development and Master Response 28 related to operational criteria.</p> <p>Alternative 4 is evaluated at the Late-Long-Term (LLT) timeframe because it would include 50-year incidental</p>

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		<p>the short-term and long-term effects." CEQA Guidelines [Section] 15126.2(a); see also <i>Neighbors for Smart Rail v. Exposition Metro Line Construction Authority</i>, 57 Cal. 4th 439, 454 (2013). The NEPA regulations echo this requirement, stating that, in assessing the significance of an impact, "[b]oth short- and long-term effects are relevant." 40 C.F.R. [Section] 1508.27(a). Thus, under both statutes, the environmental analysis must assess short-term and long-term impacts.</p> <p>As CCWD [Contra Costa Water District] noted in its July 25, 2014 comments, the analysis in the 2013 BDCP Draft EIR/EIS of the initial set of alternatives for the proposed project violates these requirements by limiting the impact analysis to the year 2060, thus failing to evaluate the impacts over the short and medium term. The analysis in the RDEIR/SDEIS of the new alternatives (Alternatives 2D, 4A and 5A) creates the opposite problem, by failing to present an adequate evaluation of impacts beyond the year 2025. The analysis for the new alternatives states that the "early long term" -- which is based on conditions projected to occur in the year 2025 -- is used for evaluating the impacts of the new alternatives. RDEIR/SDEIS, Section 4.1.6 at p. 4.1-42; see also id., Section 4.1.2.1 at p. 4.1-5 (describing Alternative 4A and noting that operations are evaluated at the early long term, "which is associated with conditions around 2025"); Section 4.1.3.1 at p. 4.1-22 (Alternative 2D); Section 4.1.4.1 at p. 4.1-30 (Alternative 5A). The document goes on to explain that "because the project would continue indefinitely, the analysis qualitatively examines impacts at the Late Long-Term timeframe for Alternatives 4A, 2D, and 5A, but does not make a CEQA or NEPA conclusion. . . ." Id, Section 4.1.6 at p. 4.1-42.</p> <p>In other words, for impacts beyond the year 2025 -- which will be less than 10 years after project approval, and at around the same time as the onset of most of the project's operational impacts [Footnote 4: According to the RDEIR/SDEIS, construction is anticipated to last about a decade and operation of the project could begin as early as 11 years after permits are issued. RDEIR/SDEIS, Appendix A, Revised Chapter 3 at p. 3-6 (Alternative 4) and Executive Summary at p. ES-17 (Alternative 4A - stating that all aspects of construction would be identical to Alternative 4).] -- the analysis does not fulfill its critical role as an informational document, because it does not quantify the impacts and does not make a conclusion on whether the impacts are significant or not. And without a significance conclusion, it cannot be ascertained whether mitigation should be evaluated for the long-term effects and, if so, what mitigation measures would be feasible. This is a critical omission for a project of this magnitude, which will have a wide array of lasting impacts on water quality, water supply, surface and ground water, and aquatic resources.</p> <p>The environmental analysis should be revised to present an evaluation of both short-term and long-term effects, as required under CEQA and NEPA. This analysis should make findings on whether the long-term effects are considered to be significant, so that the decision-makers and the public are fully apprised of what the project's effects will be and whether measures are needed to mitigate those effects over the full life of project operations, not just the first few years.</p>	<p>take permits. The other alternatives evaluated in the RDEIR/SDEIS, Alternative 4A, 2D, and 5A, are evaluated at the Early Long-Term (ELT) timeframe because the project implementation period is anticipated to be shorter. For NEPA impact assessment purposes, Alternatives 4A, 2D, and 5A are compared to the No Action Alternative for the Early Long-Term timeframe. Where impacts differ at the Late Long-Term (LLT) period, discussions of these effects were included in the analysis. For CEQA impact assessment purposes, they are compared against Existing Conditions, as generally described in the EIR/EIS.</p>
2597	15	<p>The analysis in the RDEIR/SDEIS for the new alternatives recognizes that the "early long term" scenario used to evaluate the impacts of the new alternatives includes the effects of climate change and sea level rise projected to occur in the year 2025. In other words, for purposes of the CEQA evaluation, the environmental impacts of the alternatives in 2025 -- plus the impacts of climate change in that year -- are compared to the 2009 baseline conditions. RDEIR/SDEIS, Section 4.1.6 at p. 4.1-42; and Section 4.2 at p. 4.2-1. As the</p>	<p>The EIR/EIS compares conditions under all action alternatives to the Existing Conditions, including both the effects of the no action alternative and the effects of climate change, sea level rise, and increased water demand in the Sacramento Valley (primarily the American River watershed), as described in Chapter 5 of the EIR/EIS. Please see Master Response 4 related to alternatives development and Master Response 14 related to water quality.</p> <p>The proposed conveyance facilities under each action alternative would not be operational until 2025, at</p>

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		<p>analysis recognizes, "[t]he effects of climate change and sea level rise will foreseeably have some effect on the Delta environment during the ELT time period." <i>Id.</i>, Section 4.2 at p. 4.2-1.</p> <p>Thus, under the CEQA approach used to evaluate the new alternatives, project impacts are lumped together with the future effects of climate change. The analysis concedes this point, stating on numerous occasions: "Because the action alternative modeling does not partition the effects of implementation of the alternative from the effects of sea level rise, climate change, and future water demands, the comparison to Existing Conditions may not offer a clear understanding of the impact of the alternative on the environment." See, e.g., RDEIR/SDEIS, Section 4.3.7 at pp. 4.3.7-24, 4.3.7-41, 4.3.7-60, 4.3.7-73, etc. By failing to offer this clear understanding, the impacts that are specifically attributable to the proposed project are obscured.</p> <p>The environmental analysis attempts to address this issue by explaining that the comparison under NEPA between the new alternatives and the 2025 No Action Alternative "is a better approach," on the ground that it isolates the effects of the alternatives from the effects of sea level rise, climate change and future water demands. See <i>id.</i> But according to the environmental analysis, the CEQA conclusions for the new alternatives, like the CEQA conclusions for the initial set of alternatives, are made in comparison to the 2009 existing conditions baseline. As the RDEIR/SDEIS explains: "The same 'Existing Conditions' baseline defined in the [2013 BDCP] Draft EIR/EIS applies to Alternatives 4A, 2D, and 5A, for the purposes of CEQA impact analysis. Therefore, all CEQA conclusions associated with Alternative 4A, 2D, and 5A are made in comparison to the same Existing Conditions baseline applied for all other alternatives." RDEIR/SDEIS, Section 4.1.6 at p. 4.1-42. Thus, the CEQA analysis admittedly is unclear in depicting the impacts of the new alternatives. This problem in the CEQA analysis cannot be fixed by pointing the reader to the different approach used for the federal NEPA evaluation, which compares project impacts against future no project conditions. As the California Supreme Court explained in the <i>Neighbors for Smart Rail</i> case, the CEQA Guidelines make clear that when the existing conditions baseline is used to determine a project's significant adverse impacts, as is the case here, this baseline "is not the same as the no project alternative, which takes into account future changes in the environment reasonably expected to occur if the project is not approved." 57 Cal. 4th at 454 (Supreme Court's emphasis); see CEQA Guidelines</p> <p>[Section] 15126.6(e)(1) ("The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline. . ."). This confirms that the RDEIR/SDEIS cannot use the no project/no action scenario to cure the defects in its CEQA baseline evaluation. To provide a clear picture of the CEQA analysis and conclusions, the RDEIR/SDEIS needs to be revised to compare the project's impacts against the CEQA baseline, without using future effects that are not attributable to the project to obscure the analysis.</p> <p>The lumping together of project impacts with the future effects of climate change not only obscures what impacts are attributable to the proposed BDCP/California WaterFix, it also obscures the mitigation that should be evaluated to address those impacts. To make matters worse, the project proponents assert that they are not obligated to make any contribution to mitigation that is needed "solely or substantially" to address adverse water quality effects due to sea level rise or changed precipitation patterns attributable to climate</p>	<p>which time, the increased water demands would have occurred in accordance with the published urban water management plans and agricultural water management plans for entities that effect the American River watershed flows. Also, by 2025, climate change and sea level rise would have changed surface water and water supply conditions.</p>

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		change. RDEIR/SDEIS, Appendix A, Revised Appendix 3B at p. 3B-73. Thus, including future climate change effects as part of the project impact analysis allows the project proponents to disavow obligations to mitigate impacts.	
2597	16	[ATT8: Table 5-1. Comparison of Modeling Assumptions vs. Actual Baseline Conditions, Project Description of No Action Alternative and Project Description of New Alternatives.]	It should be noted that the RDEIR/SDEIS provided sensitivity analysis for Alternatives 2D, 4A, and 5A. The Final EIR/EIS includes model results specifically for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C. Alternatives 2D, 4A, and 5A only include a small area of wetlands restoration based upon mitigation requirements for construction of the conveyance facilities. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS. Please see Master Response 1 related to baseline, Master Response 4 related to alternatives development, Master Response 14 related to water quality, and Master Response 30 related to modeling.
2597	17	<p>The CEQA baseline used in the RDEIR/SDEIS omits a current regulatory flow requirement that maintains relatively low salinity in the Delta in the fall of relatively wet years. This requirement is included in the alternatives modeling. Since the impacts of the alternatives are measured under CEQA against the baseline conditions, excluding the salinity benefits from the baseline, while including them in the evaluation of the alternatives, serves to mask the true extent of the project's negative effects on salinity.</p> <p>The 2008 USFWS Biological Opinion (BiOp) specifies that during the months of September, October, and November that follow a relatively wet year [Footnote 5: Specifically, "wet" or "above normal" water years as defined by the Sacramento Valley 40-30-30 index.], operation of the CVP and SWP must be modified to reduce salinity in the western Delta as indicated by the location of the two parts per thousand isohaline (i.e., X2); this action is commonly referred to as "Fall X2." Although the Fall X2 requirement was adopted in 2008, Fall X2 was not modeled as part of the CEQA baseline. By modeling Fall X2 as part of the alternatives but not the baseline, the benefits in water quality that are due to implementation of Fall X2 appear as benefits attributable to the project in the impacts analysis, which underestimates the project's true salinity effects. See Section 2.1.1.2 of CCWD [Contra Costa water District]'s July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS.</p>	Please see Master Response 1 related to baseline, Master Response 4 related to alternatives development, Master Response 14 related to water quality, and Master Response 30 related to modeling.
2597	18	<p>The modeling for the No Action Alternative reveals a problem: this modeling does not match the description in the RDEIR/SDEIS of the No Action Alternative so that the true extent of the project's impacts as measured against the No Action Alternative cannot be determined, affecting both the CEQA and the NEPA analysis. Under NEPA, the No Action Alternative serves as the baseline for measuring the impacts of the project alternatives. Therefore, without accurate modeling of No Action Alternative, the impact assessment for the project alternatives is faulty and unreliable. Under CEQA, the No Action (or No Project) Alternative provides a different -- but no less important -- function, which "is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." CEQA Guidelines [Section] 15126.6(e)(1); see also Neighbors for Smart Rail, 57 Cal. 4th at 454. But if the impacts of the No Action/No Project Alternative are not accurately depicted, then this comparison is not accurate and does not inform the decision-makers as it should. The underlying problem is that the No Action Alternative was substantially reformulated in the 2015 RDEIR/SDEIS, yet the modeling was not updated to reflect this new formulation.</p> <p>The 2008 USFWS Biological Opinion specifies that 8,000 acres of tidal marsh must be</p>	For additional information regarding baseline considerations and the No Action Alternative, please see Master Response 1.

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		<p>restored within 10 years (i.e., by 2018) and the 2009 NMFS Biological Opinion requires floodplain habitat restoration with an initial target of 17,000 to 20,000 acres. Many tidal marsh restoration projects are in the planning stages and DWR and Reclamation are preparing a draft EIR/EIS for the Yolo Bypass Salmonid Habitat Restoration and Fish Passage project to satisfy the floodplain habitat restoration targets.</p> <p>As explained in CCWD [Contra Costa Water District]'s July 25, 2014 comment letter, the 2013 BDCP Draft EIR/EIS improperly excluded these required habitat restoration actions from the No Action Alternative. The RDEIR/SDEIS changes course, specifying that "enhancements to the Yolo Bypass and 8,000 acres of tidal habitat restoration areas would be developed under the No Action Alternative (ELT)." RDEIR/SDEIS, Section 4.2.7 at pp. 4.2-19; see also id., Section 4.1.2.3 at p. 4.1-15; Section 4.1.6 at p. 4.1-42. However, modeling conducted for the ELT [Early Long Term] No Action Alternative assumed no implementation of Yolo Bypass improvements or tidal habitat restoration. Id., Section 4.2.7 at pp. 4.2-18 to 4.2-19. After acknowledging this discrepancy, the RDEIR/SDEIS states: "In general, the significance of this difference is the assessment of bromide, chloride and EC [electrical conductivity] for the No Action Alternative (ELT), relative to Existing Conditions, likely underestimates increases in bromide, EC, and chloride that could occur, particularly in the west Delta." Id., Section 4.2.7 at p. 4.2-19.</p> <p>But there is no evidence presented in the RDEIR/SDEIS to support this conclusion. As discussed in Section 1.2.2 of CCWD's July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS, the effect of habitat restoration on water quality depends on the location, timing, and design of the habitat restoration actions. Without this information, it is not possible to determine if the failure to model the habitat restoration actions required in the USFWS and NMFS Biological Opinions underestimates or overestimates salinity for the No Action Alternative, to what extent salinity levels might differ, and where in the Delta these effects would be realized. With an uncertain baseline, the impacts of the project cannot be ascertained.</p>	
2597	19	<p>Unlike the initial set of alternatives discussed in the 2013 BDCP Draft EIR/EIS, the new alternatives (including Alternative 4A, the new Preferred Alternative) would not serve as habitat conservation plans and do not include a significant habitat restoration component. RDEIR/SDEIS, Executive Summary at p. ES-3. This is a dramatic change in approach for implementing the project and a major impetus for preparing the RDEIR/SDEIS. But despite this significant change in the project, the modeling used to evaluate the impacts of the new alternatives still includes the extensive habitat restoration that is part of the alternatives set forth in the 2013 BDCP Draft EIR/EIS. As discussed below, this has the effect of underestimating the project salinity impacts.</p> <p>The tidal marsh habitat and flood plain enhancements that are required by the 2008 USFWS and 2009 NMFS Biological Opinions -- which the RDEIR/SDEIS describes as being developed under the No Action Alternative [NAA] at ELT [Early Long Term] but does not model as part of the NAA ELT -- are modeled as part of each of the new project alternatives that are analyzed in the RDEIR/SDEIS. Furthermore, even though the new alternatives would no longer serve as a habitat conservation plan, the modeling includes 17,000 acres of tidal marsh in addition to the requirements in the USFWS and NMFS Biological Opinions, for a total of 25,000 acres of tidal marsh. As the environmental analysis explains,</p> <p>"[I]mpact analyses reliant on physical modeling apply results consistent with an 'Early Long Term' timeframe. Based on the assumptions used for the original purposes of these model</p>	For additional information regarding baseline considerations and the No Action Alternative, please see Master Response 1.

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		<p>runs, these results also assume implementation of two elements, Yolo Bypass improvements and 25,000 acres of tidal wetland restoration. These two elements were included in the modeling because they were components of Alternative 4, for which the modeling was originally conducted. These two elements, however, are not proposed as part of Alternatives 4A, 2D, or 5A." RDEIR/SDEIS, Section 4.1.6 at p. 4.1-43.</p> <p>Thus, while Alternative 4A, the new Preferred Alternative, actually includes only 59 acres of tidal wetland restoration (id., Section 4.1.2.1 at p. 4.1-5), the impact assessment is modeled on the assumption that this alternative has more than 400 times this acreage of tidal wetland restoration. As a result of this failure of the modeling to capture the actual habitat restoration components of the new alternatives, the impacts of the alternatives are conflated with the effects of the assumed habitat restoration actions that were developed for the original alternatives in the 2013 BDCP Draft EIR/EIS. Section 2.1.5.1 of CCWD [Contra Costa water District]'s July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS explains how this conflation obscures and underestimates water quality impacts of operation of the proposed water supply facilities.</p> <p>After acknowledging that the Yolo Bypass improvements and tidal restoration are not part of the new project alternatives even though these features were included in the modeling, the RDEIR/SDEIS concludes that the inclusion of these features in the modeling probably overestimates salinity in the west Delta. "The analysis of boron, bromide, chloride, Dissolved organic carbon (DOC), electrical conductivity (EC), and nitrate under Alternative 4A in the ELT is based on modeling conducted for Alternative 4 in the ELT, which assumes implementation of Yolo Bypass Improvements and 25,000 acres of tidal natural communities restoration. As described above, Yolo Bypass Improvements are not a component of Alternative 4A and the amount of tidal habitat restoration (i.e., Environmental Commitment 4) would be significantly less than that represented in the modeling. In general, the significance of this difference is that the assessment of bromide, chloride, and EC for Alternative 4A, relative to Existing Conditions and the No Action Alternative (ELT), likely overestimates increases in bromide, EC, and chloride that could occur, particularly in the west Delta." RDEIR/SDEIS, Section 4.3.4 at p. 4.3.4-1</p> <p>Similar statements are made in the evaluation of water quality impacts for Alternative 2D (id., Section 4.4.4 at p. 4.4.4-1) and Alternative 5A (id., Section 4.5.4 at p. 4.5.3-1). However, there is no evidence presented in the RDEIR/SDEIS to support this conclusion. To the contrary, the analysis in the 2013 BDCP Draft EIR/EIS clearly indicates that the particular configuration of tidal marsh included in the modeling underestimates salinity impacts, since the modeled restoration reduces salinity in the western Delta. For example, Figure 5-1 [ATT9] is a reproduction of a figure from the 2013 BDCP Draft EIR/EIS that shows the incremental change in electrical conductivity (EC) due to the ELT tidal marsh configuration (25,000 acres) that was assumed in the models; the locations in the west Delta are boxed for easy identification. At every location analyzed in the west Delta, the mean incremental change in EC due to the ELT tidal marsh is negative, indicating that the incorporation of the ELT tidal marsh reduces salinity at these locations for both models that are used to simulate salinity in the Delta (i.e., DSM2 and RMA). Multiple figures in the 2013 BDCP Draft EIR/EIS illustrate that the ELT tidal marsh configuration reduces salinity in the west Delta. See, e.g., 2013 BDCP Draft EIR/EIS, Appendix 5A, Section D, Attachment 2, Figures 6-26, 6-29, 6-32, 6-35, and 6-41 and Attachment 4, Figures 1-69 to 1-72.</p> <p>In short, the tidal marsh assumed for the ELT reduces salinity in the west Delta. Thus,</p>	

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		including the ELT tidal marsh in the modeling to simulate the project alternatives, when in fact the tidal marsh will not be constructed as part of the alternatives, underestimates the impacts to salinity in the west Delta that would be caused by the alternatives.	
2597	20	[ATT9: Figure 5-1. Change in Salinity due to the Early Long Term Tidal Marsh.]	Please see Master Response 14 on water quality.
2597	21	<p>The new alternatives presented in the RDEIR/SDEIS would operate under a very different regulatory regime and in a very different manner than the initial set of alternatives studied in the 2013 BDCP Draft EIR/EIS. But the modeling used in the RDEIR/SDEIS to assess the impacts of the new alternatives has not been updated to reflect these important differences and still includes the same assumptions used in the 2013 analysis. As a result of this significant discrepancy, the RDEIR/SDEIS acknowledges that "there is notable uncertainty in the results of all quantitative assessments that refer to modeling results, due to the differing assumptions used in the modeling and the description of Alternative 4A and the No Action Alternative (ELT)." RDEIR/SDEIS, Section 4.3.4 at pp. 4.3.4-1 to 4.3.4-2; see also id., Section 4.4.4 at p. 4.4.4-1 (Alternative 2D), and Section 4.5.4 at p. 4.5.4-1 (Alternative 5A).</p> <p>Despite acknowledging this "notable uncertainty," the RDEIR/SDEIS nevertheless relies upon the old modeling inputs and assumptions to assess the impacts of the new alternatives. This causes the RDEIR/SDEIS to underestimate the true extent of the project's adverse water quality impacts. The 2013 BDCP Draft EIR/EIS impacts analysis was based upon modeling of Alternatives 2A, 4, and 5 at the late long term (LLT) time period, which includes climate change forecast for the year 2060, sea level rise of 45 centimeters, improvements to the Yolo Bypass and 65,000 acres of tidal marsh. During development of the 2013 BDCP Draft EIR/EIS, modeling was also performed for each of the alternatives at the early long term (ELT) time period, which includes climate change forecast for the year 2025, sea level rise of 15 centimeters, improvements to the Yolo Bypass and 25,000 acres of tidal marsh. The ELT modeling for Alternative 4 was included in the 2013 Draft BDCP, and DWR released the ELT modeling for the No Action Alternative and all project alternatives to interested stakeholders (DWR, 2013 [ATT20]).</p> <p>The problem now is that the modeling for the new alternatives has not been updated, so the project descriptions of the new alternatives do not match the modeling used to determine the impacts of those alternatives, as shown in Table 5.2 [ATT10]. For example, the new alternatives, as described in the RDEIR/SDEIS, maintain the salinity objective in the Bay-Delta Water Quality Control Plan at Emmaton, but the modeling used to analyze the new alternatives includes the modification of that objective that was part of the original Alternative 4. The new alternatives, as described in the RDEIR/SDEIS, maintain the existing operations of the Suisun Marsh Salinity Control Gates but the modeling does not include any operation of the gates. New Alternatives 4A and 2D, as described in the RDEIR/SDEIS, include significantly more closure of the proposed channel barrier located at the head of Old River than the initial alternatives, but the modeling continues to allow flow through the barrier. All of these differences between the way the proposed project is described and is planned to operate, and the way the project was modeled for purposes of the environmental impact analysis, contribute to incorrect findings in the RDEIR/SDEIS that the project's water quality impacts in the Delta are less than significant.</p>	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS.</p> <p>Alternatives 2D, 4A, and 5A include operations of the Suisun Marsh Salinity Control Gates in the same manner as under the Existing Conditions and No Action Alternative.</p> <p>As shown in Appendix 5A, Section C, of the Final EIR/EIS, Alternative 4A is consistent with State Water Resources Control Board Decision 1641. It also should be noted that the Delta Cross Channel assumptions in the CALSIM II model are consistent between the No Action Alternative and action alternatives in the EIR/EIS.</p> <p>Please see Master Response 4 related to alternatives development, Master Response 5 related to BDCP/CA WaterFix and Master Response 30 related to modeling.</p>
2597	22	Inflow requirements to the Clifton Court Forebay in the new alternatives may also be incorrectly reflected in the modeling, but this is unclear as the RDEIR/SDEIS provides inconsistent information on this point. Inflow to the Clifton Court Forebay is currently	The reference to 10,300 cfs is related to the operations of the Banks Pumping Plant which would convey water from both the north Delta intakes and Clifton Court Forebay.

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		<p>limited to 6,680 cubic feet per second (cfs) plus one-third of the San Joaquin River flow as measured at Vernalis from December 15 to March 15. The 2013 BDCP Draft EIR/EIS proposed to relax this restriction and allow inflow to be 10,300 cfs at all times. 2013 BDCP Draft EIR/EIS, Chapter 3, Table 3-6 at p. 3-36. This table is not redlined in Appendix A of the current RDEIR/SDEIS, leaving the reader to assume that this relaxation is still sought for the revised Alternative 4. Also, the modeling used for the impacts analysis of the revised Alternative 4 and the new Alternatives 4A and 2D includes this relaxation.</p> <p>However, the RDEIR/SDEIS does not mention any changes regarding the inflow restrictions (RDEIR/SDEIS, Sections 4.1.2.2, 4.1.3.2, and 4.1.4.2), which would appear to indicate that the modification to Clifton Court Forebay inflow restrictions is not proposed as part of the new alternatives. If the relaxation of inflow requirements is indeed part of the new alternatives, it must be defined and consistently documented throughout the RDEIR/SDEIS. If the relaxation of inflow requirements is not part of the new alternatives, the modeling must be revised to reflect this fact.</p>	<p>Please see Master Response 4 related to alternatives development.</p>
2597	23	<p>The mere acknowledgement that there is "notable uncertainty" in the impact assessment due to the differences between the modeling assumptions and the way the alternatives are described and actually designed to operate is not sufficient to fix the problems in the RDEIR/SDEIS. Rather, to truly fix these problems, the modeling must be adjusted to align with the project that is being modeled, so that the impact assessment is accurate and reliable.</p>	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS.</p> <p>Please see Master Response 4 related to alternatives development.</p>
2597	24	<p>The sensitivity studies intended to support the use of outdated modeling to analyze the impacts of the new alternatives (including Alternative 4A, the new Preferred Alternative) do not address key aspects of the new project as proposed and do not account for the water quality effects that would be caused by the differences between the new and old alternatives. Thus the sensitivity studies do not support use of the old modeling.</p> <p>The RDEIR/SDEIS states that "the Lead Agencies have determined that they may reasonably rely on the modeling conducted for Alternative 4 to accurately predict the environmental effects of Alternative 4A." RDEIR/SDEIS, Section 4.1.6 at p. 4.1-43. While there are no similar determinations that the Lead Agencies may rely upon the modeling conducted for Alternative 2A at ELT [Early Long Term] to predict the effects of new Alternative 2D, and upon the modeling conducted for Alternative 5 at ELT to predict the effects of new Alternative 5A, it is evident that the RDEIR/SDEIS relies on the prior modeling to evaluate these new alternatives as well.</p> <p>The determination that modeling for Alternative 4 will accurately predict the environmental effects of Alternative 4A is based upon Appendix B.1 of the RDEIR/SDEIS, which presents a "brief sensitivity analysis" using the CalSim II operations model. RDEIR/SDEIS, Appendix B at p. B-1. The sensitivity study incorporates some corrections to the modeling assumptions to be consistent with the project description as shown in Table 5-2 [ATT10], specifically, removing the 25,000 acres of tidal marsh restoration, removing the Yolo Bypass enhancements, and removing the relaxation of the Emmaton salinity objective. However, the sensitivity study did not correct the modeling assumptions to make them consistent with the project description for the Head of Old River Barrier or the Clifton Court Forebay inflow restrictions. As a result, the sensitivity study does not represent a complete and accurate depiction of the project as it is currently described and proposed in the</p>	<p>The RDEIR/SDEIS did not include any new modeling for Alternatives 2D, 4A, and 5A, and instead relied upon sensitivity analyses based upon comparison of model results from the Draft EIR/EIS and Draft BDCP. The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS.</p> <p>The modeling results presented in the Final EIR/EIS for the No Action Alternative at ELT and Alternatives 2D, 4A, and 5A replace the sensitivity analyses presented in the RDEIR/SDEIS. The CALSIM II model assumptions presented in the Final EIR/EIS represents the changes of removal of 25,000 acres of tidal habitat restoration, location of the D-1641 water quality compliance location at Emmaton, consideration of the Yolo Bypass habitat improvements in the No Action Alternative, Head of Old River Barrier operations, and Clifton Court Forebay inflow restrictions consistent with agreements with the USACE as under the No Action Alternative and Existing Conditions.</p> <p>Please see Master Response 4 related to alternatives development and Master Response 30 related to modeling.</p>

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2597	25	[ATT10: Table 5-2. Comparison between project description of Alternative 4A, the modeling assumptions used for the impact analysis (Alternative 4 at ELT), and the modeling assumptions in the sensitivity study.]	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS.</p> <p>Please see Master Response 4 related to alternatives development and Master Response 30 related to modeling.</p>
2597	26	<p>The sensitivity study only examined the results of the water supply operations model (CalSim II) and did not evaluate the changes in Delta flows or water quality that would result from these changes. Since the Delta modeling tools (DSM2 HYDRO, DSM2 QUAL, and DSM2 PTM) were not employed for the sensitivity study, the study does not correct the modeling assumptions to make them consistent with the project description for the operation of the Suisun Marsh Salinity Control Gates. As a result of all of these factors, the sensitivity study does not support using the old modeling for Alternative 4 to predict the effects on Delta water quality or aquatic resources for Alternative 4A.</p> <p>In fact, the second set of sensitivity studies presented in the RDEIR/SDEIS utilized the Delta modeling tools and show that the operational changes in the revised project description do affect water quality. This second set of studies therefore confirms that the outdated modeling used for the 2013 BDCP Draft EIR/EIS cannot be used to accurately reflect the impacts of revised Alternative 4 and the new alternatives. Furthermore, these problems are compounded by the inaccurate representation of Head of Old River Barrier operations in the modeling used for the impacts analysis, which masks potentially significant water quality impacts of the new Preferred Alternative.</p>	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS.</p> <p>Please see Master Response 14 related to water quality and Master Response 30 related to modeling.</p> <p>Modeling for the EIR/EIS has been based on the Existing Conditions, No Action Alternative, and Alternative 1 models developed in April – May of 2010 (2010 models), which were the state-of-the-art at the time, and formed the basis for universal assumptions in the other action alternatives in the EIR/EIS. However, in August 2011 several model improvements were identified by the water agencies, fishery agencies, and the modeling community. The identified improvements were compiled, and the Existing Conditions, No Action Alternative, and Alternative 1 models were updated in coordination with DWR, Reclamation and USFWS. This update was performed to verify if the compiled model improvements altered the incremental changes between the BDCP Alternative 1 and the Existing Conditions and the No Action Alternative relative to the 2010 models. The findings from the 2011 update showed that the incremental differences between Alternative 1 and the Existing Conditions and the No Action Alternative remained consistent with the 2010 modeling. Therefore, the action alternatives modeled since 2011 continued to rely on the 2010 modeling, allowing consistency and comparability throughout the BDCP EIR/EIS. Similarly, when Alternative 4A was modeled using the 2013 baseline, the incremental changes in the operational results for Alternative 4A as compared to the No Action Alternative were similar to the prior incremental results between the 2010 modeling for the No Action Alternative and Alternative 4A. It should be noted that the modeling used in the EIR/EIS must be used in a comparative manner and not to define absolute values.</p>
2597	27	<p>The second set of sensitivity studies to assess water quality impacts was used only to determine whether the project would exceed water quality standards, and does not address the provisions of the CEQA Guidelines specifying that significant water quality impacts can occur even without violating water quality standards, when the project would "otherwise substantially degrade water quality." The studies themselves demonstrate this problem by revealing that the Preferred Alternative will in fact substantially degrade water quality and have significant water quality impacts that were not reported in the RDEIR/SDEIS.</p> <p>The RDEIR/SDEIS repeatedly relies on sensitivity studies (presented in RDEIR/SDEIS, Appendix A, Appendix 8H, Attachment 1) for the water quality impacts analysis of Alternatives 2D, 4A, and 5A. For example, in discussion of water quality impacts in the Delta due to changes in electrical conductivity (EC), the RDEIR/SDEIS states: "[T]he analysis of EC under Alternative 4A is based on modeling conducted for Alternative 4 in the ELT, which assumes implementation of Yolo Bypass Improvements and 25,000 acres of tidal natural communities restoration. Also, the modeling was originally performed assuming the Emmaton compliance point shifted to Threemile Slough. However, Yolo Bypass Improvements are not a component of Alternative 4A and the amount of tidal habitat</p>	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS.</p> <p>Please see Master Response 14 regarding modeling and sensitivity analyses related to water quality assessments in the RDEIR/SDEIS and the Final EIR/EIS. Regarding water quality degradation as a potential impact, this addressed in the significance criteria in Section 8.3.2.3, Effects Determinations in Chapter 8, Water Quality of the EIR/EIS. Thresholds #3 and #4 in this section were applied in each constituent impact assessment. Please also see Master Response 31.</p>

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		<p>restoration (i.e., Environmental Commitment 4) would be significantly less than that represented in the Alternative 4A modeling. Also, Alternative 4A does not include a change in compliance point from Emmaton to Threemile Slough. Furthermore, there are several factors related to the modeling approach that may result in modeling artifacts that show objective exceedance, when in reality no such exceedance would occur. The result of all of these factors is that the quantitative modeling results presented in this assessment is not entirely predictive of actual effects under Alternative 4A, and the results should be interpreted with caution. In order to understand the significance of all of these factors on the results, sensitivity analyses and other analyses were performed to evaluate the impact of maintaining the compliance point at Emmaton, the impact of having substantially less restoration than included in the modeling that was analyzed, and whether exceedances were indeed modeling artifacts or were potential alternative-related effects that may actually occur. For more information on these sensitivity analyses, refer to Chapter 8, Section 8.3.1.7, Electrical Conductivity, and Appendix 8H Attachment 1, both in Appendix A of the RDEIR/SDEIS. In this assessment, the modeling results are described and then in most cases are qualified in light of findings from the sensitivity analyses. Conclusions thus represent assessment of the combination of the modeling results and sensitivity analysis findings." RDEIR/SDEIS Section 4.3.4 at p. 4.3.4-23.</p> <p>The referenced sensitivity studies evaluate whether changes to the project description for Alternative 4 (such as operation of Suisun Marsh Salinity Control Gates) would reduce the water quality impacts associated with exceedances of salinity objectives. The studies are limited to this one issue and are not used to evaluate any other water quality impacts that could be caused by the new alternatives. But under CEQA, significant water quality impacts can occur without exceeding water quality objectives. This is why the CEQA Guidelines, in assessing whether a project's impacts are significant or not, ask both whether a project would result in a violation of any water quality standards and whether a project would "otherwise substantially degrade water quality." CEQA Guidelines, Appendix G, [Section] IX (Hydrology [and] Water Quality). In fact, as shown below, the sensitivity studies themselves reveal a substantial degradation of water quality and thus adverse water quality impacts in addition to exceedances of salinity objectives. The RDEIR/SDEIS' discussion of the sensitivity studies in Appendix A, Appendix 8H,</p> <p>Attachment 1 is limited to analysis of compliance with salinity objectives at the following locations and times:</p> <ul style="list-style-type: none"> -Sacramento River at Emmaton (April through August) -San Joaquin River at San Andreas Landing (April through August) -Old River at Tracy Road Bridge (year round) -San Joaquin River at Prisoners Point (April and May) -Suisun Marsh (year round) <p>CCWD [Contra Costa Water District] obtained the complete results of the sensitivity studies from DWR (DWR, 2015 [ATT21]) to examine the effects of the project modifications presented in the studies at broader spatial and temporal scales. The results indicate that while these modifications may have the desired effect of reducing violations of salinity standards, they also creates additional impacts that are not disclosed in the RDEIR/SDEIS.</p>	

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		Two examples are provided below: (1) Suisun Marsh Salinity Control Gate operations, which keep Suisun Marsh fresh but increase salinity in the Delta; and (2) maintaining the salinity objective at Emmaton, which keeps salinity low in the summer when the Emmaton objective governs operations but raises Delta salinity in the fall and winter.	
2597	28	<p>The project description for the revised Alternative 4 and the new alternatives includes operations of the Suisun Marsh Salinity Control Gates (SMSCG). However, the modeling that is used as the basis for the impacts analysis assumes no operation of the SMSCG. The RDEIR/SDEIS presents limited results from a sensitivity study that was designed to determine how operation of the SMSCG would alter Delta salinity. The study found that SMSCG operation freshens Suisun Marsh. However, the RDEIR/SDEIS does not disclose the effects that SMSCG operation would have outside of Suisun Marsh, in Suisun Bay and the Delta. The results of the sensitivity studies provided by DWR indicate that operating the SMSCG as proposed for the new alternatives is likely to create water quality impacts by increasing salinity throughout the Delta from October through March. Operation of the gates creates a net flow of fresh water from the Sacramento River near Collinsville into Suisun Marsh equivalent to about 2,800 cubic feet per second (cfs), thus reducing salinity within Suisun Marsh (Enright, 2008, slide 40 [ATT17]). The RDEIR/SDEIS contains graphs showing the reduction in salinity within Suisun Marsh in response to operation of the gates. RDEIR/SDEIS, Appendix A, Appendix 8H, Attachment 1 at p. 10 (Figures 9 and 4).</p> <p>However, diversions of the freshwater into Suisun Marsh via operation of SMSCG increase salinity in Suisun Bay and the western Delta (Enright, 2008, slides 43 and 44). The RDEIR/SDEIS does not disclose the degradation in water quality that SMSCG operation would have within Suisun Bay or the Delta. Figure 5-2 [ATT1] shows changes in salinity in the western Delta at Collinsville that are caused by SMSCG operations. The increase in salinity from October through March is an effect of project operations that is not captured by the outdated modeling that was used to evaluate water quality impacts. Table 5-3 [ATT12] illustrates the average monthly change in salinity at locations throughout the Delta due to operation of the SMSCG as specified in the sensitivity studies provided by DWR. The table is modeled after the tables in Appendix B to the RDEIR/SDEIS that are referenced in the water quality impacts sections, and provides a summary of the changes for each month at multiple locations within the Delta.</p> <p>In sum, the results of the sensitivity studies provided by DWR indicate that operating the SMSCG as proposed for the new alternatives is likely to increase salinity throughout the Delta from October through March relative to not operating the SMSCG. But as noted above, the modeling used in the impacts analysis for the new alternatives did not include operation of the SMSCG. As a result, the modeling underestimates the project's impacts to salinity throughout the Delta, with the greatest underestimation occurring in the western Delta.</p>	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS.</p> <p>Please see Master Response 14 related to water quality, Master Response 28 related to operational criteria, and Master Response 30 related to modeling.</p>
2597	29	[ATT11: Figure 5-2. Monthly Average Salinity at Collinsville both with and without operation of the Suisun Marsh Salinity Control Gates.]	The RDEIR/SDEIS provided sensitivity analysis for Alternatives 2D, 4A, and 5A. The Final EIR/EIS includes model results specifically for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C. Alternatives 2D, 4A, and 5A only include a small area of wetlands restoration based upon mitigation requirements for construction of the conveyance facilities.
2597	30	[ATT12: Table 5-3. Effect of operating the Suisun Marsh Salinity Control Gates.]	<p>Please see Master Response 14 related to water quality.</p> <p>The RDEIR/SDEIS provided sensitivity analysis for Alternatives 2D, 4A, and 5A. The Final EIR/EIS includes model results specifically for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and</p>

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			Existing Conditions in Appendix 5A, Section C. Alternatives 2D, 4A, and 5A only include a small area of wetlands restoration based upon mitigation requirements for construction of the conveyance facilities.
2597	31	<p>The project descriptions for the revised Alternative 4 and the new alternatives include maintaining compliance with the salinity objective at Emmaton. However, the modeling that is used as the basis for the impacts analysis does not maintain compliance of the salinity objective at Emmaton, but rather moves the salinity objective upstream to Three Mile Slough. The RDEIR/SDEIS discusses the reductions in Delta salinity in the summer that are expected due to maintaining compliance at Emmaton, but does not disclose the resulting increase to salinity in the fall and winter. Maintaining compliance at Emmaton (consistent with the project description) instead of moving the salinity objective to Three Mile Slough (consistent with the impacts analysis), would reduce salinity at Emmaton from April through August when the salinity objective is assumed to be in effect each year. Maintaining compliance also reduces yield of the project during those months, triggering operational changes during other months to recover the lost yield. The net effect of maintaining compliance with the salinity object at Emmaton is a reduction in salinity in the spring and summer, which is illustrated in the RDEIR/SDEIS, with an increase in salinity in the fall and winter, which is not disclosed in the RDEIR/SDEIS.</p> <p>Table 5-4 [ATT13] shows the average monthly change in salinity at locations throughout the Delta from the sensitivity studies provided by DWR (DWR, 2015 [ATT21]). The results confirm that maintaining compliance of the salinity objective at Emmaton as proposed for the new alternatives is likely to increase salinity throughout the Delta from October through March while reducing salinity from April through September. The RDEIR/SDEIS refers to the expected reduction in salinity in the summer to dismiss water quality impacts identified in the modeling results; however, the RDEIR/SDEIS does not disclose the expected increase in salinity in the fall and winter.</p> <p>By not including the salinity objective at Emmaton, the modeling for the new alternatives understates the salinity impacts from the project throughout the Delta from October to March. This is the same period that the project's salinity impacts are also underestimated due to the failure of the modeling to include operation of the Suisun Marsh Salinity Control Gates. Each modeling error thus compounds the other, resulting in a deficient analysis that fails to disclose or evaluate the true magnitude of the project's impacts on salinity levels.</p>	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS.</p> <p>Please refer to Master Response 30 regarding modeling and sensitivity analyses conducted to support the RDEIR/SDEIS and Final EIR/EIS.</p>
2597	32	[ATT13: Table 5-4. Effect of not relaxing the salinity objective compliance location at Emmaton.]	Please refer to Master Response 30 regarding modeling and sensitivity analyses conducted to support the RDEIR/SDEIS and Final EIR/EIS and Master Response 14 related to water quality. The RDEIR/SDEIS provided sensitivity analysis for Alternatives 2D, 4A, and 5A. The Final EIR/EIS includes model results specifically for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C. Alternatives 2D, 4A, and 5A only include a small area of wetlands restoration based upon mitigation requirements for construction of the conveyance facilities.
2597	33	The description of the revised Alternative 4 and the new Preferred Alternative, Alternative 4A, includes requirements for positive net flows in Old and Middle River [OMR] at times when the Head of Old River Barrier [HORB] is closed, even though this is not physically possible. As described below, as a result of this consistency, the project's water quality impacts are not adequately disclosed and evaluated. Closure of the HORB impacts the water quality in the south and central Delta; Figure 5-3 [ATT14] shows the geographical extent of the impacts in wet and dry years.	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The model results indicate that salinity would increase in summer months in the Sacramento River at Collinsville under the operations of the entirety of the Alternative 4A as compared to the No Action Alternative. Alternative 4A includes operations of a permanently-installed Head of Old River Barrier.</p> <p>Please refer to Master Response 30 regarding modeling and sensitivity analyses conducted to support the</p>

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		<p>When the HORB is closed, flow from the San Joaquin River is prevented from entering the south Delta at Old River. During wet years, the project description specifies that OMR should be positive for much of the winter and spring. However, as discussed above, OMR cannot be positive with HORB closed; in order to prevent negative OMR during HORB closure, the south Delta export facilities would reduce diversions beyond what is modeled for Alternatives 4/4A and 2A/2D. With no positive flow into Old and Middle Rivers from the San Joaquin River and no negative flow in Old and Middle Rivers caused by operation of the south Delta export facilities, OMR would approach zero, creating stagnant conditions in the south and central Delta (indicated by the green shading in Figure 5-3(a)) and depriving these areas of water from the San Joaquin River, which during wet years is typically of very good quality.</p> <p>During dry years, the project as described in the RDEIR/SDEIS allows OMR to be negative while the HORB is closed. With no flow entering Old River from the San Joaquin River at the HORB, and with the export pumps operating, the San Joaquin River would flow north past the HORB, then turn south entering Old and Middle Rivers from the north and creating negative OMR (Figure 5-3(b)). The central Delta would receive this water heading from the north, and thus would receive a greater proportion of San Joaquin River water as compared to baseline conditions. This is an important consideration for water quality in the central Delta, since during dry years, San Joaquin River flows are generally low and the water quality is poor. Further, with the HORB closed, stagnant conditions would be created in the south Delta. For both wet and dry years, impacts would be greater than what is modeled. In the stagnant regions, flow in the channels would oscillate with the tides, but without net flow, the residence time would be very long. (Residence time is estimated by the volume of water in a region divided by the net flow through the region, so as the net flow approaches zero, the residence time approaches infinity.) Long residence times provide optimal conditions for harmful algal blooms as discussed in Section 2.2.1.2 of CCWD [Contra Costa Water District]'s July 25, 2014 comment letter on the 2013 BDCP Draft EIR/EIS.</p> <p>CCWD conducted a sensitivity study to evaluate the degree to which the analysis in the RDEIR/SDEIS underestimates the impacts of the new alternatives. Unlike the modeling used for the impact analysis in the RDEIR/SDEIS, CCWD's sensitivity study assumes that the HORB is closed when the project description indicates it should be closed. The CCWD study also reduced south Delta exports if necessary to attempt to meet the OMR requirement. Note that because no parameters are indicated in the project description to open the HORB for water quality or water stage concerns, this was not simulated in the CCWD study. Figure 5-4 [ATT15] illustrates the results for three wet years (Figure 5-4(a)) and three dry years (Figure 5-4(b)). In all six years, the negative water quality effects of the proposed project are greater than what is disclosed and evaluated in the RDEIR/SDEIS.</p> <p>During wet years, the percent of water diverted at CCWD's Old River Intake that would originate from Delta agricultural drainage increases with the project, reaching as high as 90%. When there is net flow -- either positive or negative -- in Old River, the agricultural drainage that enters the river is carried away from the south Delta. Conversely, the buildup of agricultural drainage is an indicator of a lack of flow with increased residence time, which is likely to lead to increased algal growth with its attendant operational, taste and odor, and public health impacts as discussed in Section 2.2.1.2 of CCWD's July 25, 2014 comment letter. During dry years, the percent of water diverted at CCWD's Old River Intake that would originate from the San Joaquin River increases, increasing CCWD's source water salinity. The modeling for the RDEIR/SDEIS, which does not include HORB operations that</p>	<p>RDEIR/SDEIS and Final EIR/EIS and Master Response 14 related to water quality.</p>

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		match the project description, misses this effect and underestimates water quality impacts.	
2597	34	[ATT14: Figure 5-3. Head of Old River Barrier affects water quality in the south and central Delta.]	Please refer to Master Response 30 regarding modeling and sensitivity analyses conducted to support the RDEIR/SDEIS and Final EIR/EIS and Master Response 14 related to water quality.
2597	35	[ATT15: Figure 5-4. Head of Old River Barrier affects water quality in the south and central Delta, sensitivity study results.]	<p>Please refer to Master Response 30 regarding modeling and sensitivity analyses conducted to support the RDEIR/SDEIS and Final EIR/EIS and Master Response 14 related to water quality.</p> <p>It should be noted that the RDEIR/SDEIS provided sensitivity analysis for Alternatives 2D, 4A, and 5A. The Final EIR/EIS includes model results specifically for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C. Alternatives 2D, 4A, and 5A only include a small area of wetlands restoration based upon mitigation requirements for construction of the conveyance facilities. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS.</p>
2597	36	<p>The RDEIR/SDEIS states that the new alternatives (Alternatives 4A, 2D and 5A) would eliminate almost all of the significant environmental impacts associated with Alternative 4, the previous Preferred Alternative. For the new alternatives, the RDEIR/SDEIS identifies only one significant water quality impact, from increased concentrations of electrical conductivity (EC), and two water quality mitigation measures, WQ-11a and WQ-11b. RDEIR/SDEIS, Sections 4.3.4 (Alternative 4A), 4.4.4 (Alternative 2D) and 4.5.4 (Alternative 5A). This approach is incorrect.</p> <p>The modeling that forms the basis of the impact analyses is fundamentally flawed. The inputs to the modeling of the three new alternatives do not match the descriptions of those alternatives in crucial respects. The result is an analysis that systematically obscures and underestimates impacts. Therefore, the project proponents have no basis to conclude that Alternatives 4A, 2D and 5A would not have significant water quality impacts. The new alternatives would in fact have significant water quality impacts. Accordingly, legally adequate mitigation must be identified for the true water quality impacts of Alternatives 4A, 2D and 5A as well as Alternative 4; the defects in the mitigation proposed in the 2013 BDCP Draft EIR/EIS were described in detail in Section 3 of CCWD [Contra Costa Water District]'s July 25, 2014 comment letter.</p>	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS.</p> <p>Please refer to Master Response 30 regarding modeling and sensitivity analyses conducted to support the RDEIR/SDEIS and Final EIR/EIS and Master Response 14 related to water quality.</p>
2597	37	<p>The RDEIR/SDEIS states that the new alternatives (Alternatives 4A, 2D and 5A) would eliminate almost all of the significant environmental impacts associated with Alternative 4, the previous Preferred Alternative. For the new alternatives, the RDEIR/SDEIS identifies only one significant water quality impact, from increased concentrations of electrical conductivity (EC), and two water quality mitigation measures, WQ-11a and WQ-11b. RDEIR/SDEIS, Sections 4.3.4 (Alternative 4A), 4.4.4 (Alternative 2D) and 4.5.4 (Alternative 5A). This approach is incorrect.</p> <p>With respect to bromide, the analysis of Alternatives 4A, 2D and 5A contains the same error as the analysis of Alternative 4. Specifically, the analysis assumes that because water purveyors' use of the Mallard Slough intake is "opportunistic," the alternatives' impact on the number of days when the intake is unavailable does not constitute a significant environmental impact. RDEIR/SDEIS, Section 4.3.4 at pp. 4.3.4-9 to 4.3.4-10 (Alternative 4A); Section 4.4.4 at p. 4.4.4-9 (Alternative 2D); and Section 4.5.4 at p. 4.5.3-9 (Alternative 5A). For the reasons described in Section 3 of CCWD [Contra Costa Water District]'s July 25, 2014 comment letter, this conclusion is inaccurate and adequate mitigation must be identified for</p>	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. Please see Master Response 4 related to alternatives development and Master Response 5 related to BDCP/CA WaterFix generally.</p>

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		the significant bromide impacts of the new alternatives.	
2597	38	<p>The RDEIR/SDEIS states that the new alternatives (Alternatives 4A, 2D and 5A) would eliminate almost all of the significant environmental impacts associated with Alternative 4, the previous Preferred Alternative. For the new alternatives, the RDEIR/SDEIS identifies only one significant water quality impact, from increased concentrations of electrical conductivity (EC), and two water quality mitigation measures, WQ-11a and WQ-11b. RDEIR/SDEIS, Sections 4.3.4 (Alternative 4A), 4.4.4 (Alternative 2D) and 4.5.4 (Alternative 5A). This approach is incorrect.</p> <p>The RDEIR/SDEIS identifies two new mitigation measures for the one acknowledged water quality impact of new Alternatives 4A, 2D and 5A. The EC water quality mitigation measures for Alternative 4A are WQ-11a (Adaptively Manage Diversions at the North and South Delta Intakes to Reduce or Eliminate Water Quality Degradation in Western Delta) and WQ-11b (Adaptively Manage Head of Old River Barrier and Diversions at the North and South Delta Intakes to Reduce or Eliminate Exceedances of the Bay-Delta WQCP [Water Quality Control Plan] Objective at Prisoners Point). RDEIR/SDEIS, Section 4.3.4 at pp. 4.3.4-30 to 4.3.4- 31. Because these mitigation measures do not set performance standards for water quality at or near CCWD [Contra Costa Water District] intakes that meet CEQA or NEPA requirements (see Section 3 of CCWD's July 25, 2014 comment letter), they must be revised to provide such actual mitigation.</p>	<p>The CALSIM II model output specifically includes diversions for Contra Costa Water District. As indicated in the tables entitled "CALSIM II Summary Reporting Metrics, Long-Term Average and Dry and Critical Year Averages" in Appendix 5A, Section C of the EIR/EIS, water deliveries to CVP water contractors in the San Francisco Bay Area Region (including Contra Costa Water District) would be similar or greater than Existing Conditions under all action alternatives; and similar or greater than the No Action Alternative under the action alternatives, except Alternatives 6, 7, and 8. As described in Chapter 5, Water Supply, of the EIR/EIS, the water supply impact analysis is based upon changes in water deliveries based upon SWP and CVP operations. The potential impacts and associated mitigations related to changes in water deliveries are presented in Appendix 5B, Response to Reduced South of Delta Water Supplies, and within applicable resource chapters, such as Chapter 14, Agricultural Resources.</p> <p>Please see Master Response 14 related to water quality, Master Response22 and Master Response 30 related to modeling.</p> <p>Mitigation Measures WQ-11a and WQ-11b include several components including coordination by DWR, regulating agencies, and Delta water users through Adaptive Management measures. Also refer to Master Response 33, Adaptive Management.</p>
2597	39	<p>The revised environmental analysis includes a change in the project objectives. Compare the 2013 BDCP Draft EIR/EIS, Chapter 2 at p. 2-2 to 2-4 with the July 2015 BDCP RDEIR/SDEIS, Section 1.1.4 at pp. 1-8 to 1-9. In particular, the initial project objectives cited the need to comply with Section 10(a)(1)(B) of the Endangered Species Act (ESA), 16 U.S.C. [Section] 1539(a)(1)(B), which authorizes the U.S. Fish [and] Wildlife Service to issue an incidental take permit for listed species pursuant to a habitat conservation plan. 2013 BDCP Draft EIR/EIS, Chapter 2 at p. 2-3. The initial project objectives also cited the goal of ensuring that "the BDCP meets the standards for an NCCP [natural communities conservation plan]." Id. For these reasons, the 2013 environmental analysis made clear that "the BDCP is a joint HCP/NCCP intended to address ESA [Endangered Species Act] and NCCPA [Natural Community Conservation Planning Act] compliance. . ." Id., Executive Summary at p. ES-13. But under the revised project objectives, there is no longer any reference to the HCP provisions of Section 10 of the ESA. RDEIR/SDEIS, Section 1.1.4.1 at pp. 1-8 to 1-9. Similarly, the revised objectives no longer refer to the goal of ensuring that "the BDCP meets the standards for an NCCP." Id. Consistent with this substantial change in the project objectives, the revised environmental analysis explains that the three new alternatives (Alternatives 4A, 2D and 5A) "would not serve as habitat conservation plans/natural community conservation plans (HCPs/NCCPs) under ESA Section 10 and the NCCPA," and would not include the extensive set of habitat restoration actions that have been proposed as part of the other 15 alternatives. Id., Section 4.1 at pp. 4.1-1.</p> <p>The revision of the project objectives in the RDEIR/SDEIS should have led to a reconsideration of those alternatives that previously were eliminated from the analysis on the ground that they did not meet the prior project objectives. For example, the "Portfolio" alternative -- the consideration of which has been urged by a broad range of water districts, municipalities, environmental organizations, business groups, and elected officials -- was excluded from the initial environmental analysis on the ground that it was beyond the scope of the former project objective of developing a Delta-focused habitat conservation plan and</p>	<p>Please see Master Response 4 related to alternatives development, Master Response 5 related to BDCP/CA WaterFix, Master Response 14 related to water quality, Master Response 30 related to modeling and Master Response 28 related to operational criteria.</p>

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		<p>natural communities conservation plan. 2013 BDCP Draft EIR/EIS, Appendix 3A at p. 3A-81. In particular, the prior analysis stated that while there is "much merit" to the Portfolio alternative, this alternative "does not qualify as an EIR/EIS alternative for the BDCP, as its scope is far greater than can be achieved through a Delta-focused HCP/NCCP." Id.</p> <p>But the project objective of developing an HCP/NCCP has now been abandoned. As a result, the environmental analysis needs to reexamine the Portfolio alternative, and other previously screened out alternatives, in light of the change in project objectives. The Portfolio alternative would involve a 3,000 cfs [cubic feet per second] north Delta intake and a single tunnel sized for 3,000 cfs gravity flow, with increased water storage south of the Delta, enhanced water recycling and conservation, and improvements to Delta levees (The Bay Institute et al., 2013). The alternative could substantially improve the reliability of water supplies for those who depend on Delta exports, while at the same time significantly reducing the environmental impacts of the proposed project and its enormous financial costs.</p> <p>One of the fundamental purposes of the project objectives is to assist in defining the range of alternatives that must be studied. As the CEQA Guidelines explain, an EIR must evaluate a range of reasonable alternatives that would feasibly attain most of the basic objectives of the project while avoiding or substantially lessening the project's significant impacts. CEQA Guidelines [Section] 15126.6(a), (c). Here, the Portfolio alternative was eliminated from detailed consideration on the ground that it did not conform to the project objective of the BDCP serving as a habitat conservation plan and natural communities conservation plan. But now that this objective has changed, the Portfolio alternative must be reexamined in light of the new project objectives. Without this reexamination, the decision-makers and the public lack sufficient information to assess whether there are feasible ways of achieving the new objectives while reducing the BDCP's significant impacts. The failure to conduct this reexamination is compounded by the fact that the RDEIR/SDEIS does not clearly identify the revisions to the project objectives. While the document presents redlined versions of the various environmental analyses to show what the text changes are compared to the 2013 BDCP Draft EIR/EIS, no such redline is presented to show the change in the project objectives. Instead, the reader must compare the two different versions of the project objectives to ascertain what the specific text changes are. This has the effect of masking the important changes to the objectives, which further hampers informed governmental decision-making and public participation on the critical issue of alternatives, which constitutes the heart of the environmental analysis.</p>	
2597	40	<p>CEQA states that an EIR should be organized and written in a manner that will make the information "meaningful and useful to the decision-makers and to the public." Pub. Res. Code [Section] 21003(b). The CEQA Guidelines reinforce this principle, stating that EIRs should be written in plain language "so that decision-makers and the public can rapidly understand the documents." CEQA Guidelines [Section] 15140. Similarly, under NEPA, federal agencies are directed to use plain language and to follow a clear format when preparing an EIS, so that the environmental analyses can be readily understood by the public. 40 C.F.R. [Sections] 1500.4(d), (e), 1502.8.</p> <p>The RDEIR/SDEIS fails to comport with these important principles. The presentation of information is confusing and is not susceptible to being readily understood even by experts, let alone by members of the general public. The water quality impact analysis is one example of this problem. Chapter 8 of the 2013 BDCP Draft EIR/EIS contains a water quality</p>	<p>Please refer to Master Response 8 related to lead agencies analyzing the project as a whole, Master Response 38 for comments pertaining to the length and complexity of the EIR/EIS. Please refer and Master Response 40 for information regarding outreach conducted for California WaterFix (and previously the BDCP).</p>

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		<p>analysis for the initial set of alternatives. Some portions of this analysis have been revised, while other portions have not changed. Appendix A to the RDEIR/SDEIS contains a partial version of Chapter 8, which shows those parts of the chapter that have been revised. This version of Chapter 8, however, does not contain the parts of the chapter that have not been revised. Further, there is no way of knowing in advance -- without actually reviewing the new partial version of Chapter 8 -- which specific portions of the analysis have been revised and which portions have not changed.</p> <p>In addition, some of the section numbers have been modified; for instance, Section 8.2 of the 2013 document ("Environmental Setting/Affected Environment," see 2013 BDCP Draft EIR/EIS, Chapter 8, Section 8.2 at p. 8-5) is now Section 8.1 (see RDEIR/SDEIS, Section 8.1 at p. 8-3). Moreover, there is an entirely new chapter of the RDEIR/SDEIS, entitled "Section 4," that contains the evaluation of all of the environmental impacts for the three new alternatives, including water quality effects. The result is that if a reader wishes to conduct a comparative review of the water quality impacts of the different alternatives, he or she must first review the revised version of Chapter 8 to ascertain which portions of the prior water quality analysis have been revised; then review the old version of Chapter 8 to read the portions that have not changed, while accounting for the different section numbers between the two versions of the chapter to piece them together in a coherent fashion; then review the water quality portions of the environmental analyses in Section 4 for the three new alternatives. The RDEIR/SDEIS contains a one-page "Document Review Road Map," but this brief diagram does little to help the reader to decipher this extraordinarily complicated format. Rather, to truly understand the water quality analysis for this project, an intensive side-by-side review of three different voluminous documents (old Chapter 8, revised Chapter 8, and the water quality portions of new Section 4) is required. And this discussion is limited to one impact -- water quality. The various other discussions and analyses in the environmental document suffer from similar problems.</p> <p>Indeed, the same problem exists for the draft BDCP document itself: Appendix D to the RDEIR/SDEIS shows the revisions to the 2013 draft of the BDCP, but as with the environmental analyses, this appendix does not contain portions of the draft BDCP document that have not been revised. So, again, if a reader wishes to engage in a thorough review of the project that is being proposed for approval, he or she must sift through two different documents (the initial draft BDCP and Appendix D to the RDEIR/SDEIS), side by side, to determine what the details of the proposed project are. Not surprisingly, this complicated presentation format has generated substantial confusion among those trying to ascertain the details of the proposed project and its environmental impacts. This substantial confusion impedes a fundamental goal of the environmental review -- to present a clear and cogent analysis so that the decision-makers and the public can readily understand it. This is another flaw in the RDEIR/SDEIS warranting revision and recirculation.</p>	
2597	41	<p>The Executive Summary of the RDEIR/SDEIS is problematic. Under CEQA, an EIR must include a summary. CEQA Guidelines [Section] 15123. NEPA contains a similar requirement. 40 C.F.R. [Section] 1502.12 ("Each environmental impact statement shall contain a summary which adequately and accurately summarizes the statement."). Given the length, complexity and confusing organization of the RDEIR/SDEIS, the 105-page "Executive Summary" is especially important; in all likelihood, this is the only section of the RDEIR/SDEIS that most reviewers will read. Nevertheless, even looking at only one environmental topic -- water quality -- when the Executive Summary is compared to the impact analysis in the remainder of the document, it becomes clear that the Executive Summary is not accurate and</p>	<p>For more information regarding the document's length and complexity please see Master Response 38.</p>

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		<p>consistently understates the significance of the environmental impacts.</p> <p>For example, whereas the Executive Summary states that the impact of Alternative 4 on bromide concentrations is less than significant and no mitigation is proposed, the actual impact analysis in the RDEIR/SDEIS states that the impact is significant, identifies revised Mitigation Measure WQ-5 for that impact, and concludes that the impact is significant and unavoidable even with the mitigation. Compare RDEIR/SDEIS, Executive Summary at p. ES-43 (Impact WQ-5) with RDEIR/SDEIS, Appendix A, Revised Chapter 8 at pp. 8-217 to 8-219. Similarly, the Executive Summary states that Alternative 4's chloride impacts are less than significant and that no mitigation is proposed, whereas the actual impact analysis in the RDEIR/SDEIS finds a significant impact, identifies revised mitigation measures WQ- 7a through WQ-7d, and concludes that the impact is significant and unavoidable even with the mitigation. Compare RDEIR/SDEIS, Executive Summary at p. ES-43 (Impact WQ-7) with RDEIR/SDEIS, Appendix A, Revised Chapter 8 at pp. 8-226 to 8-230.</p> <p>For electrical conductivity [EC], the Executive Summary correctly reports the determination in the RDEIR/SDEIS that the impacts of Alternatives 2D, 4, 4A and 5A all would be significant, but fails to report that the mitigation identified for Alternative 4 differs from the mitigation identified for the new alternatives. See RDEIR/SDEIS, Executive Summary at p. ES-44 (Impact WQ-11, erroneously summarizing mitigation for EC impacts); Section 4.3.4 at pp. 4.3.4-30 to 4.3.4-31 (EC mitigation for Alternative 4A); and Appendix A, Revised Chapter 8 at pp. 8-244 to 8-246 (EC mitigation for Alternative 4). And whereas the Executive Summary reports that the significant EC impacts of Alternatives 2D, 4, 4A and 5A all would be mitigated to a less than significant level, the actual impact analysis in the RDEIR/SDEIS states that the EC impact of Alternative 4 would be significant and unavoidable even with mitigation. RDEIR/SDEIS, Appendix A, Chapter 8 at p. 8-243.</p> <p>Thus, for three acknowledged significant and unavoidable impacts to water quality near CCWD [Contra Costa Water District] intakes, the mandatory Executive Summary of the RDEIR/SDEIS contradicts the impact analysis that it is supposed to be summarizing. The RDEIR/SDEIS must be revised and recirculated with an Executive Summary that is accurate and does not disavow the significant impacts that are identified in the actual environmental impact analysis.</p>	
2597	42	The RDEIR/SDEIS fails to fulfill its basic function of promoting informed public decision-making and meaningful public participation. The analysis needs to be revised to conform to the requirements of CEQA and NEPA and it needs to be recirculated for another round of public review and comment.	Brochures, factsheets, webinars and videos are other tools the State has employed to educate the public about the development of the Proposed Project and the EIR/EIS process. Representatives from the State and Federal agencies have also held numerous meetings and briefings around the state to educate stakeholders and provide them with critical information about project developments and the EIR/EIS process. Please refer to Master Response 38 related to length and complexity of the environmental document and Master Response 40 for information regarding outreach conducted for California WaterFix (and previously the BDCP). More information on how DWR and Reclamation have developed the project in an open and transparent manner is provided in Master Response 41.
2597	43	[ATT16: Press release titled "New Plan Offers and Effective, Affordable Package of California Water Supply and Bay-Delta Fisheries Solutions."]	Please see Master Response 41 related to the open and transparent process of this project.
2597	44	[ATT17: Slide presentation about Suisun Marsh Salinity Control Gates.]	The comment describes an attachment to the comment letter. The attachment does not raise any additional issues related to the environmental analysis in the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS that are not already addressed in the comment referencing the attachment or the Final EIR/EIS.

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2597	45	[ATT18: Reclamation data on Delta Cross-Channel operations.]	The comment describes an attachment to the comment letter. The attachment does not raise any additional issues related to the environmental analysis in the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS that are not already addressed in the comment referencing the attachment or the Final EIR/EIS.
2597	46	[ATT19: Email with schedule information related to California WaterFix.]	Please see Master Response 38 related to length and complexity of the environmental document.
2597	47	[ATT20: 2013 modeling files from CalSim II and DSM2.]	Please see Master Response 30 related to modeling.
2597	48	[ATT21: 2015 modeling data from CalSim II and DSM2.]	Please see Master Response 30 related to modeling.
2598	1	On behalf of the Natural Resources Defense Council, The Bay Institute, Defenders of Wildlife, Pacific Coast Federation of Fishermen’s Associations, Institute for Fisheries Resources, and San Francisco Baykeeper, we are writing to comment on the California WaterFix / Bay Delta Conservation Plan (“BDCP”) Revised Draft Environmental Impact Report / Supplemental Draft Environmental Impact Statement (“RDEIR/SDEIS”). As you know, many of our organizations have been engaged in the BDCP process since its very beginning, and several years ago requested that the state and federal agencies formally evaluate a Portfolio Alternative (including new conveyance and new South of Delta storage) in the environmental documents prepared under the National Environmental Policy Act (“NEPA”) and California Environmental Quality Act (“CEQA”). Unfortunately, the agencies have refused to analyze and consider such an approach in the RDEIR/SDEIS.	<p>Please see Master Response 4 for more information regarding development of alternatives. The alternatives included in the FEIR/EIS represent a legally adequate reasonable range of alternatives and the scope of the analysis of alternatives fully complies with both CEQA and NEPA. The specific proposals that were considered but ultimately rejected by the Lead Agencies are discussed in Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1. Appendix 3A thoroughly explains why various proposals were not analyzed in the EIR/EIS, including the NRDC Portfolio-Based Proposal, Congressman Garamendi’s Water Plan, and other similar concepts that would require actions that are beyond the scope of the proposed project. Please see Master Response 3 for information on the purpose and need for the proposed project.</p> <p>Please note that Alternative 4A, also known as California WaterFix, has been developed in response to public and agency input and is the new CEQA Preferred Alternative. Alternative 4A is also the NEPA Preferred Alternative, a designation that was not attached to any of the alternatives presented in the 2013 Public Draft EIR/EIS. Alternative 4 remains a potentially viable alternative and is being carried forward in this RDEIR/SDEIS because it represents the original habitat conservation plan/natural community conservation plan (HCP/NCCP) alternative approach, and because it provides an important reference point from which the Alternative 4A, 2D, and 5A descriptions and analyses were developed. If the Lead Agencies ultimately choose the alternative implementation strategy and select an alternative presented in the RDEIR/SDEIS after completing the CEQA and NEPA processes, elements of the conservation plan contained in the alternatives in the 2013 Public Draft EIR/EIS may be utilized by other programs for implementation of the long term conservation efforts.</p>
2598	2	<p>The RDEIR/SDEIS Fails to Provide the Public and Decisionmakers with Clear and Understandable Information, in Violation of NEPA and CEQA</p> <p>One of NEPA’s primary purposes is “to guarantee relevant information is available to the public.” N. Plains Res. Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1072 (9th Cir. 2011). NEPA requires that an EIS’s “form, content and preparation foster both informed decision-making and informed public participation.” Churchill County v. Norton, 276 F.3d 1060, 1071 (9th Cir. 2001); see 40 C.F.R. § 1502.10 (EIS must contain format “which will encourage good analysis and clear presentation of the alternatives including the proposed action”). CEQA provides a similar mandate, requiring that,</p> <p>[a]n adequate EIR must be prepared with a sufficient degree of analysis to provide decisionmakers with information which enables them to make a decision which intelligently takes account of environmental consequences. It must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.</p> <p>Kings Cnty. Farm Bureau v. City of Hanford, 221 Cal. App. 3d 692, 712 (1990) (internal quotation marks and citations omitted); see also Vineyard Area Citizens for Responsible</p>	<p>Revisions made to the Draft EIR/EIS in the RDEIR/SDEIS have been made to meet the letter and spirit of NEPA and CEQA. The RDEIR/SDEIS focuses the readers on revisions made to new alternatives 4A (the NEPA and CEQA preferred alternative), 2D, and 5A. The organization and structure of the RDEIR/SDEIS is summarized in the Executive Summary Document Review Roadmap to assist readers in focusing on those portions of the document they are most interested in and aid in navigating the document. Because the RDEIR/SDEIS is a partial recirculation of the Draft EIR/EIS, only those portions of the Draft EIR/EIS that were modified were included in the RDEIR/SDEIS. For this Final EIR/EIS, the analysis from the RDEIR/SDEIS and Draft EIR/EIS have been combined to disclose the alternatives impacts into one synthesized document organized in the same format as the Draft EIR/EIS. To aid in understanding the Final EIR/EIS, including Chapter 11, Fish and Aquatic Resources, summary comparisons of alternatives have been added to the Executive Summary and at the beginning of each resource chapter. All of the impacts and relevant mitigation measures are summarized in Table ES-8, Summary of BDCP/California WaterFix EIR/EIS Impacts and Mitigation Measures.</p> <p>Regarding the synthesis of potential effects across the various life stages, the BDCP/CWF has reviewed all available life cycle models for all species (see BDCP HCP document Appendix 5G, Fish Life Cycle Models) and determined that only two could be used in this process – IOS and OBAN. Both are winter-run Chinook salmon models. For the EIR/EIS, we analyze effects by impacts. These impacts are combined in summary tables to allow the reader to view all potential impacts across life stages as net effects. CEQA and NEPA do</p>

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		<p>Growth, Inc. v. City of Rancho Cordova, 40 Cal.4th 412, 442 (2007). “The decisionmakers and general public should not be forced to sift through obscure minutiae or appendices in order to ferret out the fundamental baseline assumptions that are being used for purposes of the environmental analysis.” San Joaquin Raptor Rescue Center v. County of Merced, 149 Cal.App.4th 645, 659 (2007). CEQA explicitly requires that an EIR be “organized and written in a manner that will be meaningful and useful to the decisionmakers and to the public.” Pub. Res. Code § 21003(b).</p> <p>As an initial matter, the presentation of the RDEIR is inherently confusing and difficult to navigate, in violation of CEQA and NEPA. Rather than including the project information in one cohesive document, the RDEIR/SDEIS consists of several new sections, dozens of figures that belong in new section 4, and a track-changed version of the earlier Draft EIR/EIS that is contained in a massive Appendix with dozens of sections and separate figures, some of which (chapter 11) does not actually correspond to the DEIS/DEIR. In addition, the RDEIR/SDEIS fails to synthesize potential effects across the various life stages of fish species, such as the upstream effects on salmon, the water quality effects on salmon, and the effects on salmon survival through the Delta. As a result, the document fails to assess or inform the reader of the likely net effects on fish and wildlife species.</p> <p>As discussed throughout our comments, the RDEIR/SDEIS fails dramatically to provide a clear and accurate assessment of likely environmental impacts, and the document must be substantially revised and recirculated in order to provide a clear and accurate assessment of the environmental consequences of the alternatives that is understandable to the public and decisionmakers.</p>	<p>not require that a final ‘net effects’ conclusion be included; only that any significant impacts are identified. The Final EIR/EIS includes a description of the methods used and how CEQA and NEPA conclusions were determined.</p>
2598	3	<p>CEQA and NEPA both require that a reasonable range of alternatives to the proposed project be considered in the environmental review process, including a no project alternative. Cal. Pub. Res. Code §§ 21002, 21061, 21100; tit. 14, Cal. Code Regs. (“CEQA Guidelines”) § 15126.6; 42 U.S.C. § 4332; 40 C.F.R. 1502.14, 1508.25(b). The DEIS/DEIR failed to include a reasonable range of alternatives, particularly because it (a) failed to include a range of alternatives that achieve the standards of the ESA, NCCPA, and other environmental laws, consistent with BDCP objectives, and (b) included no alternatives that include investments in water conservation, recycling, and other local supplies to improve water supply reliability and reduce reliance on the Delta. An alternative that includes both improved flows and investments in local water supplies is likely to result in substantial environmental benefits and improved water supply reliability, consistent with the overarching goals of BDCP/WaterFix, and the failure to include such an alternative violates NEPA and CEQA. See Citizens of Goleta Valley v. Board of Supervisors, 52 Cal.3d 553, 566 (1990) (EIR must consider a reasonable range of alternatives that offer substantial environmental benefits and may feasibly be accomplished).</p>	<p>The lead agencies believe that 2013 Draft EIR/EIS and the 2015 RDEIR/SDEIS are complete in their evaluation of impacts, direct and cumulative, that project description is complete and satisfies the requirements of NEPA, that the project objectives are also precise and complete and satisfy the requirements of CEQA. The 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS.</p> <p>15 alternatives and 3 additional subalternatives were analyzed in the EIR/S and the RDEIR/SDEIS respectively. Four major alignments have been included in the EIR/S: Through-Delta, East of the Sacramento River, West of the Sacramento River, and a Tunnel under the Delta. Many additional proposals by public and private individuals and organizations have also been evaluated and described in Chapter 3 of the BDCP EIR/S and Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1. Regarding development of alternatives for the EIR/EIS, a description of the process the Lead Agencies followed to develop and screen alternatives is provided in Master Response 4. Additionally, please refer to Master Response 6 for additional details on demand management.</p>
2598	4	<p>The RDEIR/SDEIS fails to consider a reasonable range of alternatives for two additional reasons: None of the three new alternatives in the RDEIR/SDEIS (which are the only alternatives that are not intended to be approved as a Habitat Conservation Plan under the ESA and meet the requirements of the Natural Community Conservation Planning Act) improves flows in order to avoid or reduce significant adverse environmental impacts and reduces Delta water exports.</p>	<p>Please note that the BDCP is no longer the preferred alternative. The preferred alternative is now Alternative 4A and no longer includes an HCP.</p> <p>The 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS evaluate a reasonable range of alternatives as required under CEQA and NEPA. Please see Master Response 4 for further discussion of development of project alternatives. Alternative 4A has been developed in response to public and agency input. The EIR/EIS analyzes all alternatives, including Alternative 4A.</p>
2598	5	<p>The RDEIR/SDEIS fails to consider a reasonable range of alternatives for two additional reasons: None of the 3,000 cfs alternatives in the RDEIR/SDEIS include a single tunnel, which</p>	<p>The EIR/EIS evaluates 18 action alternatives that were carefully screened. Information about how the alternatives were screened is provided in Appendix 3A of the Final EIR/EIS. For more information regarding</p>

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		could reduce costs, reduce environmental impacts, and improve water supply.	alternatives to the proposed project please see Master Response 4.
2598	6	The RDEIR/SDEIS Violates NEPA and CEQA Because None of the New Alternatives Include Operations that Result in Improved Environmental Flows and Reduced Delta Exports.	Alternatives 4, 4A and 8 presented in this Final EIR/EIS include operations that increase Delta outflow. All of the alternatives that include North Delta intakes also would improve, to varying extents, movement of flows through the Delta by reducing the reliance on current SWP/CVP pumping which can create reverse flows in the south Delta. Appendix 5E, Supplemental Modeling Requested by the State Water Resources Control Board Related to Increased Delta Outflows is also provided to include supplemental information requested for the proposed petition for change in point of diversion proceedings.
2598	7	<p>The RDEIR/SDEIS includes three new alternatives, none of which utilizes a HCP/NCCP approach, in response to substantial concerns from the fish and wildlife agencies and other stakeholders that preclude adoption of a 50-year long permit and/or substantial regulatory assurances. See RDEIR/SDEIS at 4.1-1. The RDEIR/SDEIS claims that these three new, sub-alternatives... are included to ensure a reasonable range of alternatives are considered that adopt the alternative implementation strategy to achieve federal and state endangered species act compliance using a shorter project implementation period</p> <p>through the "Section 7" process under the federal ESA, and the "Section 2081(b)" process under CESA.</p> <p>RDEIR/SDEIS at ES-4. However, the three new alternatives in the RDEIR/SDEIS (4A, 2D, and 5A) all use operational rules that result in increased water exports, reduced reservoir storage, and reduced Delta outflow. See RDEIR/SDEIS at ES-21, Fig. 4.4.1-1, Fig. 4.4.1-15. The RDEIR/SDEIS fails to consider any alternatives that would reduce Delta exports and improve environmental flows (particularly Delta outflows and upstream reservoir storage), while using this different implementation strategy. Yet these new alternatives result in significant adverse environmental impacts that are disclosed in the RDEIR/SDEIS (as well as many impacts that the documents fail to disclose, as discussed infra).</p> <p>Alternatives that reduce Delta exports and change operational rules could reduce or avoid these impacts resulting from the new proposed alternatives. See RDEIR/SDEIS at ES-48, ES-50.</p>	<p>As a plan prepared to meet the standards of the federal and state Endangered Species Acts, the proposed project is intended to be environmentally beneficial, not detrimental. By establishing a point of water diversion in the north Delta and new operating criteria, the proposed project is designed to improve native fish migratory patterns and allow for greater operational flexibility.</p> <p>The project proposes to stabilize water supplies, and exports could only increase under certain circumstances. Although the proposed project would not increase the overall volume of Delta water exported, it would make the deliveries more predictable and reliable, while restoring an ecosystem in steep decline.</p> <p>15 alternatives and 3 additional subalternatives were analyzed in the EIR/S and the RDEIR/SDEIS respectively. Four major alignments have been included in the EIR/S: Through-Delta, East of the Sacramento River, West of the Sacramento River, and a Tunnel under the Delta. Many additional proposals by public and private individuals and organizations have also been evaluated and described in Chapter 3 of the BDCP EIR/S and Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1. Regarding development of alternatives for the EIR/EIS, a description of the process the Lead Agencies followed to develop and screen alternatives is provided in Master Response 4.</p> <p>As described in Appendix 3A, Section 3A.9.3, of the 2013 Public Draft BDCP EIR/EIS the State Water Resources Control Board prepared a Delta Flow Criteria Report in accordance with the requirements of the Sacramento-San Joaquin Delta Reform Act of 2009. Information from that report included "determinations of flow criteria for the Delta ecosystem to protect public trust resources. The report makes clear, however, that the flow criteria do not consider the balancing of public trust resource protection with public interest needs for water. The flow criteria also did not consider other public trust resource needs such as the need to manage cold-water resources in reservoirs tributary to the Delta. Nonetheless, the flow determinations contained in the Delta Flow Criteria Report, together with recent scientific conclusions of other State and federal agencies, including the Department of Fish and Wildlife, National Marine Fisheries Service, and the Interagency Ecological Program provide a useful guide to establish one side of a reasonable range of alternatives" (State Water Resources Board letter dated April 19, 2011). The information in the flow criteria report was used to inform the development of the BDCP and Alternatives 7 and 8.</p> <p>Please also see Appendix 5E of the Final EIS, Supplemental Modeling Requested by State Water Resources Control Board Related to Increased Delta Outflows.</p>
2598	8	Although at least one other alternative in the RDEIR/SDEIS considers reduced exports and improved environmental flows (Alternative 8), [footnote#1: In addition, Appendix C provides additional modeling, "in order to provide Delta outflow similar to what was included in Alternative 8." RDEIR/SDEIS Appendix C at C-1. However, the RDEIR/SDEIS does not analyze this as an alternative (including analyzing the environmental benefits and impacts), and as discussed infra the document claims that these operational parameters would not be consistent with the purpose and need of the project.] that alternative also includes numerous other conservation measures that fundamentally affect hydrodynamic	The 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS evaluates a reasonable range of alternatives as required under CEQA and NEPA. Please see Master Response 4 for further discussion of development of project alternatives.

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		<p>modeling and the analysis of impacts. For instance, modeling in the BDCP process demonstrated that habitat restoration downstream of the new intakes was a necessary mitigation measure to avoid causing increases in reverse flows downstream of the new intakes, which likely would cause significant environmental impacts. See BDCP presentation to the Delta Science Program January 28, 2013, available online at: http://deltacouncil.ca.gov/sites/default/files/documents/files/DSP_01282014_Presentation_v2.pdf.23 [footnote#2: The RDEIR/SDEIS fails to analyze whether the new alternatives will cause reverse flows below the NDD, in light of the reduction in tidal marsh habitat restoration proposed in these alternatives. Increases in reverse flows below the NDD would constitute a significant adverse impact. The RDEIR/SDEIS must be revised to include this analysis, and it must identify and implement feasible mitigation measures if such significant impacts are found.] [footnote#3: This and all other websites referenced in these comments are hereby incorporated by reference and should be included in the administrative record. In addition, an electronic copy of many of these references is included with the hard copy of these comments that we have submitted. Should the agencies be unable to locate any of the references cited herein, we would be happy to provide electronic or paper copies of such documents.] Alternative 8 used the NCCPA/HCP regulatory approach and included substantial habitat restoration and other conservation measures, and the analysis of impacts of Alternative 8 will not be the same without these other conservation measures. Therefore, the modeling of Alternative 8 would have to be revised before it can be utilized to analyze impacts of the facility and operations without the associated conservation measures (e.g., excluding the habitat restoration and other conservation measures in order to analyze hydrodynamic and water quality impacts). As a result, the RDEIR/SDEIS fails to consider a reasonable range of alternatives that use the CESA/ESA section 7 approach.</p>	
2598	9	<p>In addition, the RDEIR/SDEIS is being used to obtain numerous permits by regulatory agencies, including permits from the SWRCB. The SWRCB is required by law to deny the petition for change in point of diversion if the change would cause unreasonable effects on fish and wildlife. In addition, the SWRCB's review of the change petition must be informed by the 2010 Public Trust Flows Report, and any order approving the change in point of diversion must "include appropriate Delta flow criteria" that are subject to modification over time. Cal. Water Code § 85086(c)(2). Because the RDEIR/SDEIS fails to provide adequate analysis of alternatives, including alternatives that reduce exports and improve environmental flows sufficient for review and adoption of appropriate flow criteria by the SWRCB, it fails to analyze an adequate range of alternatives for the SWRCB's review.</p>	<p>The BDCP/ California WaterFix EIR/EIS evaluates 18 action alternatives. The action alternatives were selected through a three-step screening process and documented in Appendix 3A, Identification of Water Conveyance Alternatives- Conservation Measure 1, of the 2013 Draft EIR/EIS. The lead agencies believe that the EIR/EIS meets CEQA and NEPA requirements to evaluate a range of alternatives. For more information regarding alternatives to the proposed project please see Master Response 4.</p>
2598	10	<p>The RDEIR/SDEIS appears intended to foreclose meaningful consideration of alternatives that reduce Delta exports and improve Delta flows, particularly Delta outflows in the winter and spring, despite the conclusions of the SWRCB's 2010 Public Trust Flows Report and the requirements of the Delta Reform Act. See Water Code § 85086(c)(1). [footnote#4: As discussed supra, the Purpose and Need statement is likewise deficient under CEQA and NEPA because it is inconsistent with the Delta Reform Act's requirement to reduce reliance on the Delta, and because it is unlawfully narrow in an attempt to exclude consideration of alternatives that include water supply projects outside of the Delta, despite the significant adverse environmental impacts that result.] This is further evidenced by statements in the RDEIR/SDEIS stating that water exports could not be reduced below the ranges established in Alternative 4A without subsequent environmental review in a separate CEQA/NEPA document. See RDEIR/SDEIS at ES-38, 4.1-19 to 4.1-20, 4.1-31. [footnote #5: As</p>	<p>Appendix 3A of the 2013 Draft EIR/EIS provides a detailed account of how the water conveyance alternatives and operational criteria for evaluation in the EIR/EIS were selected. Please see Master Response 31 for a discussion of the SWRCB flow criteria. The SWRCB's flow criteria recommendations and how they were used to inform the planning process are discussed in detail in the 2013 Draft EIR/EIS Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure I, and in Appendix 3I, BDCP Compliance with the 2009 Delta Reform Act.</p> <p>For more information regarding alternatives to the proposed project please see Master Response 4.</p>

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		discussed infra, this language also attempts to provide regulatory assurances that are unlawful under CESA and other laws.] To the extent that this language in the RDEIR/SDEIS and the range of alternatives considered in the documents prevent regulatory agencies like CDFW or the SWRCB from adopting conditions that further reduce water exports and diversions by the SWP and CVP as compared to Alternative 4A, the RDEIR/SDEIS fails to consider a reasonable range of alternatives.	
2598	11	The RDEIR/SDEIS Violates NEPA and CEQA Because None of the Alternatives Includes a 3,000 cfs Capacity Single Tunnel Alternative, which could reduce costs, reduce environmental impacts, and improve water supply. The RDEIR/SDEIS also fails to consider a reasonable range of alternatives because each of the 3,000 cfs facilities considered in the RDEIR/SDEIS utilizes dual bore tunnels, see RDEIR/SDEIS at 4.1-29, despite DWR's admission that the capital cost for a single tunnel 3,000 cfs capacity project is approximately \$2.2B less than a dual tunnel 3,000 cfs project and \$5.9B less than a 9,000 cfs alternative (in 2012 dollars). See BDCP Blog, November 12, 2013, online at: http://baydeltaconservationplan.com/2015news/2010-2014news/2012-2014bdcpblog/13-11-12/Revised_Capital_Cost_for_3_000_cfs_Single_Bore_Tunnel.aspx . NRDC and other stakeholders requested analysis of a single tunnel 3,000 cfs facility in comments submitted nearly 3 years ago (in early 2013), yet the agencies have refused to analyze such an alternative in the DEIS/DEIR or the RDEIR/SDEIS. Because such an alternative is feasible and could result in lower environmental impacts (by using the cost savings associated with a single tunnel facility to invest in local and regional water supplies to offset reductions in diversions from the Delta), the failure to consider such an alternative violates NEPA and CEQA.	The BDCP/ California WaterFix EIR/EIS evaluates 18 action alternatives. The action alternatives were selected through a rigorous three-step screening process and documented in Appendix 3A, Identification of Water Conveyance Alternatives- Conservation Measure 1, of the 2013 Draft EIR/EIS. The lead agencies believe that the EIR/EIS meets CEQA and NEPA requirements to evaluate a range of alternatives. For more information regarding alternatives to the proposed project please see Master Response 4. The broad range of alternatives included in the EIR/EIS, with varying degrees of impacts, reflects a commonly used type of "bookend" analysis, referring to a range of decision-making options (alternatives) consisting of a continuum of choices. For example, under the "bookend" approach utilized by the Lead Agencies for the operational alternatives, the EIR/EIS evaluated alternatives that ranged from higher export deliveries at one end, and reduced exports and higher outflows to protect fish species at the lower end. (See Final EIR/EIS Appendix 3A, Section 3A.9 and Chapter 3, Section 3.2.1.4.) By analyzing various alternatives covering the entire spectrum of impacts, the alternatives included in the Draft EIR/EIS, RDEIR/SDEIS and Final EIR/EIS represent an appropriate range of alternatives and will permit the Lead Agencies to make a reasoned choice among alternatives. Thus, the range of alternatives included in the EIR/EIS fully complies with CEQA and NEPA. For additional information regarding the formulation and selection of alternatives for evaluation in the EIR/EIS, please see Master Response 4.
2598	12	The purpose and need statement in the DEIS/DEIR is unlawful because it unreasonably limits the range of alternatives, excludes compliance with the Delta Reform Act, and misstates the requirements of the NCCPA. Unfortunately, the changes to purpose and need statement and the revised project objectives in the RDEIR/SDEIS contain similar flaws and must be revised.	The relationship of the proposed project to the Delta Reform Act is described in Master Response 31. The alternatives included in the Draft EIR/EIS, RDEIR/SDEIS, and Final EIR/EIS represent a legally adequate reasonable range of alternatives and the scope of the analysis of alternatives fully complies with both CEQA and NEPA. For additional information regarding the project objectives/purpose and need as well as formulation and selection of alternatives for evaluation in the EIR/EIS, please see Master Responses 2, 4 and 5.
2598	13	The RDEIR/SDEIS states that state policy for the Delta is summarized in the Delta Reform Act, but the document only references portions of the Delta Reform Act, and fails to reference state policy to reduce reliance on the Delta. RDEIR/SDEIS at ES-5, 1-7. The RDEIR/SDEIS text and the purpose and need statement must be revised to comply with state policy established by the Delta Reform Act, which states: The policy of the State of California is to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency. Each region that depends on water from the Delta watershed shall improve its regional self-reliance for water through investment in water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved regional coordination of local and regional water supply efforts. Cal. Water Code § 85021. The project objectives in the RDEIR/SDEIS are improperly narrow,	As a plan prepared to meet the standards of the federal and state Endangered Species Acts, the proposed project is intended to be environmentally beneficial, not detrimental. By establishing a point of water diversion in the north Delta and new operating criteria, the proposed project is designed to improve native fish migratory patterns and allow for greater operational flexibility. The project proposes to stabilize water supplies, and exports could only increase under certain circumstances. Water deliveries from the federal and state water projects under a fully-implemented Alternative 4A are projected to be about the same as the average annual amount diverted in the last 20 years. Although the proposed project would not increase the overall volume of Delta water exported, it would make the deliveries more predictable and reliable, while restoring an ecosystem in steep decline. From a Statewide perspective, the water agencies throughout the state have developed portfolios to provide the necessary water for their region. The solution to the State's water problem is multi-faceted and will include multiple actions throughout the state. Ways to reduce demand are in process at this time. Various programs for storage, reuse and added reliability are being evaluated and implemented. Those

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		focused solely on securing water supply from the Delta, despite this state policy of reducing reliance on water supply from the Delta and despite the feasibility of investments in local and regional water supplies to offset reductions in water exports from the Delta. RDEIR/SDEIS at 1-8. Similarly, the purpose and need statement explicitly references the Delta Reform Act as the basis for the project purpose and need, but ignores this requirement of the Act. RDEIR/SDEIS at 1-9. In both cases, the project objective or purpose to “restore and protect” SWP and CVP water deliveries, and the failure to consider any investments in regional and local water supplies in the RDEIR/SDEIS, is antithetical to this requirement of the Delta Reform Act. In addition to revising the purpose and need and project objectives, the RDEIR/SDEIS must be revised to consider alternatives that include investments in local and regional water supplies to reduce reliance on water from the Delta, while also improving environmental flows to meet the goals and requirements of the Delta Reform Act and other state and federal laws, including CESA, ESA, Porter- Cologne Water Quality Act, and the Clean Water Act.	actions do not provide the entire solution; therefore, the project is being proposed as one of the pieces of the overall program. However, the neither State nor Federal government has the authority to dictate action by the various water entities. Therefore, improving regional self-reliance is being conducted to the extent feasible by local water contractors. Since this is being done by others and DWR/Reclamation cannot dictate these measures, this alternative is not feasible to meet the purpose and need. Please refer to Master Response6 (Demand Management) and the Final EIR/EIS, Appendix 1C Demand Management Measures for additional information. See Master Response 31 for more information about the Delta Reform Act.
2598	14	The RDEIR/SDEIS states that the fundamental purpose of the project includes “improvements to the SWP system in the Delta necessary to restore and protect ecosystem health.” RDEIR/SDEIS at 1-7. Similarly, chapter 4 asserts that, “the RDEIR/SDEIS considers additional sub-alternatives that meet the goal of restoring the ecological function of the Delta and improving water supply reliability.’ RDEIR/SDEIS at 4.1-1. Alternative 4A and other new alternatives in the document fail to achieve this fundamental purpose, particularly because they refuse to consider any alternatives that reduce water exports from the Delta in order to improve environmental flows, and because these alternatives are likely to result in declining populations of native fisheries and deteriorating ecological health of the estuary (reduced turbidity, increased harmful algal blooms, higher salinity, etc.). The best available science demonstrates that improvements in Delta outflows and other environmental flows are necessary to achieving restoration of the Delta ecosystem and sustaining native fish and wildlife, including ESA and CESA listed species such as Longfin Smelt. See, e.g., SWRCB 2010.	The 2013 Draft EIR/EIS and RDEIR/SDEIS evaluate a reasonable range of alternatives to meet the project’s objectives and purpose and need as required under CEQA and NEPA. Please see Master Response 4 for further discussion of development of project alternatives. Also, please see Master Response 3 for more information regarding the project purpose and needs, and Master Response29 for information on ESA compliance. Impacts on Delta outflows (fresh water flowing to the Bay) are not significant. The incremental changes in Delta outflow between Alternative 4A and Existing Conditions would be a function of both the facility and operations assumptions (including north Delta intakes capacity of 9,000 cfs, less negative OMR flow requirements, enhanced spring outflow and/or Fall X2 requirements) and the reduction in water supply availability due to increased north of Delta urban demands, sea level rise and climate change. Results for the range of changes in Delta Outflow under Alternative 4A are presented in more detail in Appendix 5A of the Final EIR/EIS EIR/S Modeling Technical Appendix For a more detailed response regarding impacts beneficial uses of water, please see Master Response 34.
2598	15	The purpose and need statement and project objectives are impermissibly narrow because the RDEIR/SDEIS admits they exclude alternatives that increase Delta outflow while reducing water exports, despite the objective and project purpose of restoring the Delta ecosystem. In Appendix C, the RDEIR/SDEIS asserts that increases in Delta outflow that reduce water exports are not consistent with the purpose and need statement and project objectives: “This evaluation was conducted primarily to consider increases in outflow, without consideration of water supply benefits, and as such, an alternative that included this operational scenario would likely not meet the project objectives or purpose and need statement.” RDEIR/SDEIS Appendix C at C-1. However, Appendix C also admits that, “[g]enerally, for water supply related effects (effects to agricultural resources, groundwater resources, etc.), the impacts are equal to or less than the impacts disclosed under Alternative 8.” RDEIR/SDEIS Appendix C at C-38. It is inconsistent to exclude this alternative when the impacts are equal or less to those under Alternative 8, unless the agencies are not meaningfully considering Alternative 8. As discussed in these comments, our Prior Comments, the SWRCB’s 2010 Public Trust Flows report [footnote#6: The Delta Reform Act specifically requires that this flow report be prepared for “the purpose of informing planning decisions for the Delta Plan and the Bay Delta Conservation Plan,” Cal. Water Code § 85086(c)(1), and that the SWRCB’s consideration of a petition to change the point of diversion include “appropriate flow	The FEIR/EIS is complete in the evaluation of impacts, direct and cumulative, that project description is complete and satisfies the requirements of NEPA, that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies agree that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS. As noted in Appendix C of the 2015 RDEIR/SDEIS, the SWRCB is a responsible agency with a role in the project’s approval. As with many Responsible Agencies, the State Water Board’s consideration of the proposed project is not limited to the scope of the CEQA analysis and the State Water Board water right approval process may require consideration of issues beyond that required in CEQA. Therefore, at the request of State Water Board staff, supplemental modeling at year 2025 (Early Long Term [ELT]) was conducted to evaluate an operational scenario that provides higher Delta outflows than Alternative 4A, while including model assumptions that avoid impacts to fish and aquatic resources attributable to reductions in cold water pool storage and flow modifications under Alternative 8 and other higher outflow scenarios analyzed in the Draft EIR/EIS. For more information about this supplemental modeling and analysis, please see Appendix 5E, Supplemental Modeling Requested by the State Water Resources Control Board Related to Increased Delta Outflows. For more information regarding public trust please see Master Response 13. For more information regarding the proposed project’s compliance with the Delta Reform Act please see Master Response 31. Also see

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		<p>criteria” that are informed by the 2010 Public Trust flows report, id. at § 85086(c)(2).] (“SWRCB 2010”), and numerous other scientific studies and reports, the best available science demonstrates that increases in Delta outflow during key times of the year are necessary to achieve the Project’s stated purpose and need / objectives, the Delta Reform Act, and requirements of other state and federal laws including CESA, ESA, Porter-Cologne Water Quality Control Act, Clean Water Act. As a result, the purpose and need statement and project objectives are inconsistent with other state and federal laws, and impermissibly exclude reasonable and feasible alternatives to meet the requirements of these laws. The purpose and need statement and project purposes in the RDEIR/SDEIS must be revised to require compliance with state policy to reduce reliance on the Delta as required by the Delta Reform Act, and the RDEIR/SDEIS revised to consider alternatives that include investments in local and regional water supplies and improvements in Delta outflow and other environmental flows.</p>	<p>Appendix 3I and Appendix 3J in the Final EIR/EIS.</p>
2598	16	<p>The Baseline Used in the RDEIR/SDEIS Misleads the Public and Decisionmakers by Understating the Likely Adverse Environmental Impacts of the New Alternatives</p> <p>Both NEPA and CEQA require that the Project be analyzed against the existing environmental conditions (the “environmental baseline”), in order that the Project’s environmental impacts can be meaningfully analyzed and compared to alternatives. 40 C.F.R. § 1502.15; CEQA Guidelines § 15125(a); see County of Amador v. El Dorado County Water Agency, 76 Cal.App.4th 931, 952 (1999); Neighbors for Smart Rail v. LA County Metropolitan Transit Authority, 57 Cal. 4th 310, 315 (2013).</p> <p>As we noted in our Prior Comments, the DEIS/DEIR used an illegal baseline that understates the likely adverse environmental impacts of the draft plan and alternatives, because it failed to include in the CEQA/NEPA baseline: (a) floodplain habitat restoration in the Yolo Bypass and tidal marsh habitat restoration in the Delta that was required under existing biological opinions; and, (b) the Fall X2 RPA action required under the Delta Smelt biological opinion. In the RDEIR/SDEIS, the agencies have revised the No Action Alternative for the three new alternatives, and the RDEIR/SDEIS appropriately includes the required habitat restoration under the existing biological opinions in that baseline for its analysis of the impacts of the three new alternatives. However, the RDEIR/SDEIS still fails to include the Fall X2 RPA Action in the baseline for any of the alternatives, and the RDEIR/SDEIS fails to include the required habitat restoration in the CEQA baseline. Equally important, the RDEIR/SDEIS now uses a different baseline for the three new alternatives from the baseline used for the other alternatives, because the RDEIR/SDEIS does not update the baseline and environmental analysis for the alternatives previously considered in the DEIS/DEIR. As a result of these flaws, the RDEIR/SDEIS fails to accurately inform the reader of the likely adverse environmental impacts of the alternatives, and the document must be revised to include a lawful baseline for all of the alternatives.</p>	<p>For more information about baselines used in the impact analysis, please refer to Master Response 1.</p>
2598	17	<p>In the RDEIR/SDEIS, the baseline for comparison of the three new alternatives under NEPA (the No Action Alternative) includes the floodplain habitat restoration and tidal marsh habitat restoration required under the 2008 and 2009 biological opinions. RDEIR/SDEIS at ES-8, 4.1-15, 4.1-23, 4.1-25, 4.1- 31, 4.1-42 to -43; 4.2-1. As the RDEIR/SDEIS makes clear, these actions “would be assumed to occur as part of the No Action Alternative because they are required by the existing BiOps.” Id. at 4.1-31.</p> <p>Elsewhere, the RDEIR/SDEIS admits that, “Because Alternatives 4A, 2D, and 5A do not</p>	<p>The No Action Alternative for new alternatives presented in the RDEIR/SDEIS includes restoration and tidal marsh habitat restoration required under the 2008 and 2009 biological opinions because Alternatives 4A, 2D and 5A do not include these actions that would occur with or without the proposed action. No revisions to the No Action Alternative Late Long Term (LLT) used as a NEPA point of comparison for the BDCP alternatives is needed because the BDCP includes these Yolo Bypass and restoration actions. Therefore, to capture the potential effects of these BDCP actions in the impact analyses, they were excluded from the description of the No Action Alternative LLT. The impacts for these BDCP alternatives therefore are not understated as indicated in this comment. No revisions to the No Action Alternative LLT or BDCP</p>

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		<p>include these Yolo Bypass and habitat restoration actions they are now assumed for the No Action Alternative (ELT); they are actions that would be required to occur with or without implementation of Alternatives 4A, 2D, or 5A.” RDEIR/SDEIS at 4.2-1 (emphasis added). This approach of including required habitat restoration in the no action alternative / environmental baseline is correct under NEPA, and as discussed below, is also required under CEQA.</p> <p>However, the RDEIR/SDEIS does not revise the No Action Alternative for the alternatives previously considered in the DEIS/DEIR to include this required habitat restoration, nor does it revise the analysis of environmental impacts. See, e.g., RDEIR/SDEIS Appendix A at 11-96, 11-243, Appendix 3D. Despite acknowledging that these actions are likely and required to occur absent BDCP, the RDEIR/SDEIS fails to include them in the environmental baseline for the alternatives previously considered in the DEIS/DEIR. As a result, the RDEIR/SDEIS overstates the environmental benefits and understates the environmental impacts of these earlier alternatives, as discussed in our prior letter. It also means that the environmental impacts of the new alternatives cannot be compared to the environmental impacts of the prior alternatives, because the impacts of the different alternatives are compared against different baselines. The inability to compare the environmental impacts of the alternatives undermines and is inconsistent with CEQA and NEPA.</p> <p>The RDEIR/SDEIS currently includes three separate baselines: the CEQA baseline, the NEPA baseline for the new alternatives that includes required habitat restoration, and the NEPA baseline for the prior alternatives that excludes required habitat restoration. This is incredibly confusing to the reader, biases the analyses, and makes it impossible to accurately compare the impacts of different alternatives, fundamentally undermining the purposes of NEPA and CEQA. In order to comply with CEQA and NEPA, the RDEIR/SDEIS must be revised to include a single baseline for analysis of all of the alternatives, which includes required habitat restoration and other required protections for fish and wildlife in the No Action Alternative and environmental baseline.</p>	<p>alternatives analyses have been made related to this comment. Please refer also to Master Response 1 for more information about the environmental baselines used in the EIR/EIS.</p>
2598	18	<p>As we noted in our prior comments, the DEIS/DEIR violates CEQA by excluding required habitat restoration and the Fall X2 action from the baseline for comparison of impacts. Even though the RDEIR/SDEIS revised the no action Alternative for the analysis of impacts of the new alternatives, the document did not revise the baseline for consideration of environmental impacts under CEQA. RDEIR/SDEIS at 4.1-42. As a result, the RDEIR significantly understates the environmental impacts of implementing the alternatives and misleads the public, contrary to the requirements of CEQA.</p> <p>Substantial evidence demonstrates that the use of the existing baseline conditions, which excludes mandatory permit conditions imposed to protect the environment, misleads the public and decisionmakers as to the actual environmental impacts, and that in this case the environmental impacts should be assessed against the no action alternative. See <i>Communities for a Better Environment v. South Coast Air Management District</i>, 48 Cal.4th 310, 322-326, 328 (2010); <i>Neighbors for Smart Rail v. Exposition Metro Line Const. Authority</i>, 57 Cal.4th 439, 448-449, 451-453 (2013). For instance, as the Supreme Court wrote in <i>Neighbors for Smart Rail</i>,</p> <p>Interpreting the statute and regulations in accord with the central purpose of an EIR— “to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment” (§ 21061)—we find nothing precluding an agency from employing, under appropriate factual circumstances, a</p>	<p>This comment is an opinion related to the definition of existing conditions in the EIR/EIS. The rationale for defining existing conditions as the conditions at the time of the notice of preparation is fully explained in Chapter 4, Approach to the Environmental Analysis, Section 4.2.1.1. The existing conditions discussion states in part:</p> <p>In particular, DWR did not assume full implementation of a particular requirement of the delta smelt BiOp, known as the “Fall X2” salinity standard, which in certain water-year types can require large upstream reservoir releases in fall months of wet and above normal years to maintain the location of “X2” at approximately 74 or 81 river kilometers inland from the Golden Gate Bridge. As of spring 2011, when a lead agency technical team began a new set of complex computer model runs in support of this EIR/EIS, DWR determined that full implementation of the Fall X2 salinity standard as described in the 2008 USFWS BiOp was not certain to occur within a reasonable near-term timeframe because of a recent court decision and reasonably foreseeable near-term hydrological conditions. As of that date, the United States District Court has not yet ruled in litigation filed by various water users over the issue of whether the delta smelt BiOp had failed to sufficiently explain the basis for the specific location requirements of the Fall X2 action, and its implementation was uncertain in the foreseeable future. This uncertainty, together with CEQA’s focus on Existing Conditions, led DWR to the decision to use a CEQA baseline without the implementation of the Fall X2 action. However, for the purposes of the NEPA comparison, which uses a different method for assessing environmental effects of the action alternatives, the Fall X2 action is included in the NEPA point of comparison as discussed below in the No Action Alternatives section.</p>

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		<p>baseline of conditions expected to obtain at the time the proposed project would go into operation.... For a large-scale transportation project like that at issue here, to the extent changing background conditions during the project's lengthy approval and construction period are expected to affect the project's likely impacts, the agency has discretion to consider those changing background conditions in formulating its analytical baseline. Contrary to Justice Baxter's view (conc. & dis. opn. of Baxter, J., post, 160 Cal.Rptr.3d at p. 32, 304 P.3d at p. 525), such a date-of-implementation baseline does not share the principal problem presented by a baseline of conditions expected to prevail in the more distant future following years of project operation—it does not omit impacts expected to occur during the project's early period of operation.</p> <p>Neighbors for Smart Rail, 57 Cal. 4th at 453.</p> <p>The use of physical conditions existing at the time of the notice of preparation is inappropriate and misleading for assessing environmental impacts under CEQA in this case for at least three reasons: first, because substantial improvements in physical conditions were required to be implemented under biological opinions adopted in 2008 and 2009 (Fall X2 RPA and habitat restoration); second, because the project will not be operational until at least 2029, and operational impacts will continue for many years thereafter; and third, because climate change will further impact water supply, fisheries, and other users as compared to the conditions that existed in 2009. The CEQA guidelines state that such conditions “will normally constitute the environmental baseline,” but the Courts have held that deviations from the conditions at the time of the NOP can be appropriate or required, depending on the circumstances.</p> <p>As the RDEIR/SDEIS explicitly explains, the habitat restoration measures “would be assumed to occur as part of the No Action Alternative because they are required by the existing BiOps.” RDEIR/SDEIS at 4.1-31. These actions are reasonably expected to occur in the future because they are required by the biological opinions and are being implemented through separate permitting processes. See 78 Fed. Reg. 14117 (March 4, 2013) (Notice of intent and scoping meetings for Draft Environmental Impact Statement / Draft Environmental Impact Report for Yolo Bypass Salmonid Habitat Restoration and Fish Passage, California). Similarly, the Fall X2 RPA action is reasonably expected to occur in the foreseeable future. This element of the reasonable and prudent alternative in the 2008 FWS biological opinion is required to be implemented under the ESA and the CDFW consistency determination, the federal courts have fully upheld the biological opinion under the ESA, and the Fall X2 RPA action was partially implemented in 2011. None of the stated reasons in the DEIS/DEIR justify excluding the Fall X2 RPA action from the CEQA baseline.</p> <p>In order to accurately assess environmental impacts under CEQA, the RDEIR must be revised to use a baseline that includes required habitat restoration and the Fall X2 RPA action. Doing so also helps avoid the confusion of having different baselines for NEPA and CEQA purposes, consistent with CEQA’s primary function of accurately informing the public and decisionmakers of likely environmental impacts.</p>	<p>The environmental effects of the action alternatives are evaluated fairly against defined existing and No Action conditions that received full consideration by DWR and Reclamation. Please also refer to Master Response 1, which addresses the environmental baseline presented in this Final EIR/EIS.</p>
2598	19	<p>The RDEIR/SDEIS also admits that climate change is likely to result in significant changes to air and water temperatures and hydrology, which are likely to be adverse to numerous fish species. See, e.g., RDEIR/SDEIS at 5-79, 5-105, 5-112, 5-114, 5-115. However, despite the fact that the environmental baseline under CEQA excludes the effects of climate change, the RDEIR/SDEIS excludes the effects of climate change and sea level rise in making determinations of what constitute significant environmental impacts under CEQA. As a</p>	<p>Please refer to Master Response 1 for more information about the environmental baselines used in the EIR/EIS and Master Response 19 for more information about climate change.</p>

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		<p>result, the RDEIR/SDEIS fails to disclose the likely impacts of the effects of climate change in combination with the alternatives on fisheries, water quality, and other environmental parameters. By ignoring the effects of climate change and sea level rise in making these determinations (even in the cumulative impacts analysis), the RDEIR/SDEIS fails to disclose significant environmental impacts that are likely to occur. Similarly, by including climate change in the environmental baseline under NEPA, the RDEIR/SDEIS effectively ignores the effects of climate change in making determinations of significant impacts because those effects are already included in the baseline used for comparison. As a result, the reader is misled as to the likely impacts compared to conditions today.</p>	
2598	20	<p>In revised chapter 11 (Fisheries), the RDEIR/SDEIS asserts that, “DWR has focused in its CEQA analysis primarily on the contribution of the action alternatives, as opposed to the impacts of sea level rise and climate change, in assessing the significance of the impacts of these action alternatives.” RDEIR/SDEIS Appendix A at 11-95. [footnote#7: All references to the revised version of Chapter 11 in Appendix A of the RDEIR/SDEIS are to the purported redline version that is available online at: http://baydeltaconservationplan.com/RDEIRS/Ap_A_Rev_DEIR-S/11_Fish.pdf.]</p> <p>Similarly, in the analysis of impacts on Microcystis, the RDEIR/SDEIS states that,</p> <p>Below, residence times under Alternative 4 is compared to residence times under the No Action Alternative to remove the effect of climate change and sea level rise, thereby revealing the effect due to CM1 (i.e., operations) and the effect of the CM2 and CM4 restoration areas, which were accounted for in the modeling performed for CM1.</p> <p>RDEIR/SDEIS Appendix A at 8-302. And in Chapter 5 the RDEIR/SDEIS repeatedly concludes that the alternatives will not result in significant impacts, despite acknowledging that climate change will result in adverse effects. See, RDEIR/SDEIS at 5-79, 5-105, 5-112, 5-114, 5-115. For instance, on page 5-105 the RDEIR/SDEIS admits that the effects of climate change are excluded when making the cumulative impact determinations:</p> <p>However, the actual projects and programs that are considered as part of the cumulative analysis would not cumulatively cause significant negative changes to the entrainment of covered fish species, or on the spawning, rearing, and migration habitat conditions for these species beyond those changes presented above in the analysis of action alternatives (when climate change is factored out).</p> <p>RDEIR/SDEIS at 5-105 (emphasis added). Similarly, the RDEIR/SDEIS asserts that Alternative 2A will result in a 42% increase in the mortality of winter-run Chinook salmon eggs in Critically Dry years in the Late Long Term as compared to existing conditions, yet concludes this impact is less than significant under NEPA and CEQA. RDEIR/SDEIS Appendix A at 11-128 to 11-130. And the RDEIR/SDEIS seems to ignore the effects of climate change in making cumulative impact determinations by asserting that an alternative would not contribute to cumulative impacts, yet fails to disclose that the overall effect would still be significant and adverse. See RDEIR/SDEIS at 1-115. The RDEIR/SDEIS must be revised to consider the effects of climate change when making determinations of what constitutes significant impacts under CEQA.</p>	<p>Please refer to Master Response 1 for more information about the environmental baselines used in the EIR/EIS and Master Response 19 for more information about climate change. Chapter 4, Approach to the Environmental Analysis, also presents the approach for project impacts and cumulative analyses.</p>
2598	21	<p>With respect to NEPA, the RDEIR/SDEIS includes the effects of climate change in the No Action Alternative (“NAA”). Although the RDEIR/SDEIS admits in a few cases that the No Action Alternative will result in significant adverse impacts, at least in part as a result of</p>	<p>Regarding water temperature modeling, due to limitations of the available modeling tools and the limited ability to accurately predict future conditions (including real-time operational adjustments), the model outputs are intended to be used on a comparative basis and not used as predictive tools. Comparisons to</p>

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		<p>climate change, it reaches a contrary conclusion for the action alternatives by effectively ignoring the effects of climate change (because they are already included in the baseline). This is improper, and as a result, the RDEIR/SDEIS fails to disclose significant adverse environmental impacts that are likely to result from the alternatives in combination with climate change. As a result, the RDEIR/SDEIS misleads the public to believe that fish and wildlife populations will not see significant impacts, yet native fisheries will likely see substantial population declines and increased threats as a result of the alternatives in combination with the effects of climate change. For example, the DEIR/DEIS appendix reveals that temperatures under the NAA and various project alternatives will exceed those needed to support viable populations of Chinook salmon, steelhead, and/or sturgeon species on the Sacramento, American, Feather, and Stanislaus Rivers, where these species currently spawn and rear. [footnote#8: 8 Despite concerns raised in our Prior Comments with CALSIM II modeling of temperature impacts (see esp. pp. 56- 64; 68-70) and concerns raised by others, the RDEIR/SDEIS continues to rely on the upstream temperature projections generated previously. See DEIR/DEIS Appendix 11D.] To illustrate, under the NAA, monthly average temperatures indicate that daily average temperatures will exceed the critical 56oF daily average threshold [footnote#9: 9 US EPA (2003) recommends a temperature standard for Chinook Salmon incubation that is 55oF as an average of daily maximum temperatures. The maximum daily temperature is always higher than the average of that day; thus, an average monthly temperature of 56oF (as presented in the DEIS/DEIR temperature appendix, 11D) indicates that daily average temperatures will exceed this limit frequently and daily maximum temperatures will be much higher than US EPA recommends.] for incubating Chinook salmon:-Throughout the entire winter-run Chinook salmon spawning range (i.e., downstream of Keswick Dam [footnote#10: Keswick Dam is the upstream limit of winter-run Chinook salmon spawning and during the summer through much of October, Sacramento River flows gain temperature downstream of this point. So these results reveal that the entire winter-run Chinook salmon spawning habitat will experience excessive temperatures that produce lethal and negative sub-lethal effects for a large portion of their incubation period.]) in most water year types during September, all water years during October, and in many water years during August and November. Temperatures projected under the NAA (and those that are similar or exceed the NAA under project alternatives) for the Sacramento River below Keswick will also have severe negative consequences for fall-run Chinook salmon, spring-run Chinook salmon, and steelhead that attempt to migrate into, hold, spawn, or incubate in the Sacramento River during these months. See, e.g., RDEIR/SDEIS Appendix 11D at 11D-255.-In the Feather River (e.g., the low-flow channel) in every month from August-November. Id. at 11D-291. Such temperatures will have devastating consequences to spring-run and fall-run Chinook salmon and steelhead that attempt to spawn in this river.-In the American River during August-November; this would eliminate successful spawning of fall-run Chinook salmon on the American River during most of the species' spawning season on that river. Id. at 11D-311.-In the Stanislaus River for almost all of the fall-run Chinook salmon spawning season. Id. at 11D- 323. Furthermore, monthly average temperatures anticipated under the NAA on the Feather River (in July and August of Critically Dry Years), the American River (during most of August, September, and October), and the Stanislaus River (from August through November) equal or exceed those that are lethal for migrating and holding adult Chinook salmon and steelhead and/or those that would impede migration of adult salmonids to their spawning grounds.[footnote#11: 11 Even short duration exposures to temperatures 69.8°F -71.6°F are reported to be lethal for adult Chinook salmon and steelhead during migration -- slightly lower temperatures have potentially severe lethal and sub-lethal effects (USEPA 1999, 2003; Richter and Kolmes 1995).] This would result in</p>	<p>actual thresholds should not be done without also comparing exceedance of the threshold under another scenario, such as a baseline or other alternative. In other words, the models are limited in their ability to predict an actual value for a temperature and it is inappropriate to use them in this way without comparing results to another scenario. Please see Appendix 5A for more information on limitations of the physical modeling tools used in this analysis. Regardless of their limitations, these models were developed by fisheries biologists and hydrodynamic modeling experts using the best available science at the time, and were deemed sufficient to make comparisons across project alternatives.</p>

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		elimination of a significant fraction of the fall-run Chinook salmon and steelhead spawning period on each of these rivers and, cumulatively, throughout the Central Valley.	
2598	22	<p>Although the DEIR/DEIS and the RDEIR/SDEIS portray the temperature modeling results as useful only for comparative purposes, the modeled temperatures are likely to represent real-world impacts because:</p> <ul style="list-style-type: none"> • Temperature results are presented as monthly averages, meaning they underestimate the daily average and daily maximum temperatures that will lead to the lethal and negative sub-lethal effects; • Current actual temperatures on major Central Valley Rivers are already near, at, or above critical thresholds, so projections of increased relative temperatures indicate that severe negative impacts are likely (regardless of the precision of those projections) • Negative effects of high temperatures on any fish life-stage generally cannot be undone by “improved” temperatures at other times during development (and certainly not in other years; e.g., as a multi-year average) – for instance, egg mortality cannot be undone by better temperatures later in the year. <p>In cases where temperatures under the NAA are projected to exceed thresholds for lethal and negative sub-lethal effects on a monthly average basis, this indicates that operations under the NAA will require substantial mitigation (e.g., reservoir reoperation). Project alternatives that produce similar or worse temperature outcomes will also require significant modifications to avoid severe and potentially catastrophic results to covered species.</p>	<p>Under some cases, it may be possible to use these temperatures as real-world impacts, but the models cannot include all of the aspects that drive water temperatures. Therefore, the authors of Chapter 11 followed the guidance provided by the modeling experts and did the analyses as comparative only.</p> <p>As shown in Appendix 11D, Sacramento River Water Quality Model and Reclamation Temperature Model Results Utilized in the Fish Analysis, in the EIR/EIS, there are periods of time under the action alternatives when water temperatures in the Sacramento, Feather, and American rivers would be greater than under the Existing Conditions. However, water temperatures in these streams generally would be similar or lower under the action alternatives than under the No Action Alternative except during summer months when water is not being released from SWP and CVP reservoirs for Delta export. These comparisons do not include effects of climate change and sea level rise because the same assumptions for climate change and sea level rise are included in the No Action Alternative and the action alternatives.</p> <p>The comparison of the action alternatives with Existing Conditions does include both the changes due to the alternative and the changed conditions caused by climate change and sea level rise. The effects of climate change and sea level rise would occur with or without the project, and, therefore, are not attributed to the project and do not require mitigation under the project.</p>
2598	23	<p>Reclamation has prepared draft and/or final environmental documents (including quantitative modeling) for several projects, such as the Shasta Lakes Water Resources Investigation and Upper San Joaquin River Storage Investigation, which will likely cause cumulatively significant environmental impacts in combination with the WaterFix by reducing flows into and through the Delta, impacting water quality (including salinity) and adversely affecting the survival of salmon, Delta Smelt, Longfin Smelt, and other fisheries. Yet inexplicably, the RDEIR/SDEIS fails to include any modeling or quantitative analysis of the cumulative impacts of these projects in combination with the WaterFix.¹² This is in error. In addition, as discussed above, the RDEIR/SDEIS excludes the effects of climate change in assessing cumulative impacts under CEQA. As a result, the RDEIR/SDEIS fails to adequately disclose the likely cumulative impacts of the new alternatives on fisheries, water quality, and the environment.</p>	<p>The RDEIR/SDEIS included revisions to Appendix 3D to include the Shasta Lake Water Resources Investigation and the Upper San Joaquin River Basin Storage Investigation in the cumulative impacts analysis. Section 5 of the RDEIR/SDEIS includes the revised cumulative effects analysis for each of the resource areas.</p> <p>As described in Appendix 3D, most of the programs, projects, and policies included in the cumulative impact assumptions are defined in adequate detail to estimate potential adverse and beneficial impacts, including projects with draft environmental documentation but without selection of a proposed project and issuance of regulatory permits which could change the proposed actions, including operational criteria. For example, the Final EIS has been completed for the Shasta Lake Water Resources Investigation; however, the biological opinions to be issued by USFWS and NMFS could result in substantial operational changes. With respect to the San Joaquin River Storage Investigation, only a Draft EIS and Draft Feasibility Study have been publically released; and further changes could occur to the project description based upon response to comments and subsequent regulatory permitting activities. The cumulative impact analysis considers the preliminary determinations of beneficial and adverse impacts for these actions in conjunction with Alternative 4A (proposed project) and other action alternatives. However, because quantitative details are not available for all projects considered in the cumulative impact analysis, a partial quantitative analysis could be misleading. Therefore, the cumulative analysis included in the EIR/EIS was analyzed only in a qualitative manner.</p> <p>For additional information on cumulative impacts please see Master Response 9. For information on climate change please see Master Response 19.</p>
2598	24	<p>Use of the Early Long Term Period for the Assessment of Environmental Impacts Is Highly Misleading Because the Facility will not yet be in OperationThe RDEIR/SDEIS proposes to</p>	<p>The 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS are complete in their evaluation of impacts (using the best available science and modeling), direct and cumulative, that project description is complete and satisfies the</p>

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		<p>assess the potential environmental impacts of the new alternatives (4A, 2D, and 5A) at the Early Long Term period, which is the year 2025. See RDEIR/SDEIS at ES-8 to ES-9, 4.2-1. It states that, The other alternatives evaluated in the RDEIR/SDEIS, Alternative 4A, 2D, and 5A, are evaluated at the Early Long-Term (ELT) timeframe because the project implementation period is anticipated to be shorter. For NEPA impact assessment purposes, Alternatives 4A, 2D, and 5A are compared to the No Action Alternative for the Early Long-Term timeframe. Where impacts differ at the Late Long-Term (LLT) period, discussions of these effects were included in the analysis. For CEQA impact assessment purposes, they are compared against Existing Conditions, as generally described in the Draft EIR/EIS. RDEIR/SDEIS at ES-7 to ES-8. The document claims that the ELT period assumes a shorter time horizon of approximately 15 years following project approval. RDEIR/SDEIS at 4.2-1. The ELT period includes the effects of climate change on hydrology and operations, although those effects are less pronounced than the effects at the Late Long Term. [footnote#13: 13 However, the RDEIR/SDEIS fails to utilize updated projections of the status of fish populations at the ELT time period. As discussed infra, many of these fish species are likely to decline further by 2025 under the status quo, yet the RDEIR/SDEIS does not account for the declines between today and 2025.] However, the RDEIR/SDEIS estimates that construction of the new diversion facilities is likely to take 10 years after all permitting is complete. See, e.g., RDEIR/SDEIS at 5-17 to 5-18. And the revised air quality appendix to the document admits that the timeline for construction of the intake facilities continues until 2027 (for the Intake 3 Final Site Work) and 2029 (for the Intake 2 Final Site Work), with construction of the intermediate forebay and many other construction projects continuing through 2029. RDEIR/SDEIS Appendix A (Revisions to Appendix 22B of the DEIS/DEIR) at Table 22B-1. As a result, the RDEIR/SDEIS demonstrates that construction and operation of the new intake facilities proposed under the alternatives is likely to occur years after the ELT time period that the document uses for environmental analysis. In other words, the period for analysis in the RDEIR/SDEIS is a period when the new facilities would not actually be in operation. Because the RDEIR/SDEIS admits that the effects of climate change and increases in water demand are likely to increase over time, and these effects will increase adverse impacts on fisheries and water quality, this is not a harmless error. In addition, this schedule in Appendix 22B is overly optimistic. The construction schedule in revised Appendix 22B has not changed from the initial DEIS/DEIR issued in 2013 for many of the elements of the intakes, despite several years of additional delay. In addition, pursuant to the Delta Reform Act, construction of any of the alternatives cannot begin until the SWRCB has approved a petition for a change in point of diversion with appropriate flow criteria. Cal. Water Code § 85088. This adjudicatory process at the SWRCB is likely to take several years, according to the SWRCB. See SWRCB Fact Sheet, Bay Delta Conservation Plan/California WaterFix – Water Right Petition Process, available online at: http://www.swrcb.ca.gov/waterrights/water_issues/programs/bay_delta/california_waterfix/docs/ca_waterfix_factsheet.pdf (stating that “Complex proceedings such as these are often a multiyear process.”). DWR also has admitted that additional environmental analysis will be required to obtain required permits from the Army Corps of Engineers. See Bay Delta Conservation Plan/California WaterFix Partially Recirculated Draft EIR/Supplemental EIS, Errata Sheet in Progress, updated 9/23/2015, at 2-3, available online at: http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/BDCP_WaterFix_RDEIR-EIS_ERRATA_9-23-15.sflb.ashx (stating that the information in the current CEQA/NEPA documents “will not fully meet this level of detail and additional informational analysis and submittals will be necessary”). Because permits from the SWRCB and the Army Corps of Engineers are necessary before starting construction, and because those permits are unlikely to be obtained for several years, a 10 year construction period likely</p>	<p>requirements of NEPA, and that the project objectives are also precise and complete and satisfy the requirements of CEQA. The 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS.</p> <p>The operational analysis for Alternatives 4A, 2D and 5A, assumed operations in 2025 to approximate the potential term of a biological opinion under ESA Section 7 or incidental take permit under CESA Section 2081 (b). The operational modeling captures the duration of hydrodynamic and other effects in the assumed modeling time period compared against existing conditions and No Action Alternative conditions.</p> <p>For more information regarding permitting, please see Master Response 45.</p> <p>For more information regarding the proposed project's compliance with the Delta Reform Act, please see Master Response 31.</p>

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		<p>results in operations of a new facility beginning substantially later than the 2025 period used for analysis in the RDEIR/SDEIS. Because the RDEIR/SDEIS uses a time period for analysis when the new facility would not yet be constructed, because native fisheries are declining under the status quo and are likely to be in worse shape at the ELT, and because the impacts are likely to be greater as a result of climate change and increased water demand, the RDEIR/SDEIS fails to adequately analyze environmental impacts of the alternatives. The document must be revised to use a realistic starting date period for the environmental analysis of the operations of the alternatives on fisheries and water quality.</p>	
2598	25	<p>The RDEIR/SDEIS Fails to Analyze the Duration of Adverse Environmental Impacts That are Likely to Occur between the Early Long Term and Late Long Term Periods [footnote#14:14 In addition, the use of different temporal periods for assessment of environmental impacts in the RDEIR/SDEIS makes it very difficult to compare the environmental impacts of the new alternatives (analyzed at the ELT) with the prior alternatives (analyzed at the LLT). This is inconsistent with NEPA and CEQA.]As shown above, the use of the ELT time period for assessing environmental impacts is flawed because the proposed project will not be in operation at that time. More importantly, the use of the ELT time period for assessing environmental impacts is flawed because it fails to analyze the duration of the likely adverse environmental impacts of the alternatives. As the RDEIR/SDEIS admits, operations of the proposed project and alternatives are likely to continue for many years: “However, because the project would continue indefinitely, the analysis qualitatively examines impacts at the Late Long-Term timeframe for Alternatives 4A, 2D, and 5A, but does not make a CEQA or NEPA conclusion based off the No Action Alternative LLT baseline.” RDEIR/SDEIS at 4.1-42. CEQA and NEPA both require that the analysis of potential environmental impacts address the full duration of the project, not just the environmental impacts at the very beginning of the project. The CEQA Guidelines explicitly require the consideration of “both the short-term and long-term effects.” 14 Cal. Code Regs. § 15126.2(a). As the Supreme Court noted in <i>Neighbors for Smart Rail</i>, Even when a project is intended and expected to improve conditions in the long term— 20 or 30 years after an EIR is prepared—decision makers and members of the public are entitled under CEQA to know the short- and medium-term environmental costs of achieving that desirable improvement. These costs include not only the impacts involved in constructing the project but also those the project will create during its initial years of operation. Though we might rationally choose to endure short- or medium-term hardship for a long-term, permanent benefit, deciding to make that tradeoff requires some knowledge about the severity and duration of the near-term hardship. An EIR stating that in 20 or 30 years the project will improve the environment, but neglecting, without justification, to provide any evaluation of the project’s impacts in the meantime, does not “giv[e] due consideration to both the short-term and long-term effects” of the project (Cal. Code Regs., tit. 14, § 15126.2, subd. (a)) and does not serve CEQA’s informational purpose well. 57 Cal. 4th at 455. BDCP/WaterFix provides the opposite factual situation, where the SDEIS analyzes only the short term impacts occurring in 2025 (Early Long Term). As in <i>Neighbors for Smart Rail</i>, an EIR analyzing impacts of a project in the short term, but failing to evaluate the project’s impacts in the medium-term or longer-term, does not give “due consideration to both the short-term and long-term effects” of the project. 14 Cal. Code Regs. § 15126.2(a). Moreover, the effects of climate change are predicted to increase the adverse environmental impacts of the alternatives on fisheries and water quality over longer time periods (ELT vs. LLT), as the RDEIR/SDEIS admits. RDEIR/SDEIS at ES-5, ES-7, 1-11, Chapter 5, Appendix A (Revised Chapter 11 at 11-95). As a result, the failure to assess these impacts over the duration of the project significantly understates the likely environmental impacts of the alternatives over the</p>	<p>The operational analysis for BDCP alternatives assumes a 50 year time period to match the requested incidental take permit term which would expire in 2060. The operational analysis for Alternatives 4A, 2D and 5A, assumed operations in 2025 to approximate the potential term of a biological opinion under ESA Section 7 or incidental take permit under CESA Section 2081 (b). In both of these cases the operational modeling captures the duration of hydrodynamic and other effects in the assumed modeling time period compared against existing conditions and No Action Alternative conditions.</p>

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		<p>longer-term period they would be permitted and in operation. In addition, the failure to assess environmental impacts over the longer-term period is likely to prevent state and federal agencies from providing necessary permits (such as permits for incidental take under CESA or the ESA) that extend beyond the duration of the time period analyzed in the RDEIR/SDEIS. [footnote #15:15 For instance, the incidental take permit issued by CDFW to DWR for take of Longfin Smelt by the State Water Project expires on December 31, 2018. See Incidental Take Permit No. 2081-2009-001-03.] CESA requires that CDFW to comply with CEQA before issuing an incidental take permit. 14 Cal. CodeRegs. § 783.5. CDFW would be in violation of CEQA if it issued an incidental take permit that had a longer duration than the analysis of environmental impacts from the project, since it would have failed to analyze the extent and duration of potential environmental impacts resulting from the action (issuance of the permit). The same is true with respect to NEPA and federal agencies, as required by a recent appellate court decision concluding that Reclamation must analyze the environmental impacts of implementing a biological opinion. See San Luis & Delta Mendota Water Authority v. Jewell, 747 F.3d 581, 645-655 (9th Cir. 2014). The RDEIR/SDEIS must be revised to assess potential environmental impacts of project operations for the duration and extent of proposed operations under state and federal endangered species act permits, rather than limiting the analysis to a single snapshot in time before the facilities are even constructed.</p>	
2598	26	<p>The RDEIR/SDEIS Unlawfully Defers Discussion of Key Issues to the FEIR/FEIS</p> <p>In several cases, the RDEIR/SDEIS acknowledges significant issues that require analysis under CEQA and NEPA, but defers that analysis to the FEIS/FEIR. See, e.g., RDEIR/SDEIS at 1-35 (deferring discussion of climate change to the Final EIS/EIR); id. At Table 3.4.1-1 (determination whether the D-1641 export: inflow ratio will apply to the North Delta intakes). However, providing this information for the first time in the FEIS/FEIR deprives the public of the opportunity to review and comment on these analyses. The RDEIR/SDEIS must be recirculated to provide an opportunity to review and comment on these issues, as well as on other significant changes made after public review of the RDEIR/SDEIS.</p>	<p>The Draft EIR/EIS presented Chapter 29, Climate Change to address potential effects of climate change on project resiliency. The modeling analysis (CALSIM II) included in Chapters 5, Water Supply, Chapter 6, Surface Water and Chapter 8, Water Quality includes climate change and sea-level rise assumptions for the No Action Alternatives and the action alternatives to account for potential effects on conveyance facility operations. Please refer to Appendix 5A, modeling technical appendix for CALSIM and DSM2 methodologies and assumptions used in the EIR/EIS analyses including those involving consideration of the Export/Inflow ratio assumptions. This Final EIR/EIS also presents Appendix 29D which addresses potential future effects of climate change and sea level rise on SWP/CVP operations. This additional analysis does not affect the modeling analyses presented in the EIR/EIS. Additional EIR/EIS information was made available during the NEPA coordination period. The large majority of information regarding the alternatives has been provided in the Draft EIR/EIS and RDEIR/SDEIS. However, as with any EIR/EIS, additional information has been gathered in response to comments received on earlier drafts and is provided in the Final EIR/EIS.</p>
2598	27	<p>VIII. The RDEIR/SDEIS Misleads the Public Regarding Changes to the Analysis of Impacts to Fisheries (Chapter 11)</p> <p>The revised Fish and Aquatic Resources chapter of the RDEIR/SDEIS (Chapter 11) is an assemblage of partial analyses and revisions or amendments to determinations made in the DEIS/DEIR, interspersed among redline edits from an unknown previous draft of this chapter. The impacts of the project alternatives and differences among them cannot be understood without reference to the DEIR/DEIS Chapter 11 and numerous other technical appendices. Many impacts are not described at all in this revision and it is uncommon that an analysis of all of the previous alternatives is provided for those impacts that are mentioned. This fundamentally undermines and is inconsistent with the basic purpose of informing the public and decisionmakers of environmental impacts under NEPA and CEQA.</p> <p>The revised Chapter 11 is neither a complete rewrite of the DEIR/DEIS version of this chapter, nor is it a comprehensive markup (redline). For example, the redlined Table 11-2 in the RDEIR/SDEIS Chapter 11, is not found in the previous DEIR/DEIS; Table 11-2 in the</p>	<p>The RDEIR/SDEIS fulfills two different but related roles: It describes and analyzes three new alternatives (Alternatives 4A, 2D, and 5A) and it provides revisions to the Draft EIR/EIS and associated Draft BDCP that were released in 2013. Because the entire Draft EIR/EIS and Draft BDCP were not presented a second time and because the Lead Agencies avoided unnecessarily reproducing lengthy portions of the Draft EIR/EIS and Draft BDCP, the RDEIR/SDEIS contains cross-references to the earlier documents. These cross references are clearly labeled to guide reviewers to the appropriate document.</p> <p>In addition, Chapter 1, Section 1.3, of the RDEIR/SDEIS describes the contents of the document and provides references to the locations where readers may find specific discussions and analyses. Table 1-2 in the RDEIR/SDEIS identifies the exact portions of the Draft EIR/EIS that are modified in the RDEIR/SDEIS.</p> <p>As they did with the Draft EIR/EIS, the Lead Agencies balanced readability with thoroughness in describing and analyzing the new alternatives in the RDEIR/SDEIS. To assist reviewers, the Lead Agencies provided a “Document Review Road Map” at the beginning of the RDEIR/SDEIS. Chapter 1, Section 1.3, of the RDEIR/SDEIS describes the contents of the document and provides references to the locations where readers may find specific discussions and analyses. Table 1-2 in the RDEIR/SDEIS identifies the exact</p>

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		<p>DEIR/DEIS is titled SWP/CVP Export Service Area Delivery Reservoirs (DEIR/DEIS Chapter 11 at Part 1-11-17). Also, under the “Regulatory Setting” section of the RDEIR/SDEIS’ Chapter 11 is a heading for “Federal Plans Policies and Regulations” with a subheading “Long-Term Central Valley 2008 and 2009 USFWS and NMFS Biological Opinions,” but the only topics covered under these headers are the “Collaborative Science and Adaptive Management Program” and the “Longfin Smelt Settlement Agreement;” no description of the actual biological opinions for Delta Smelt (USFWS 2008) or anadromous fish (NMFS 2009) are provided and no other federal plans, policies, or regulations are mentioned. Furthermore, Chapter 4 of the RDEIR/SDEIS (describing new project alternatives) frequently refers to “Chapter 11” without indicating whether the reader should reference the old version of this chapter or the new version. The net effect is to obscure project proponents’ current analyses and projected outcomes of both new and previously published California WaterFix alternatives.</p> <p>Chapter 11 is, by no means, the only place where the RDEIR/SDEIS is missing information, internally inconsistent, or confusing. One other example is that section 8.3.1.4 does not exist (the document skips from 8.3.1.3 to 8.3.1.5). Chapter 8 refers to this section no less than five times (for example, to claim that “DWR and Reclamation have a good history of compliance with water quality objectives (see section 8.3.1.4 and 8.3.1.7 for more detail)”) – these references should be removed.</p> <p>The RDEIR/SDEIS is poorly constructed, organized, and internally inconsistent, such that even experts in the topics discussed are frequently disoriented. The RDEIR/SDEIS must be revised and recirculated to provide a comprehensible, internally consistent document, including Chapter 11, which is sufficient for the general public and decisionmakers to meaningfully comprehend the likely environmental impacts of the alternatives.</p>	<p>portions of the Draft EIR/EIS that are modified in the RDEIR/SDEIS. In addition, the PDFs of the RDEIR/SDEIS, the Draft EIR/EIS, and the Draft BDCP are bookmarked so that readers may quickly navigate to the proper section. See Master Response 38 for further discussion of document organization.</p> <p>The Final EIR/EIS is a complete document without references to earlier versions. See Master Response 38 for more information about document length and organization.</p>
2598	28	<p>The RDEIR/SDEIS Unlawfully Attempts to Provide Regulatory Assurances and Limitations on Future Reductions in Water Supply from the WaterFix</p> <p>In the RDEIR/SDEIS, DWR and Reclamation appear to attempt to provide regulatory assurances to limit, delay or avoid reductions in water exports in the future, claiming that water exports could not be reduced below the ranges established in Alternative 4A without subsequent environmental review in a separate CEQA/NEPA document and revisions to CESA permits. RDEIR/SDEIS at ES-38, 4.1-19 to 4.1-20; see id. at 4.1-31 (same for Alternative 5A). However, having chosen not to meet the standards and requirements of the NCCPA, this is unlawful under CESA, and it fundamentally subverts the purposes of NEPA and CEQA. This is particularly true with respect to use of the RDEIR/SDEIS by other regulatory agencies, including the SWRCB.</p> <p>The California Supreme Court has concluded that regulatory assurances are unlawful under CESA, unlike the assurances allowed under the NCCPA. Environmental Protection Information Center v. Cal. Dept. of Forestry and Fire Protection, 44 Cal. 4th 459 (2008). Because the new alternatives in the RDEIR/SDEIS, including Alternative 4A, do not meet the requirements of the NCCPA, it is unlawful to provide regulatory assurances under CESA.</p> <p>In addition, as discussed supra, the RDEIR/SDEIS must meaningfully analyze reductions in water exports and improvements in environmental flows in order to consider a reasonable range of alternatives under NEPA and CEQA. To the extent that this RDEIR/SDEIS adequately analyzes reductions in water exports and increases in environmental flows, the agencies need not prepare a new CEQA/NEPA document before reducing exports in the future, for</p>	<p>The BDCP and EIR/EIS are complete in their evaluation of impacts, direct and cumulative, that project description is complete and satisfies the requirements of NEPA, that the project objectives are also precise and complete and satisfy the requirements of CEQA. The 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS.</p> <p>The Proposed Project proposes to stabilize water supplies, and exports could only increase under certain circumstances in which hydrological conditions result in availability of sufficient water and ecological objectives are fully satisfied. It is projected that Delta exports from the federal and state water projects would either remain similar or increase in wetter years and decrease in drier years under Alternative 4A as compared to exports under No Action Alternative (ELT) depending on the capability to divert water at the north Delta intakes during winter and spring months. The estimated changes in deliveries for 4A are provided in the RDEIR/SDEIS 4.3.1 and Appendix A Chapter 5 Water Supply. Although exports under the Proposed Project would be similar to the amount water exported in recent history, it would make the deliveries more predictable and reliable, while reducing other stressors on the ecological functions of the Delta. The amount of water DWR can pump from the new north Delta facilities is set by Federal regulating agencies, ESA compliance and project design, and not by the water contractors. Operations for the proposed project would still be consistent with the criteria set by the FWS (2008) and NMFS (2009) BiOps and State Water Resources Control Board Water Right Decision 1641 (D-1641), subject to adjustments made pursuant to the adaptive management process as described in the 2008 and 2009 BiOps (RDEIR/SDEIS Executive Summary ES.2.2). For more information regarding Adaptive Management, please refer to Master Response 33.</p> <p>The three additional sub-alternatives (4A, 2D, and 5A) evaluated in the RDEIR/SDEIS embody a different</p>

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		instance if species continue to decline (as the RDEIR/SDEIS indicates is likely). Project applicants cannot have it both ways: either the RDEIR/SDEIS considers a reasonable range of alternatives, including reduced export alternatives, and therefore provides sufficient analysis under NEPA and CEQA should the agencies determine that reductions in exports are needed in the future, or the RDEIR/SDEIS fails to analyze future reductions in exports, and the document fails to consider a reasonable range of alternatives.	<p>implementation strategy that would not involve a 50-year HCP/NCCP approved under ESA Section 10 and the NCCPA, but rather would achieve incidental take authorization under ESA Section 7 and California Endangered Species Act (CESA) Section 2081(b) assuming a shorter project implementation period. Alternative 4 is evaluated at the Late-Long-Term (LLT) timeframe because it would include 50-year incidental take permits. The other alternatives evaluated in the RDEIR/SDEIS, Alternative 4A, 2D, and 5A, are evaluated at the Early Long-Term (ELT) timeframe because the project implementation period is anticipated to be shorter. For NEPA impact assessment purposes, Alternatives 4A, 2D, and 5A are compared to the No Action Alternative for the Early Long-Term timeframe. Where impacts differ at the Late Long-Term (LLT) period, discussions of these effects were included in the analysis. For CEQA impact assessment purposes, they are compared against Existing Conditions, as generally described in the Draft EIR/EIS.</p> <p>15 alternatives and 3 additional subalternatives were analyzed in the EIR/S and the RDEIR/SDEIS respectively. Four major alignments have been included in the EIR/S: Through-Delta, East of the Sacramento River, West of the Sacramento River, and a Tunnel under the Delta. Many additional proposals by public and private individuals and organizations have also been evaluated and described in Chapter 3 of the BDCP EIR/S and Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1. Regarding development of alternatives for the EIR/EIS, a description of the process the Lead Agencies followed to develop and screen alternatives is provided in Master Response 4.</p>
2598	29	<p>Under the Delta Reform Act, approval of a change in point of diversion permit by the SWRCB must include “appropriate flow criteria” that are subject to change through adaptive management. Cal.</p> <p>Water Code § 85086(c)(2). This legislation requires that operations of the WaterFix/BDCP shall be subject to adaptive management and may result in reductions in water exports below the ranges identified in Alternative 4A, or other alternatives. Because Alternative 4A fails to reasonably protect fish and wildlife, the SWRCB must adopt additional conditions and flow criteria that improve environmental flows and reduce exports. Alternative 8 provides another basis for the SWRCB’s review of the petition and appropriate flow criteria.</p>	<p>As described in Chapter 3 of the EIR/EIS, the State Water Resources Control Board will hold hearings related to the petition from DWR and Reclamation to add points of diversions for the north Delta diversions. Following adoption of the modified water rights issued to DWR and Reclamation, the proposed project would need to be reviewed to determine if additional engineering and environmental analyses would be required. For more information about compliance of the BDCP/California WaterFix with the Delta Reform Act, please see Master Response 31.</p> <p>For updated information regarding the Petition before the SWRCB for a Change in the Point of Diversion, please see the SWRCB webpage for the California WaterFix.</p>
2598	30	<p>The RDEIR/SDEIS Fails to Adequately Describe or Analyze the Impacts of Alternative 4A because it Fails to Identify or Model the Effects of the Proposed Winter/Spring Outflow Operating Criteria According to the RDEIR/SDEIS, Alternative 4A will include new winter/spring outflow criteria that are different from previously analyzed alternatives. See RDEIR/SDEIS at 4.1-5, 4.1-9, 4.1-43. However, the RDEIR/SDEIS never identifies what this proposed outflow requirement will be over the winter months, except that it will be lower than the high outflow scenario under Alternative 4. The RDEIR/SDEIS also fails to demonstrate whether the proposed new outflow criteria will result in reductions in Delta outflow compared to the baseline. However, the best available science demonstrates that reductions in Delta outflow below the high outflow scenario, let alone below existing levels, are likely to cause significant adverse environmental effects. Moreover, the CALSIM modeling utilized in the RDEIR/SDEIS for Alternative 4A does not actually model the new, undisclosed outflow requirement, but instead simply models the high outflow scenario from Alternative 4 (Alternative 4_H4). See, e.g., RDEIR/SDEIS Fig. 4.3.1.1. Because Alternative 4_H4 results in higher outflow than what is proposed under Alternative 4A, and because reduced outflow is likely to cause significant environmental impacts, the RDEIR/SDEIS fails to disclose and analyze the likely environmental impacts of Alternative 4A. [footnote#16: Although Alternative B includes a sensitivity analysis, there are substantial differences in the CALSIM II modeling results of Alternative 4 and Alternative 4A, and Alternative 4A is likely to cause more adverse and significant impacts for fish compared with Alternative 4 in several</p>	<p>The Final EIR/EIS includes model results for Alternatives 2D, 4A, and 5A as compared to the No Action Alternative and Existing Conditions in Appendix 5A, Section C, in addition to the model results previously provided in the Draft EIR/EIS. The comparative results between Alternatives 2D, 4A, and 5A and the No Action Alternative and the Existing Conditions are generally consistent with the impact analysis results presented in the RDEIR/SDEIS.</p> <p>Alternative 4A includes both H3 and H4 scenarios in the early long term implementation period, which are meant to provide bookends of operations, including Delta Outflow, within which future operations under Alternative 4A would operate. Two appendices, Appendix 5F, Comparison of FEIRS Alternatives 2D, 4A, and 5A Modeling Results to RDEIR/SDEIS Modeling Results, and Appendix 5G, Comparison of FEIRS Alternative 4A Modeling Results to the California WaterFix Section BA Proposed Action Modeling Results, are included in the Final EIR/EIS to corroborate RDEIR/SDEIS modeling of H3_ELT and H4_ELT with those used in the Final EIR/EIS and California WaterFix Biological Assessment, respectively. In addition, Appendix 11E was included to corroborate the fisheries analyses of H3 and H4 with Final EIR/EIS and Biological Assessment modeling.</p>

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		<p>key respects, including: upstream reservoir storage and water temperature impacts on the Sacramento and Feather Rivers; Delta outflow in January-March of Dry years; and Delta salinity in October to December of Below Normal, Dry, and Critical years. Appendix B mischaracterizes the two alternatives as “similar,” but there are substantial differences that will result in additional impacts that are not adequately disclosed in the RDEIR/SDEIS.]The RDEIR/SDEIS fails to actually disclose or analyze the proposed outflow criteria for Alternative 4A, which fails to inform the public and decisionmakers of what is actually being proposed, let alone the likely environmental impacts. The RDEIR/SDEIS must be revised to describe, model, and analyze the operations that are being proposed under Alternative 4A.</p>	
2598	31	<p>The RDEIR/SDEIS Fails to Adequately Describe or Analyze the Impacts of Alternative 4A because Proposed Delta Outflows are not Reasonably Certain to Occur. In addition to failing to describe, model or analyze the winter/spring outflow operations that are being proposed in Alternative 4A, the RDEIR/SDEIS fails to model and analyze the likely effects of Alternative 4A because it fails to demonstrate that the outflow requirements of Alternative 4A will be achieved. The RDEIR/SDEIS states that the outflow requirements of Alternative 4A will be “provided through the acquisition of water from willing sellers. If sufficient water cannot be acquired for this purpose, the spring outflow criteria will be accomplished through operations of the SWP and CVP to the extent an obligation is imposed on either the SWP or CVP under federal or applicable state law.” RDEIR/SDEIS at 4.1-5. However, the RDEIR/SDEIS fails to demonstrate that flows under Alternative 4A are reasonably likely to occur. First, the document fails to demonstrate that CVP/SWP contractors will be willing and able to acquire sufficient flow to meet these compliance obligations. Because these are mitigation and compliance obligations, public funds under Proposition 1 cannot be used. See Cal. Water Code § 79709. Second, to the extent that flows cannot be acquired, the RDEIR/SDEIS does not actually require that the CVP and SWP achieve these outflow requirements, instead limiting outflow “to the extent an obligation is imposed on either the SWP or CVP under federal or applicable state law. RDEIR/SDEIS at 4.1-5. The RDEIR/SDEIS fails to demonstrate that outflow requirements proposed in Alternative 4A would actually be achieved in the future using CVP/SWP operations. Third, the RDEIR/SDEIS proposes to achieve the outflow requirements “assuming outflow from export reductions first, then Oroville releases.” RDEIR/SDEIS at 4.1-9. However, as other stakeholders noted in prior comments on a similar program in the DEIS/DEIR, this operational approach would likely result in a water supply deficit under the Coordinated Operating Agreement, which would likely result in significant changes in operations that are not analyzed in the RDEIR/SDEIS (including new environmental impacts), and different water supply impacts between CVP and SWP contractors than those identified in the RDEIR/SDEIS. The RDEIR/SDEIS must be revised to ensure that CVP/SWP operations will achieve required outflow under Alternative 4A irrespective of any water transfers.</p>	<p>The text referred to in this comment has been modified in the Final EIR/EIS to not include acquisition of water related to spring outflow criteria. The model results presented in the Final EIR/EIS do not include water acquisition methods. The CALSIM II model assumptions are based on a reduction of SWP and CVP Delta exports to water contractors to achieve the spring Delta outflow objectives.</p>
2598	32	<p>XI. The RDEIR/SDEIS Fails to Adequately Analyze Likely Significant Adverse Environmental Impacts because it Fails to Analyze Likely Waivers of Water Quality Standards during Future Droughts, Which the RDEIR/SDEIS Indicates are Likely to Occur</p> <p>As CVP/SWP operations during the recent drought have demonstrated, waivers of water quality standards and ESA protections during future droughts are reasonably foreseeable, and are likely to cause significant adverse environmental impacts on fish and wildlife. The RDEIR/SDEIS also indicates that the CVP and SWP are likely to seek substantial waivers of environmental protections in future droughts as well, operating in a manner that is not analyzed in the RDEIR/SDEIS. However, despite language in the RDEIR/SDEIS indicating</p>	<p>Please see Master Response 47 for a discussion of the California WaterFix and drought conditions.</p>

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		<p>that the CVP and SWP are likely to seek and obtain waivers of water quality standards and other environmental commitments in future droughts, the RDEIR/SDEIS fails to analyze the impact of such waivers in the future. As a result, the RDEIR/SDEIS fails to adequately analyze the likely environmental impacts of the alternatives during future drought conditions.</p> <p>During the current drought, the SWRCB and fishery agencies have waived and relaxed Delta water quality standards (including salinity and X2) and ESA requirements under the existing biological opinions, and have failed to meet water temperature standards, in order to increase water diversions and water deliveries during the drought. See, e.g., Water Rights Order 2014-0029 (September 24, 2014), available online at: http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2014/wro2014_0029.pdf; Water Rights order dated February 3, 2015, available online at: http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2014/wro2014_0029.pdf; April 6, 2015 Revised Order, available online at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/2015/tucp_order040615.pdf; July 3, 2015 order conditionally approving petition for temporary urgency change, available online at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/2015/tucp_order070315.pdf. For instance, in 2015 the waivers of water quality standards reduced Delta outflows and increased water deliveries by approximately 800,000 acre feet. See email from DWR to SWRCB dated October 26, 2015, available online at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/tucp/docs/dwr2015sept_droughtacct.pdf.</p> <p>The failure to meet water quality standards and water rights conditions (including water temperature requirements) has contributed to devastating impacts to native fish and wildlife species, including:</p> <ul style="list-style-type: none"> • Greater than 95% mortality of endangered winter-run Chinook salmon eggs and juveniles above Red Bluff Diversion Dam in 2014, and the potential for similar or even higher mortality levels in 2015, due to lethal and chronically adverse water temperatures below Keswick Dam; • Greater than 95% mortality of fall-run Chinook salmon eggs and juveniles that spawned in the mainstem Sacramento River above Red Bluff Diversion Dam in 2014; • Record low abundance indices for Delta Smelt in the 2014 Fall Midwater Trawl, 2015 Spring Kodiak Trawl, and other surveys; • Near record low abundance of Longfin Smelt in the 2014 Fall Midwater Trawl survey; • Increases in the abundance of nonnative species like black bass in the Delta; and, • Increases in harmful algal blooms like Microcystis. <p>See, e.g., Water Rights Order 2014-0029; Water Rights order dated February 3, 2015; April 6, 2015 Revised Order; July 3, 2015 order conditionally approving petition for temporary</p>	

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		<p>urgency change; Protest to TUCP filed by the NRDC dated February 13, 2015, available online at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/comments_tucp2015/docs/nrdc_obegi021315.pdf; March 24, 2015 Petition for Temporary Urgency Change, Attachment A, available online at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/2015/apr2015_req032415.pdf.</p>	
2598	33	<p>The RDEIR/SDEIS repeatedly indicates that during future droughts, the CVP and SWP are likely to be operated in a manner that does not comply with the flow, water quality, and other environmental standards identified in the RDEIR/SDEIS. For instance, the RDEIR/SDEIS admits that,</p> <p>These changes in storage would reduce the ability of the CVP and SWP to meet system water demands and environmental water needs. Adaption measures would need to be implemented on upstream operations to manage coldwater pool storage levels under future sea level rise and climate change conditions. As described in the methods section of Chapter 5, Water Supply, in the Draft EIR/EIS, model results when storages are at or near dead pool may not be representative of actual future conditions because changes in assumed operations may be implemented to avoid these conditions.</p> <p>RDEIR/SDEIS at 4.2-4 (emphasis added). The same or similar language appears repeatedly in the document. See, e.g., RDEIR/SDEIS at 4.2-10 to 11, 4.3.1-6, 4.3.4-25; RDEIR/SDEIS Appendix A at 5-3. Similarly, the RDEIR/SDEIS admits that</p> <p>Under extreme hydrologic and operational conditions where there is not enough water supply to meet all requirements, CALSIM II utilizes a series of operating rules to reach a solution to allow for the continuation of the simulation. It is recognized that these operating rules are a simplified version of the very complex decision processes that SWP and CVP operators would use in actual extreme conditions. Therefore, model results and potential changes under these extreme conditions should be evaluated on a</p> <p>comparative basis between alternatives and are an approximation of extreme operational conditions.</p> <p>As an example, CALSIM II model results show simulated occurrences of extremely low storage conditions at CVP and SWP reservoirs during critical drought periods when storage is at dead pool levels at or below the elevation of the lowest level outlet. When reservoir storage is at dead pool levels, there may be instances in which flow conditions fall short of minimum flow criteria, salinity conditions may exceed salinity standards, diversion conditions fall short of allocated diversion amounts, and operating agreements are not met.</p> <p>RDEIR/SDEIS Appendix A at 5-2; RDEIR/SDEIS Appendix A at 8-237 (admitting that CALSIM modeling shows that during drought conditions, water quality standards in the Delta are exceeded due to dead pool conditions, but that this does not reflect likely CVP/SWP operations because CALSIM modeling does not reflect actual operations during such conditions). And the RDEIR/SDEIS asserts that extreme, prolonged droughts are not</p>	<p>The comment is consistent with information presented in the EIR/EIS about the limitations of the CALSIM II model related to extremely dry conditions, severe tidal conditions, and extreme climate conditions such as flooding or high wind events that cause high waves and ponding of Delta water on landside of levees. The hydrologic analysis in the EIR/S considered changes over long-term conditions, did not evaluate emergency operations conditions such as during the recent drought because separate environmental documentation is prepared for those conditions.</p> <p>Please see Master Response 47, for further discussion of the California WaterFix and drought conditions.</p>

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		<p>simulated or analyzed in the RDEIR/SDEIS, despite the likelihood of failing to meet water quality and other environmental commitments during such conditions, stating,</p> <p>Environmental conditions arise that cannot be foreseen or simulated in the model that can affect compliance with water quality objectives. These include unpredictable tidal and/or wind conditions, gate failures, operational needs to improve fish habitat/conditions, and prolonged extreme drought conditions, among others.</p> <p>RDEIR/SDEIS Appendix A at 8-53 (emphasis added).</p>	
2598	34	<p>The adaptive measures taken in deadpool conditions are likely to result in significant adverse environmental impacts, particularly on native fish and wildlife, which are not analyzed in the RDEIR/SDEIS. For instance, the RDEIR/SDEIS asserts that water quality impacts will be less significant than identified in the RDEIR/SDEIS because the projects will not be operated as modeled:</p> <p>Table 2 of Appendix 8H Attachment 1 indicates that most of these exceedances are a result of modeling artifacts, but some exceedances are due to dead pool conditions that occurred in 1977, 1981, and 1990 occurred under Alternative 4 and not under Existing Conditions. As discussed in Chapter 5, Water Supply, Section 5.3.1, Methods for Analysis, under extreme hydrologic and operational conditions where there is not enough water supply to meet all requirements, CALSIM II uses a series of operating rules to reach a solution that are is a simplified version of the very complex decision processes that SWP and CVP operators would use in actual extreme conditions. Thus, it is unlikely that the Emmaton objective would actually be violated due to dead pool conditions.</p> <p>RDEIR/SDEIS Appendix A at 8-237 (emphasis added). Yet the RDEIR/SDEIS fails to explain how such adaptive measures would avoid violating the Emmaton objective as a result of dead pool conditions and without causing other significant environmental impacts. For instance, increased reservoir releases to meet water quality standards during such conditions could result in increased mortality of salmon eggs and juveniles as a result of lethal upstream temperatures. Indeed, the actions taken during the recent drought indicate that it is far more likely that water quality standards in the Delta will be waived in future droughts, and that this will cause significant adverse impacts that are not analyzed or disclosed in the RDEIR/SDEIS.</p>	<p>The hydrologic analysis in the EIR/S considered changes over long-term conditions, did not evaluate emergency operations conditions such as during the recent drought.</p> <p>Please see Master Response 47, for further discussion of the California WaterFix and drought conditions.</p>
2598	35	<p>The RDEIR/SDEIS acknowledges that reservoir storage will approach dead pool levels more frequently in the future as a result of climate change and CVP/SWP operations: for instance, under the No Action Alternative, “[t]he frequency of Trinity, Shasta, and Folsom Lakes dropping to dead pool storage would increase by about 10% under the No Action Alternative as compared to Existing Conditions.” RDEIR/SDEIS Appendix A at 5-3. As a result, there is a 10% increase in the frequency during which operations are not likely to occur as modeled in the RDEIR/SDEIS. These are periods when environmental impacts that are more severe and significant than those disclosed in the RDEIR/SDEIS are likely to occur.</p>	<p>The conditions referenced in this comment are a result of climate change, sea level rise, and projected population growth that would occur with or without the project; and therefore, mitigation measures are not required for implementation of the project. For additional information regarding upstream operations please refer to Master Response 26, Upstream Reservoir Effects.</p>
2598	36	<p>The RDEIR/SDEIS also misleads the public and decisionmakers as to the record of compliance with salinity and other water quality standards. The document asserts that there have been very few violations of salinity and water quality standards. See RDEIR/SDEIS Appendix A at 8-16 and Table 8-13a. Yet in both of the prolonged drought periods that have</p>	<p>The text referred to in the comment is informational, to provide an overview of the compliance with Bay-Delta Water Quality Control Plan EC objectives from 1995–2004. The text and Table 8-13a identify several periods of non-compliance, including a 35 day period in 2013 at Emmaton, and several periods in the south Delta. Updating the table to include compliance record for years 2014 and 2015 would not further</p>

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		occurred since adoption of Decision 1641, the CVP and SWP have sought and/or obtained waivers of water quality standards in the Delta. The RDEIR/SDEIS fails to disclose that the CVP and SWP have violated the Delta X2 and salinity standards specified in the water quality control plan for much of 2014 and 2015, as well as petitioning the SWRCB to waive water quality standards (X2 and salinity) during drought conditions in 2009. These tables and text must be revised to disclose the recent record of non-compliance with the water quality control plan objectives.	the assessment, which relies on hydrologic and hydrodynamic modeling results.
2598	37	<p>The RDEIR/SDEIS Fails to Adequately Analyze Environmental Impacts and Fails to Disclose Significant Adverse Impacts of the Previously Analyzed Alternatives</p> <p>Despite significant scientific criticism of the methods used to assess environmental impacts in the DEIS/DEIR and the scope of analysis in our Prior Comments, independent scientific peer reviews, and comments from other agencies and stakeholders, the RDEIR/SDEIS largely fails to modify the assessment of impacts of the prior alternatives. For example, the revision to Chapter 11 in the RDEIR/RDEIS does not replace or modify modeling techniques that are likely to produce inaccurate or skewed results. These flawed modeling approaches include, but are not limited to, application of:</p> <ul style="list-style-type: none"> • The Delta Passage Model (see below and Prior Comments, footnote 70 at 187), • CALSIM II (see Prior Comments, multiple locations e.g., in particular, at 56-64) • Modifications of regression equations from Kimmerer et al. (2009; see below and Prior Comments at 136-140). 	The models used in the impact analysis provide useful information needed to describe and document potential effects of the alternatives. Limitations of each model used in this impact analysis are acknowledged and uncertainty in outputs disclaimed whenever necessary. All models used in the analysis were carefully vetted to ensure they provide objective and valuable information.
2598	38	Despite the numerous published papers, reports, and scientific reviews cited in our Prior Comments, the RDEIR/SDEIS has not modified project proponents' previous unsubstantiated assertions about the expected benefits of tidal marsh habitat restoration (CM4) or the uncertainty surrounding those expectations. The RDEIR/SDEIS does not appear to have incorporated or responded to analyses (e.g., Kimmerer X2 equation relating Fall X2 to Delta Smelt abundance, from comments submitted by The Nature Conservancy), or published papers (e.g., Rose et al 2013 a, b), agency reports, and peer reviews cited in our Prior Comments or those of other parties. And, the RDEIR/SDEIS makes no reference to new, highly relevant publications and reports that have become available since our Prior Comments were submitted. As a result, the RDEIR/SDEIS ignores substantial scientific information relevant to the assessment of impacts. This failure to incorporate the best available science in to discussions of the previous alternatives, failure to identify impacts, new and persistent flaws in the analysis of impacts that are identified, and incorrect or misleading conclusions drawn from analyses, are covered in more detail below.	Please see the response to comment 1 regarding the change in preferred alternative from Alternative 4 to Alternative 4A. Please see Master Response 5 for information about effects of tidal restoration on native fishes assumed in the analysis. Numerous comments were received that focused on various elements of the BDCP. Where the comments focused on elements of the BDCP that overlap with the elements of Alternatives 2D, 4A, or 5A (e.g., CM1 as it comprises of the North Delta Diversions, tunnels, and supporting facilities), specific responses are presented. Where comments raised issues as to whether the BDCP and other HCP/NCCP alternatives in the 2013 Draft EIR/EIS were potentially feasible and could function as an alternative for purposes of meeting CEQA and NEPA's requirements to analyze a reasonable range of alternatives to the proposed project (e.g., issues regarding the BDCP Effects Analysis or financial feasibility), responses are presented generally in Master Response 5. Where comments submitted on the BDCP were focused on elements outside the scope of the environmental analysis or viability of the BDCP and other HCP/NCCP alternatives within the context of CEQA/NEPA (e.g., request of specific revisions to the BDCP related to mapping or references), no specific responses are provided and further consideration will be given to these comments, and any revisions to the Draft BDCP would only be made, if an HCP/NCCP alternative was ultimately approved at the conclusion of the CEQA/NEPA process.
2598	39	The RDEIR/SDEIS also fails to revise the environmental baseline in the analysis of these alternatives, which causes the document to incorrectly analyze impacts as discussed in our Prior Comments. As discussed supra, the failure to include Fall X2 and required habitat restoration in the baseline is even less justified today, the RDEIR/SDEIS includes these measures in the NEPA baseline for the new alternatives further demonstrates that the baseline should be changed for the prior alternatives, and the RDEIR/SDEIS now uses different baselines for the different alternatives.	The Existing Conditions assumptions for the EIR/EIS include facilities and ongoing programs that existed as of February 13, 2009 (publication date of the most recent Notice of Preparation and Notice of Intent to prepare the EIS/EIR), that could affect or could be affected by implementation of the project alternatives. Projects that were not completed in 2009, such as the diversion for the Freeport Regional Water Authority, were included in the No Action Alternative assumptions. The projects assumed to be included in the Existing Conditions and No Action Alternative in the Draft EIR/EIS continue to be included in the Existing Conditions and No Action Alternative in the RDEIR/SDEIS and the Final EIR/EIS. Population growth assumptions in the No Action Alternative in the Draft EIR/EIS continue to be included in the No Action Alternative in the RDEIR/SDEIS and the Final EIR/EIS because the population growth is assumed to occur by 2025/2030; and it

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			<p>would be speculative to increase the population past 2030 without adopted general plans for the study area communities. The major difference in the No Action Alternative assumptions between the Draft EIR/EIS and the RDEIR/SDEIS is related to the temporal-based climate change and sea level rise conditions.</p> <p>With respect to the comment related to Fall X2, operations under Fall X2 assumptions were to be implemented in 2009; however, due to hydrologic conditions, Fall X2 actions were not implemented at the time of the Notice of Preparation and Notice of Intent. Therefore, Fall X2 is not included in the Existing Conditions assumptions. In the proposed action, assumptions were included in these alternatives to provide operational criteria to protect Delta Smelt in a manner that would not include Fall X2 but would be consistent with the objectives of the Fall X2 provision of the 2008 USFWS Biological Opinion.</p> <p>With respect to the comment about Yolo Bypass being included in the No Action Alternative, in the Draft EIR/EIS, implementation of the 2009 NMFS biological opinion was included in the No Action Alternative. However, at that time, it was determined to only consider the Yolo Bypass habitat restoration in a qualitative manner. Based upon comments received on the Draft EIR/EIS, it was determined that specific assumptions would be included in the No Action Alternative and Alternatives 2D, 4A, and 5A that are consistent with assumptions in other action alternatives in the Draft EIR/EIS. It is recognized that the Yolo Bypass habitat restoration program will be determined under the ongoing engineering project and EIS/EIR being completed by DWR and Reclamation. Therefore, during design phase, additional mitigation restoration that would occur in the Yolo Bypass would be coordinated with other parties involved in operations of the Yolo Bypass, including Yolo County, USACE, and Central Valley Flood Protection Board. For updated information regarding the progress of Yolo Bypass projects and habitat restoration please refer to the EcoRestore website.</p> <p>For further information about environmental baselines, please refer to Master Response 1.</p>
2598	40	The RDEIR/SDEIS has not changed the temporal scope of the analysis of impacts, limiting the analysis of the previous alternatives to the Late Long Term and failing to show whether significant impacts will also result during the period between the Early Long Term and Late Long Term.	As described in the 2015 RDEIR/SDEIS, Alternative 4 is evaluated at the Late-Long-Term (LLT) timeframe because it would include 50-year incidental take permits. The other alternatives evaluated in the RDEIR/SDEIS, Alternative 4A, 2D, and 5A, are evaluated at the Early Long-Term (ELT) timeframe because the project implementation period is anticipated to be shorter. Where impacts differ at the Late Long-Term (LLT) period, discussions of these effects were included in the analysis. For CEQA impact assessment purposes, they are compared against Existing Conditions, as generally described in the Draft EIR/EIS. Therefore, the EIR/EIS provides a range of analyses for project operations for varying time periods which allows for an estimate of the potential environmental effect under a range conveyance facility operational scenarios.
2598	41	<p>As in the previous version of the DEIR/DEIS, the new environmental documents present arbitrary thresholds for determining significant effects, and even these unjustified thresholds are applied arbitrarily. For example, both the DEIR/DEIS and RDEIR/DSDEIS state, “[a] ‘difference’ was defined as a</p> <p>>5% difference between the pair of model scenarios in at least one water year type in at least 1 month.” DEIS/DEIR at 11-202; RDEIR/SDEIS Appendix A at 11-68. By contrast, in its “Methodology used for reaching a conclusion for the BDCP EIR/S for fish impacts related to water operations” the RDEIR/SDEIS, presents a different threshold for evaluation of flow impacts:</p> <p>In general, for habitat and migration-related impacts, if changes in flows were less than</p> <p>~15% under the alternative relative to the baseline for a small proportion of months in which a fish is present (e.g., 1 or 2 of 7 months), there was no adverse effect. If changes in flows were greater than 15% in a substantial proportion of total months (e.g., 2 of 3</p>	<p>Based on references from the RDEIR/SDEIS in this comment, the authors assume that the commenter is referring specifically to Chapter 11, Fish and Aquatic Resources. The methods used to determine whether an adverse or significant impact to fish would occur under an alternative are described in Section 11.3.2, Methods of Analysis. These methods have been vetted by topical experts, independent science reviews, and agency staff over the past several years. In addition to the noted model uncertainty, biology is not an exact science and wide error bands are necessary to ensure this uncertainty is considered in a reasonable manner. A logical, reasonable, unbiased, and repeatable method was developed to determine significant or adverse impacts, as defined in Section 11.3.2.</p> <p>It is important to clarify that a ‘difference’ is not the same as a ‘significant’ or ‘adverse’ impact. There are several ‘differences’ under each alternative that would not be substantial enough to be considered ‘adverse’ or ‘significant’.</p>

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		<p>months), it would be considered substantial and warranted further biological evaluation.</p> <p>RDEIR/SDEIS Appendix A at 11-78. Both of these thresholds are arbitrary. There is no basis in biology or hydrology to declare that smaller proportional changes are not significant. Such a conclusion can be based only on understanding the target species' (or ecosystem attribute's) response to change in conditions (e.g. is it linear or are there important non-linear, threshold effects?) and the baseline conditions involved (e.g., are conditions already close to a threshold value?). For example, the significance of a change in temperature can only be determined with reference to the starting temperature and known thresholds, and a 5% increase or decrease above or below 50oF has very different biological impacts on salmon egg mortality than a 5% increase or decrease above or below 56oF. Similarly, small changes in river flow can have dramatic effects on flow-related variables (e.g., temperature, sediment movement, habitat inundation) when the baseline flow is close to threshold levels. Readers cannot detect or evaluate the impact of a change in river flows simply by knowing the percentage change from a baseline (especially if that baseline is represented by modeling and not by current, real-world conditions). If two alternatives generate different model outcomes, the effect of the difference must be evaluated with reference to target species'/ecosystem attribute response and, in particular, the existence of threshold (non-linear) effects. That said, a change in flows of ~15% relative to full natural flows is likely to have a very large effect on ecosystem structure, function, and capacity to maintain species diversity. Richter et al. 2011. Application of the RDEIR/RDEIS' rule-of-thumb for evaluating the significance of flow alterations is likely to result in significant adverse effects that are not disclosed in the document.</p> <p>The RDEIR/SDEIS' attempt to justify these arbitrary thresholds is incorrect. The documents explain that the models deployed to evaluate effects have high variances, so if the modeled difference between alternatives is "small" then that difference may not actually materialize. But, unless the model deployed is known to produce biased estimates, then the model's variance (error) should be distributed around its estimates and modeled differences in effects between different alternatives – in other words, "small" differences projected from modeling are as likely to be larger in the real world as they are to be smaller. By assuming that "small" negative effects will not actually occur, the RDEIR/SDEIS inappropriately ignores their potential importance and fails to capture multiple small effects that may add-up to a large effect. In contrast, the RDEIR/SDEIS frequently finds that such "small" effects are worth discussing when the sign of the effect presents project alternatives in a favorable light. This results in a biased analysis of impacts.</p>	
2598	42	<p>Flawed Modeling of Impacts</p> <p>In many cases, our Prior Comments regarding hydrological impacts of operations have not been addressed and remain a concern, as outputs of the hydrological modeling will become inputs to other models that are used to evaluate biological and other impacts. Even though some public comments are addressed at times in the text, the CALSIM II, DSM2, and temperature modeling was not changed, and contains the same flaws we previously identified. Where our previous comments were addressed with additional discussion, the presentation of the information may have improved, but the impacts analysis based on flawed results is still inadequate. Despite new information in the discussion and results, the modeling still fails to adequately represent likely operations either under the baseline or under the proposed project. For example, the following analysis and discussion still results</p>	<p>CALSIM II is a water operations model that simulates Delta flows for regulatory and operational criteria assumed under the Existing Conditions, No Action Alternative, and action alternatives on a monthly time step. The model simulates compliance with salinity standards in the Delta on a monthly time-step. CALSIM II relies on an "Artificial Neural Network" (ANN) for monthly averaged flow versus salinity relationships in the Delta. DSM2 uses the monthly CALSIM II Delta flow results, and simulates Delta hydrodynamics and salinity from the water year 1976 to water year 1991, on a 15-minute time step and accounts for the sea level rise and the proposed restoration. Flow inputs assumed in DSM2 modeling for the EIR/EIS are based on monthly CALSIM II outputs downscaled to a daily time step using WY 1976 – 1991 (16 years) historical Delta inflow patterns. The daily patterns assumed are based on observed historical Delta flows, and do not represent any sub-monthly operational adjustments that could occur to address any potential issues with salinity control in the Delta under the EIR/EIS action alternatives. In other words, the compliance with Delta salinity standards</p>

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		<p>in a flawed document: In response to public comments, the RDEIR/SDEIS (at 8-50 and 8-51) explains why water quality errors and exceedances occur in the model results. Most of the water quality exceedances are due to the change in compliance location from Emmaton to Three Mile Slough (TMS) in the original alternatives (but not in Existing Conditions (“EC” or NAA). Page 4 of Appendix 8H Attachment 1 discloses that in Alternative 4 H3, moving the compliance point from TMS to Emmaton decreases exceedances from 28% to 15%, closer to the 13% in the NAA. Since CALSIM II has water quality compliance as its highest priority, any exceedances mean that it is not feasible for the model to comply. However, feasibility in the CALSIM II model is constrained by the model assumptions, and is not the same as feasibility in the real world. Also, non-compliance may be due to errors in the monthly to daily flow patterning in the ANN model (accounting for 1% error according to Appendix 8H Attachment 1). Real-world operations would comply most of the time as stated on p. 8-53, however as we note above, this outcome is far from certain. The new discussion, while helpful for understanding the sources of error, does not provide insight into expected water quality compliance under the alternatives, and is simply an explanation for why the modeling remains flawed.</p>	<p>was only modeled on a monthly time-step. However, daily averaged salinity outputs from DSM2 simulations were used to evaluate compliance with salinity standards under the alternatives in the EIR/EIS.</p> <p>Given that the impact analysis was relying on a comparative analysis, and the action alternatives and the No Action Alternative have consistent daily patterning assumptions the changes in the frequency of compliance of the Delta water quality standards is representative of the effects of the project Alternatives, even though the absolute value may not be fully representative of actual SWP/CVP operations under all the days of the over 5,800 days of simulation period. A modeling sensitivity analysis was included in Appendix 8H to demonstrate whether the resulting salinity exceedances are due to the modeling limitations or if they are an impact of the project alternatives. As explained in Appendix 8H, the majority of the exceedances are because of the differences in the assumed operational criteria under the EIR/EIS alternatives. Therefore, the daily patterning assumptions did not affect the overall water quality impact conclusions in the EIR/EIS.</p>
2598	43	<p>Flawed Modeling of Impacts In many cases, our Prior Comments regarding hydrological impacts of operations have not been addressed and remain a concern, as outputs of the hydrological modeling will become inputs to other models that are used to evaluate biological and other impacts. Even though some public comments are addressed at times in the text, the CALSIM II, DSM2, and temperature modeling was not changed, and contains the same flaws we previously identified. Where our previous comments were addressed with additional discussion, the presentation of the information may have improved, but the impacts analysis based on flawed results is still inadequate. Despite new information in the discussion and results, the modeling still fails to adequately represent likely operations either under the baseline or under the proposed project. For example, the following analysis and discussion still results in a flawed document: Regarding real-world operations, Table 8-13a on pages 8-16 and 8-17 shows only one 35-day exceedance at Emmaton since 1995. [footnote#17: This table is inaccurate.] However there are 14 other exceedances on the San Joaquin River and Old River. Thus the revised discussion in the RDEIR/SDEIS confirms that neither the CALSIM II modeling (which shows many more exceedances will occur) nor the discussion (which claims no exceedances will occur) are an informative representation of likely real-world operations in relation to water quality, as we stated in Prior Comments (at 67). This is a continued failure to disclose impacts, and potentially invalidates any conclusions based on the water quality modeling.</p>	<p>The models used to support the water quality assessment are planning tools to assess a specific project operations and facilities on a historical hydrology, not to replicate historical conditions. Extensive discussion is provided in Section 8.3.1.1 of Chapter 8, Water Quality, regarding the suitability of these models for their use in the water quality assessment and limitations of what aspects of facilities operations can be represented by these models. Extensive documentation has been provided in Chapter 5 and supporting appendices, and Chapter 8 explaining the rationale, assumptions, and limitations of these models, as well as their validity for use in comparative assessments such as was conducted in the EIR/S.</p>
2598	44	<p>Flawed Modeling of Impacts In many cases, our Prior Comments regarding hydrological impacts of operations have not been addressed and remain a concern, as outputs of the hydrological modeling will become inputs to other models that are used to evaluate biological and other impacts. Even though some public comments are addressed at times in the text, the CALSIM II, DSM2, and temperature modeling was not changed, and contains the same flaws we previously identified. Where our previous comments were addressed with additional discussion, the presentation of the information may have improved, but the impacts analysis based on flawed results is still inadequate. Despite new information in the discussion and results, the modeling still fails to adequately represent likely operations either under the baseline or under the proposed project. For example, the following analysis and discussion still results in a flawed document: Figures 4 through 6 of Appendix 8H Attachment 1 show a bias in the CALSIM II programming where the CALSIM II electrical conductivity standard at times exceeds the D1641 standard. Since the modeled standard</p>	<p>Comments made on the 2013 DEIR/DEIS (the “Prior Comments” noted by the commenter) will be addressed in the FEIR/FEIS as required by CEQA and NEPA.</p> <p>The models used to support the water quality assessment are planning tools to assess a specific project operations and facilities on a historical hydrology, not to replicate historical conditions. Extensive discussion is provided in Section 8.3.1.1 of Chapter 8, Water Quality, regarding the suitability of these models for their use in the water quality assessment and limitations of what aspects of facilities operations can be represented by these models. Extensive documentation has been provided in Chapter 5 and supporting appendices, and Chapter 8 explaining the rationale, assumptions, and limitations of these models, as well as their validity for use in comparative assessments such as was conducted in the EIR/S.</p> <p>Please see Master Response 14 for more information regarding water quality, and Master Response 30 for</p>

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		should always be equal to or lower than the D1641 standard in order to properly model compliance, any time the D1641 standard is exceeded by the modeled criteria, it indicates environmental protection was not conservatively modeled and is not a priority for this project (however there are also times when the modeling underestimates project exports and overestimates Delta outflow—see Prior Comments at 59-60). The attachment (at 11) claims that the majority of the exceedances are not due to limitations of the modeling tools, but due to assumed operational criteria. Flawed assumptions lead to flawed models with flawed outputs, and as a result, the RDEIR/SDEIS provides no examples or analysis of operations needed to comply with water quality standards. This is a continued failure to disclose likely project operations and impacts.	more information regarding the modeling approach.
2598	45	Flawed Modeling of Impacts In many cases, our Prior Comments regarding hydrological impacts of operations have not been addressed and remain a concern, as outputs of the hydrological modeling will become inputs to other models that are used to evaluate biological and other impacts. Even though some public comments are addressed at times in the text, the CALSIM II, DSM2, and temperature modeling was not changed, and contains the same flaws we previously identified. Where our previous comments were addressed with additional discussion, the presentation of the information may have improved, but the impacts analysis based on flawed results is still inadequate. Despite new information in the discussion and results, the modeling still fails to adequately represent likely operations either under the baseline or under the proposed project. For example, the following analysis and discussion still results in a flawed document: The real-world track record of the projects (in table 8-13a) is a new analysis that perhaps informs this subject more than the modeling. Since 14 of the 15 exceedances since 1995 occurred in closer proximity to, or downstream of, the existing export pumps (i.e., San Joaquin River), it is reasonable to assume (regardless of modeling) that operators will manage the proposed facilities with the same margin of error in relation to water quality standards as in the past and, therefore, that real-world operations at the proposed intakes on the Sacramento River will create new exceedances on the Sacramento River. The revised documents provide no analysis of changes in existing operations needed to improve compliance, and thus do not propose to mitigate this reasonably foreseeable, yet undisclosed, significant adverse effect of the NAA and alternatives. The RDEIR/SDEIS states that it is “unlikely that there would be increased frequency of exceedance of agricultural electrical conductivity objectives in the interior or southern Delta” (at 8-242) or that increased long-term and drought period average electrical conductivity would occur relative to EC. There is no support for this claim since credible operations scenarios and impacts are not disclosed.	<p>The EIR/EIS hydrologic and water quality modeling was conducted in a manner that met water quality objectives if SWP and/or CVP water was available following deliveries to senior water rights holders, upstream water users protected by Area of Origin statutes, and regulatory flow and water quality criteria. The purpose of the EIR/EIS was to compare projected conditions that could occur under the action alternatives with projected conditions that could occur under the No Action Alternative and conditions that could occur if the SWP and CVP continued to be operated in accordance with Existing Conditions assumptions. The EIR/EIS evaluates long-term operation of the SWP and CVP over an 82-year long hydrologic period with extended wet periods and dry/critical dry periods. The evaluation is a comparative analysis to determine the incremental differences between conditions under the action alternatives and conditions under the Existing Conditions and the No Action Alternative. The analyses were not conducted to identify specific values or to respond to short-term emergency situations, such as the ongoing drought. Separate engineering and environmental studies have been and will continue to be prepared when water quality criteria and other regulations are modified in emergencies.</p> <p>Please see Master Response 14 for more information regarding water quality, and Master Response 30 for more information regarding the modeling approach.</p>
2598	46	Flawed Modeling of Impacts In many cases, our Prior Comments regarding hydrological impacts of operations have not been addressed and remain a concern, as outputs of the hydrological modeling will become inputs to other models that are used to evaluate biological and other impacts. Even though some public comments are addressed at times in the text, the CALSIM II, DSM2, and temperature modeling was not changed, and contains the same flaws we previously identified. Where our previous comments were addressed with additional discussion, the presentation of the information may have improved, but the impacts analysis based on flawed results is still inadequate. Despite new information in the discussion and results, the modeling still fails to adequately represent likely operations either under the baseline or under the proposed project. For example, the following analysis and discussion still results in a flawed document: Tables EC-1 through EC-9 in Appendix 8H were revised to show the same or additional days of electrical conductivity standard exceedances for NAA and the other alternatives, with no changes for Existing Conditions.	<p>Please see the response to comment 45 for information regarding the comparative approach to the analysis.</p> <p>Please see Master Response 14 for more information regarding water quality, and Master Response 30 for more information regarding the modeling approach.</p>

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		Using the LLT water year type instead of the Existing Conditions water year type to determine electrical conductivity standards caused the 0-5% increases in modeled violations. Alternative 4 H3 and H4 are now out of compliance for the Emmaton electrical conductivity standard 42-43% of the days when the objective applies, and NAA is out of compliance 25% of the time, with Existing Conditions still out of compliance 11% of the time. All we can conclude is that the model performance related to actual proposed (D1641-compliant) operations has gotten worse, and the modeling is less relevant than ever to the real world, as well as to the impact conclusions, which did not change despite this significantly worse compliance.	
2598	47	Flawed Modeling of ImpactsIn many cases, our Prior Comments regarding hydrological impacts of operations have not been addressed and remain a concern, as outputs of the hydrological modeling will become inputs to other models that are used to evaluate biological and other impacts. Even though some public comments are addressed at times in the text, the CALSIM II, DSM2, and temperature modeling was not changed, and contains the same flaws we previously identified. Where our previous comments were addressed with additional discussion, the presentation of the information may have improved, but the impacts analysis based on flawed results is still inadequate. Despite new information in the discussion and results, the modeling still fails to adequately represent likely operations either under the baseline or under the proposed project. For example, the following analysis and discussion still results in a flawed document: The RDEIR/SDEIS addresses public comments regarding the conflation of Three Mile Slough and Emmaton (Prior Comments at 65) by removing the top row from the Alternative 4 table EC-4, however this row was not removed in the other tables (EC-1 through EC-9). This represents a continued failure to present information clearly, leading to possible confusion and misleading of the public and decisionmakers. [footnote#18: The RDEIR/SDEIS inconsistently addresses whether changes to the Emmaton salinity standards were included in the modeling and analysis.]	Please see Master Response 14 for how Emmaton is maintained as a compliance location for Alternatives 4, 4A, 2D, and 5A, whereas the other project alternative descriptions propose to move the compliance location from Emmaton to Three Mile Slough. Please also see Master Response 30 regarding modeling.
2598	48	Flawed Modeling of ImpactsIn many cases, our Prior Comments regarding hydrological impacts of operations have not been addressed and remain a concern, as outputs of the hydrological modeling will become inputs to other models that are used to evaluate biological and other impacts. Even though some public comments are addressed at times in the text, the CALSIM II, DSM2, and temperature modeling was not changed, and contains the same flaws we previously identified. Where our previous comments were addressed with additional discussion, the presentation of the information may have improved, but the impacts analysis based on flawed results is still inadequate. Despite new information in the discussion and results, the modeling still fails to adequately represent likely operations either under the baseline or under the proposed project. For example, the following analysis and discussion still results in a flawed document: 7. Previously we commented on the inconsistency of the export to inflow (“E:I”) ratio definition. The BDCP approach calculates inflow below the North Delta Diversion (“NDD”) intakes and does not include diversions from the NDD as “exports.” However, in operational variants H2 and H4 a different calculation of E:I (favored by NMFS) was employed, which includes NDD diversions as exports. The new alternatives abandon the NMFS-favored approach and all three alternatives 4A, 2D, and 5A (including variants H2 and H4) now use the BDCP approach. This change increases the confusion caused by inconsistent methods and unnecessarily complicates disclosure of impacts because scenarios H2 and H4 follow the NMFS approach in all alternatives—except in alternatives 4A, 2D, and 5A. We also noted previously that the sensitivity analysis memo (DEIS/DEIR at 5A-D148) characterized the two methods of calculating E:I as minimally different. The preferred project now adopts the BDCP approach	The commenter is correct in that the Export/Inflow ratio requirements used in most of the alternatives in the Draft BDCP EIR/EIS were defined as in the State Water Resources Control Board Decision 1641 (developed without the concept of the north Delta intakes) with the Exports defined at the south Delta intakes, and the inflows defined at a location downstream of the proposed north Delta intakes. Alternative 4H4 modified the Export/Inflow definition to include the north Delta and south Delta intakes in the Export value, and moved the Inflow location upstream of the north Delta intakes. The likely operational changes from the different computation approaches of the Export/Inflow ratio are presented through a sensitivity analysis in the Appendix 5A Section D.10.1 of the Draft BDCP EIR/EIS. The CWF alternatives as presented in the Final EIR/EIS were developed to be consistent with the provisions of State Water Resources Control Board Decision 1641.

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		<p>of not including NDD diversions in the export total; on a monthly average this approach shifts exports from July-Aug to May-Jun and reduces north Delta bypass flows and Delta outflows in June, both of which are indications that actual Delta flows (not monthly averages) would be worse for fish. It also tends to shift exports from south to north and to increase Folsom carryover storage. These changes reflect biases of the project proponents rather than the coequal goal of flow conditions that are more beneficial to fish – flow conditions for fish are diminished by the E:I ratio definition in alternatives 4A, 2D, and 5A. In addition to reducing entrainment, the E:I ratio enhances the natural variability of Delta outflow, and exempting the north Delta intakes from its export restriction would reduce that important variability and the benefit it provides to fish.</p>	
2598	49	<p>The RDEIR/SDEIS repeatedly obscures or minimizes impacts of project alternatives by comparing those impacts to assumed future operations (the NAA) that would significantly impact native species. One example of this practice is the erroneous comparison of water temperatures under project alternatives with extremely high temperatures predicted to occur under the NAA to reach a conclusion that operations under the project alternatives will be “not adverse,” as discussed supra. Because the CVP and SWP will need to modify operations to adapt to the effects of climate change and avoid jeopardizing the continued existence of listed species, the NAA does not represent likely operating conditions of the CVP and SWP in the future. Significant adverse impacts to native species will occur under the NAA. Thus, a finding that modeled impacts of project alternatives are “similar to” the NAA does not mean that the impacts are less than significant or not adverse.</p> <p>For all of these reasons, the RDEIR/SDEIS still fails to adequately assess environmental impacts of these alternatives. Examples of these failings and others are presented below in our critique of species- specific and ecosystem attribute-specific impacts that are described in the updated RDEIR/RDEIS’ Chapter 11 (Fish and Aquatic Resources), which describes amendments and revisions to the analyses of previously described (BDCP) alternatives.</p>	<p>The comparison between the conditions under the action alternatives and the No Action Alternative indicate the changes caused by the Project, and not by changes in climate change, sea level rise, and population growth that would have occurred with or without the Project. As described in Chapter 5, Water Supply, the BDCP EIR/EIS analyses assume continued implementation of reservoir operations criteria due to climate change or other reasons, in accordance with the requirements under the CEQA definition of Existing Conditions and under the NEPA definition of the No Action Alternative. It would be speculative to consider future changes to reservoir operations in the No Action Alternative and Cumulative Impact Analysis. Such changes are not included in Alternatives 1 through 9 because they would not support the BDCP Project Objectives or Purpose and Need statement. Changes in reservoir operations criteria would only occur following detailed analyses, including project-specific CEQA and NEPA analyses, if appropriate. Following adoption of changes to reservoir operations criteria, DWR and Reclamation would need to determine if changes in the SWP and CVP would be necessary. If such changes were included in the assumptions for the action alternatives and the No Action Alternative, the incremental differences due to implementation of the action alternatives would be similar to the incremental differences presented in the EIR/EIS.</p>
2598	50	<p>a. Flawed Modeling and Analysis of Impacts to Longfin Smelt</p> <p>The RDEIR/SDEIS continues to analyze impacts to Longfin Smelt populations by misapplying regression equations derived from Kimmerer et al. (2009). Our Prior Comments described numerous inadequacies with this approach (see Prior Comments at 136-141), including that such an approach ignores more recent published findings of the Longfin Smelt population response to changes in Delta outflow. See, e.g., Thomson et al. 2010; Mac Nally et al. 2010. Subsequent to our Prior Comments, Nobriga and Rosenfield (in press) developed a more refined analysis of the Longfin Smelt population response to changes in freshwater flow. Among other outcomes, this study documents the important effect of initial population size on population size in subsequent years (“stock-recruit relationships”). See also Thomson et al. 2010. However, stock-recruit relationships are not incorporated into the RDEIR/SDEIS’s approach to evaluating Longfin Smelt populations. Because Longfin Smelt population size in any given year is affected by both Delta outflow and abundance of the previous generation, the sequence of annual winter-spring Delta outflow conditions has a large impact on population abundance – for example, several dry years in a row can produce abundance declines that cannot be reversed by occasional wet years. As applied by the RDEIR/SDEIS, the Kimmerer et al. (2009) regression relationships will show that</p> <p>years with the same winter-spring X2 produce the same estimate of Longfin Smelt</p>	<p>Additional examination of potential effects on longfin smelt is ongoing as part of the California WaterFix 2081 permitting, including consideration of Nobriga and Rosenfield (2016). The analysis focuses on an updated version of Kimmerer et al. (2009), but gives the same basic conclusion. The Nobriga and Rosenfield model does not provide as good a fit to the historical data as analyses based on X2 and change points. It is acknowledged that prior abundance appears to have some importance, but incorporation of change points for clam invasion and the Pelagic Organism Decline results in abundance indices that are well predicted solely by winter-spring abundance and without explicit consideration of stock size. This was felt to be a reasonable basis for use of Kimmerer et al. (2009), and updates in the 2081 permitting.</p>

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		abundance, regardless of the abundance in previous years; this will lead to overestimation of Longfin Smelt abundance when wet years follow dry years and underestimates environmental impacts of the alternatives on Longfin Smelt.	
2598	51	Despite the wealth of studies cited in our Prior Comments demonstrating that tidal marsh habitat restoration is unlikely to provide substantial benefit to Longfin Smelt, the RDEIR/SDEIS continues to assert that such habitat will benefit Longfin Smelt populations. The revised Chapter 11 erroneously claims that the NEPA finding for Alternative 2D remains “adverse” specifically because of its “lack of extensive tidal habitat restoration.” RDEIR/SDEIS Appendix A at 11-217. This and similar conclusions in the RDEIR/SDEIS are incorrect and lack substantive scientific support. By studying long-term patterns of population dynamics of different age classes of Longfin Smelt, Nobriga and Rosenfield (in press) disaggregated forces that are likely to contribute to the extreme decline in this once abundant forage fish. They found that freshwater flow out of the Delta drives production of early juvenile Longfin Smelt and that there was no time trend in this age class after accounting for Delta outflow (no other physical variable was an important predictor of Age 0 Longfin Smelt production). In particular, they found no evidence that changes to the estuarine food web had affected spawner-to-recruit productivity. Non-flow related declines in Longfin Smelt productivity were detected in Longfin Smelt survival between Age 0 and Age 2. During this part of their life cycle, Longfin Smelt aggregate almost exclusively in deep water habitats and most of the population is found in mesohaline or marine waters, see Rosenfield and Baxter 2007, far from proposed habitat restoration projects (CM4). Thus, Nobriga and Rosenfield (in press) provide yet more evidence that the presumed benefits of CM4 to Longfin Smelt (e.g., via the production of food to support larval and young juvenile fish) are unlikely. Thus, all NEPA/CEQA determinations regarding Longfin Smelt are suspect to the extent that they rely on the benefits that the RDEIR/SDEIS’s assumes will accrue from implementation of CM4 (e.g., Alt 4).	The preferred alternative, California WaterFix, proposes a longfin smelt research program, one of the elements of which would be longfin smelt’s use of tidal wetlands and potential for benefit from food production exported from restoration sites. Please see Master Response 5 for information about effects of tidal restoration on native fishes assumed in the analysis. Numerous comments were received that focused on various elements of the BDCP. Where the comments focused on elements of the BDCP that overlap with the elements of Alternatives 2D, 4A, or 5A (e.g., CM1 as it comprises of the North Delta Diversions, tunnels, and supporting facilities), specific responses are presented. Where comments raised issues as to whether the BDCP and other HCP/NCCP alternatives in the 2013 Draft EIR/EIS were potentially feasible and could function as an alternative for purposes of meeting CEQA and NEPA’s requirements to analyze a reasonable range of alternatives to the proposed project (e.g., issues regarding the BDCP Effects Analysis or financial feasibility), responses are presented generally in Master Response 5. Where comments submitted on the BDCP were focused on elements outside the scope of the environmental analysis or viability of the BDCP and other HCP/NCCP alternatives within the context of CEQA/NEPA (e.g., request of specific revisions to the BDCP related to mapping or references), no specific responses are provided and further consideration will be given to these comments, and any revisions to the Draft BDCP would only be made, if an HCP/NCCP alternative was ultimately approved at the conclusion of the CEQA/NEPA process.
2598	52	The RDEIR/SDEIS proposes numerous “mitigations” that will not produce measureable improvement in conditions for Longfin Smelt. For example, AQUA-22a, AQUA-22b, and AQUA-22c consist of efforts to “evaluate”, “model”, and to “consult with USFWS and CDFW” to identify and implement feasible mitigations of effects to Longfin Smelt arising from alternatives and operations of the water conveyance facilities. But these actions are not mitigation measures; they are part of the process to identify such measures. They do not provide specific performance measures to show how impacts will be reduced to less than significant levels and they do not appear to be enforceable. See Tit. 14, Cal. Code Regs. § 15126.4. The RDEIR/SDEIS’s “not adverse” determinations for Alternatives 1A, 1B, 1C, 3, 5, and 5A improperly rely on implementation of AQUA-22a, AQUA-22b, and AQUA-22c “mitigations.”	Addressing some mitigation more programmatically is appropriate when the specifics of certain impacts cannot reasonably be determined because, for example, they are dependent on future actions. Where appropriate, performance standards are set forth for such measures. Please see Master Response 22 for a discussion on mitigation measures and Master Response 2 for a discussion of the project vs. program level analysis in the EIR/EIS and why this is adequate and allowed under CEQA and NEPA.
2598	53	The RDEIR/SDEIS classifies as “not adverse” differences of modeled effects between alternatives that are less than <5%. As described supra, this is an arbitrary and biologically meaningless threshold.[footnote#19: In some cases (mercury 4.2-31, flows 4.2-39, adult migration flows 4.3.7-179, sturgeon incubation flows 4.3.7- 317, 4.4.7-171) it appears that the standard for identifying an adverse effect is actually 10%, although the reason for this shifting standard is not made clear.] The RDEIR/SDEIS concludes that effects of water operations on migration conditions for Chinook salmon (AQUA-48; see RDEIR/SDEIS Appendix A at 11-236) will be “not adverse” for the winter-run despite the findings that, in all water year types, through-Delta survival is expected to decline compared to the NAA under Alternative 4 (all operational variants and overall; Table 11-mult-54), Alternative 5	The analysis of effects on fish uses the available data and models to assess the effects of the action alternatives, using the existing conditions and No Action Alternative as baselines for CEQA and NEPA, respectively. The DPM has undergone substantial evaluation and review by NMFS, DFW, DWR, and Reclamation over the course of the development of the BDCP analysis and has been determined to be the best available analytical method for assessing through-Delta migration and survival of salmonids. Additional analysis provided in the BA indicates a similar magnitude and direction of effect. However, none of this modeling can take into account real-time operations and the ability to adjust NDD bypass flows or other flows in the Delta to ensure that changes in migration through the Delta are not significant. Given the small magnitude of modeled difference between Alternative 4A and NAA, and the ability to adjust operations in real-time to further minimize effects on fish caused by the CWF, the determination that this effect in Not

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		<p>(Table 11-mult- 57), and Alternative 7 (Table 11-mult-59). These findings rely on the Delta Passage Model (DPM); there is no indication that the RDEIR/SDEIS has considered our Prior Comments that DPM is inappropriate and likely to underestimate mortality for all but the largest juvenile salmonids (e.g., late-fall run Chinook salmon of hatchery origin or steelhead). The RDEIR/SDEIS argues that survival under the alternatives would be “similar to or slightly lower than NAA.” See, e.g., RDEIR/SDEIS Appendix A at 11-245. This inappropriately minimizes the effect of persistent survival declines projected for Alternatives 4, 5, and 7. Through-Delta survival of winter-run, and Central Valley Chinook salmon in general, is already extremely low. See Williams 2010; NMFS Recovery Plan 2014 at 127, and at Appendix B Attachment A; NMFS 2009 Biological Opinion; RDEIR/SDEIS Appendix A at 11-1330. Further declines in survival will have significant impacts to this imperiled species, regardless of whether the RDEIR/SDEIS presumes the decline caused by an alternative is “small.”</p>	<p>Adverse is appropriate.</p> <p>Please see the Executive Summary of the Final EIR/EIS, impact table for more information about ‘differences’ and ‘determinations’.</p>
2598	54	<p>Numerous potential impacts to winter-run Chinook salmon viability are identified upstream of the Delta; however, the RDEIR/SDEIS erroneously finds that these outcomes will be “not adverse” either because the modeled differences between an alternative and the NAA are deemed to be “small” or because the RDEIR/SDEIS minimizes or ignores the outcomes of its own analyses. For example, declines in storage volumes behind Shasta Dam (a proxy for subsequent temperatures and flow volumes during the winter-run Chinook salmon incubation and early rearing phases) are expected in at least some year types for all Alternative 4 operational variants and Alternative 7. Partially as a result, temperatures are projected to increase substantially in most year types at Bend Bridge over multiple months during the incubation period for winter-run Chinook salmon (for example, at Table 11-mult-33 for Alternative 4_H3; at Table 11-mult-38 for Alternative 4_H1 and _H4; at Table 11-mult-43 for Alternative 7). Using Reclamation’s egg mortality model, the RDEIR/SDEIS finds that under Alternative 4-H3 winter-run Chinook salmon egg mortality will increase by 76% and 11% compared to NAA under Below Normal and Dry conditions respectively, but it then argues that these proportionate increases are “small” on an absolute scale.</p> <p>RDEIR/SDEIS Appendix A at 11-221. This reflects inconsistency in how the RDEIR/SDEIS (and the DEIR/DEIS) treat modeling results; in most cases, the environmental documents are at pains to argue that modeling outputs are for comparative purposes only and that relative changes between</p> <p>alternatives, not absolute values, should be used to evaluate project impacts. [footnote#20: For example, the BDCP Effects Analysis Entrainment Appendix (Appendix 5.B, which is still the basis for determining entrainment effects in the RDEIR/SDEIS) states, “As with all such analyses, caution should be applied when interpreting absolute differences (e.g., numbers of fish) and more emphasis should be put on relative differences between scenarios.” RDEIR/SDEIS Appendix 5.B at 5.B-iii (emphasis added).] Faced with very large proportionate increases in winter-run egg mortality, the RDEIR/SDEIS makes the opposite argument. Winter-run Chinook salmon egg-to-fry mortality rates are already chronically high compared to typical Chinook salmon populations [footnote#21:21 Mean egg-to-fry survival rates for winter-run Chinook salmon are 26.4% (USFWS 2014), well below the 38%</p> <p>average estimate for Chinook salmon populations provided by Quinn (2005). These rates are substantially lower than those predicted by SALMOD and Reclamation’s egg mortality model.] or desired conditions, thus large proportional changes in survival are likely to reflect large absolute changes, as well.</p>	<p>There are reasons for all results being called small or infrequent that are based on best professional judgment and these are described in the text.</p> <p>Although temperature exceedances increase in some water year types in the cited tables, they also go down in other water year types and overall, the values are small (5-11%). Note also that we did not point out that there would be several water year types and months in these tables in which temperature exceedances would be reduced under the alternatives cited by the comments, which would constitute a benefit of the alternative. The same reasoning applied here – they were infrequent when considering all water year types combined.</p> <p>Regarding the egg mortality model, the analysis maintains the relative comparisons between an alternative and a baseline as recommended by the modelers, but a switch to absolute, or raw, differences was necessary in this case due to mathematical artifacts associated with the very low mortality values in the cited water year type (below normal) (NAA: 1.8% of the winter-run population; H3: 3.2% of the winter-run population). Relative differences are large (~76%) when the denominator of the calculation is low (1.8% in this case). Further, we could have presented this analysis as survival of fish, as opposed to mortality, which would have been 98.2% for NAA and 96.8% for H3, translating into a 1.4% relative reduction ((98.2%-96.8%)/98.2%) in survival. This would indicate a very small change in survival on a relative scale. Ultimately, this is a mathematical artifact and we reconciled it by disclosing absolute differences in addition to the relative differences to illustrate this.</p>

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2598	55	<p>Reclamation’s egg mortality model is notoriously inaccurate, especially when dry conditions persist over many years. Reclamation’s egg mortality model and SALMOD model have significantly underestimated mortality of winter-run Chinook salmon during the current drought. In 2014 nearly the entire brood class of winter-run Chinook salmon eggs and fry were killed by high temperatures upstream of Red Bluff Diversion Dam, despite assurances from Reclamation that its operations would avoid such high mortality. [footnote#22:NMFS (2015) found that, “Even though State Water Resources Control Board Orders 90-5 and 91-1 require Reclamation to operate Keswick and Shasta dams to meet a daily average temperature of 56oF at Red Bluff Diversion Dam (RBDD) [or at a temperature compliance point (TCP) modified when the objective cannot be met at RBDD based on Reclamation’s other operational commitments including those to water contractors, D-1641 regulations and criteria, and projected end of September storage volume], nearly every year, Reclamation has exceeded the TCP at some point throughout the temperature control season.” See NMFS 2015 at 5.] As a result, the environmental impacts of the alternatives during Dry and Critically Dry years are likely to be greater than those identified in the RDEIR/SDEIS using these models. Thus, the claim that large percentage changes in egg survival related to operations of different alternatives amount to small absolute changes is arbitrary. Furthermore, the SacEFT modeling tool predicts declines in four of six habitat metrics for winter-run Chinook salmon in the Upper Sacramento River under Alternative 4_H3 as compared to the No Action Alternative, including spawning habitat weighted usable area (by 28%) and incubation success (by 3%). The RDEIR/SDEIS presents similar results for other Alternative 4 operational variants and Alternative 7. Despite these results, the RDEIR-SDEIS concludes that effects of Alternatives 4 and 7 will be “not adverse” upstream. Such a finding ignores that river temperatures upstream during winter-run incubation are already extremely high and flow conditions jeopardize winter-run rearing success, see Cunningham et al. 2015, Michel et al 2015, FWS 2014; both cause intolerable effects to winter-run productivity, see NMFS 2014 Recovery Plan, and significantly reduce the spawning range of winter-run Chinook salmon to very small area. The RDEIR/SDEIS’ conclusions regarding upstream impacts are incorrect, and fail to disclose that these alternatives are likely to result in significant adverse impacts on winter-run Chinook salmon. Comparison of impact analyses for winter-run Chinook salmon from operations under Alternative 3 as compared to those expected from Alternative 4 and Alternative 7 do not reveal why the RDEIR/SDEIS finds that the former will have “adverse” impacts upstream but the latter two will have “not adverse” effects. SacEFT projected negative outcomes for each of these alternatives for winter-run Chinook salmon and accumulated degree days increased by >5% in Alternative 4_H1, Alternative 4_H3, and Alternative 7 (degree days are projected to increase 16% and 11% on average in certain months relative to the NAA for Alternative 4_H1 and Alternative 4_H3 respectively). As noted earlier, the NAA will have devastating effects on the endangered winter-run Chinook salmon, so the finding that these alternatives will further exacerbate conditions means that each would result in significant adverse impacts and should require mitigation to reduce or avoid these impacts.</p>	<p>Please refer to the response for Comment 54 above.</p> <p>In addition, in reference to a comparison among alternative 3,4 and 7 of Impact AQUA-40, please see the section within each impact labeled “NEPA Effects” for the reasoning behind each determination. There is much more to the analysis than SacEFT results. The analysis is complete and incorporates flow and temperature effects using a number of analytical tools. When discrepancies among tools result, a description of how this was resolved is included in the text.</p>
2598	56	<p>The change in NEPA determination for impacts to winter-run Chinook salmon upstream under Alternative 2A (from “Adverse” to “Not Adverse”) is arbitrary, unwarranted, and misleading. The RDEIR/SDEIS finds that, “the percentage of years with good (low) juvenile stranding risk under A2A_LLT is predicted to be 45% (14% on an absolute scale) lower than under NAA ... the quantity and quality of juvenile rearing habitat in the Sacramento River would be lower under A2A_LLT relative to NAA.” RDEIR/SDEIS Appendix A at 11-128. Regarding this impact, the RDEIR/SDEIS reports: “SALMOD and SacEFT [models] predicted contradicting results regarding habitat-related mortality. SacEFT found that juvenile</p>	<p>This change was the necessary result of a refinement in the use of these biological models to determine significance due to new information. All changes have been noted in track changes in the RDEIR/SDEIS to allow the reader to easily see how the text of the Impact changed, including justification for why it is now “Not Adverse”. Please refer the Final EIR/EIS impact table for a complete summary and description.</p> <p>The assertion by the commenter that the method used “confuses a model’s convenience with the accuracy of its projections” is incorrect. SALMOD was preferred over Reclamation’s Egg Mortality Model and SacEFT because it assesses how changes to earlier life stages can affect later life stages. A change in an earlier life</p>

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		<p>stranding risk is expected to increase,” id., but the document discounts the SacEFT results in favor of SALMOD results. Similarly, even though Reclamation’s model predicts relative increases in egg mortality for winter-run Chinook salmon under this alternative compared to the NAA (overall and particularly in Below Normal and Dry years), the RDEIR/SDEIS favors SALMOD’s output that finds no degradation in upstream incubation and rearing conditions of Alternative 2A relative to those under the NAA (which, as noted above, are already unacceptable). The environmental documents explain that the preference for SALMOD results stems from that model’s ability to combine all effects on early life history into one estimate of effect. But this rationale says nothing about the accuracy or relative value of the competing models. Discounting the projections of two models (Reclamation’s Egg Mortality Model and SacEFT) because a third model synthesizes projections of multiple effects in to a single estimate confuses a model’s convenience with the accuracy of its projections. Projections of increased egg mortality and juvenile stranding are important and must be evaluated more thoroughly in the context of the future viability of this endangered species. The data presented shows that significant impacts will occur that are not disclosed in the RDEIR/SDEIS.</p>	<p>stage does not necessarily mean there would be an effect on a later life stage (e.g., due to density dependence or a population bottleneck). The Egg Mortality Model and SacEFT do not address this issue, whereas SALMOD does.</p>
2598	57	<p>The RDEIR/SDEIS acknowledges that through-Delta flows have “considerable importance for downstream migrating juvenile salmonids ... and would be affected by the north Delta diversions.” RDEIR/SDEIS Appendix A at 11-238. However, the RDEIR/RDEIS continues to understate the impacts of changes in flow volume to migrating winter-run Chinook salmon (and other fish) by representing these changes as the average within certain months across years. Thus, it finds that flows downstream of the North Delta Diversion (NDD) will be reduced relative to NAA by 11-23% (in months between November and May); 17% (in November), and up to 25% (averaged over all water year types) for Alternatives 4, 5, and 7, respectively. These findings represent very large changes in average flow downstream of the</p> <p>NDD, but, fish will experience even greater reductions in flow in certain year types under each of these alternatives, and the use of averaging obscures the fact that flow reductions greater than the average will occur in a high proportion of years (see Appendix 11C, CALSIM II Model Results utilized in the Fish Analysis). The environmental documents further obscure the impacts of reduced through-Delta flows by describing bypass flow criteria that will be “managed in real time to minimize adverse effects of diversions at the north Delta intakes on downstream-migrating salmonids.” RDEIR/SDEIS Appendix A at 11-238. Although the document asserts that impacts on winter-run Chinook salmon migration will be minimized with real-time fish sampling and adjustment of diversion rates when fish are in the immediate vicinity of the NDD, this is unrealistic because it overstates both our current understanding of fish migration behavior and the uniformity of that behavior. To the extent that some fish tend to migrate in response to flow conditions, that pattern reflects a pattern with substantial inter- and intra- annual variance and this means that short-term adjustments in diversion rates will have only limited benefit to migrating salmon and may result in significant adverse impacts on life history variation, a key component of the VSP criteria. The plan to manage bypass flows in real-time also overestimates the effectiveness of fish sampling; failure to detect fish does not mean that they are not present (especially when the fish are relatively rare). Finally, temporary reductions in diversions at the NDD will result in greater diversions on other days in the same or subsequent months (if the diversion and flow projections in the DEIR/DEIS and RDEIR/SDEIS are to be believed); to</p>	<p>The potential for adverse effects/significant impacts is analyzed as presented in the EIR/S. Bypass flows, real-time NDD export adjustments based on fish presence, the inclusion of Environmental Commitment 16 Nonphysical Fish Barriers, and channel margin restoration are all included in order to limit the potential for effects. Monitoring will inform the success of these measures, and there is a performance standard developed in association with the permitting fish agencies for survival $\geq 95\%$ of baseline survival in the NDD reach. Attainment of this standard will be monitored, with adaptive management being undertaken as necessary should the standard not be achieved.</p>

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		the extent that fish do not migrate past the NDD and out of the Delta within a very few days, they will still be subjected to substantial reductions in flows below the NDD that are likely to affect salmon orientation and survival through the Delta. Kimmerer 2008, 2011; Perry et al. 2010, 2012; Michel et al. 2015. Thus, the planned real-time operation under Alternative 4 is unlikely to mitigate the effect on migrating Chinook salmon of low flows below the NDD and through the Delta. This reduction in flow below the NDD will likely result in significant adverse effects on salmon survival that are not disclosed in the RDEIR/SDEIS.	
2598	58	<p>c. Flawed Modeling and Analysis of Impacts to Spring-run Chinook Salmon</p> <p>Despite our Prior Comments, the RDEIR/SDEIS continues to highlight average conditions across years and months while understating or ignoring impacts that occur in certain months and/or under particular water year types. The environmental documents tend to equate negative and perceived positive effects of project alternatives (and frequently emphasize marginal positive effects over the negative effects) without acknowledging that negative and positive effects may be asymmetrical. For example, the RDEIR/SDEIS description of operational impacts to spring-run on the Sacramento River under Alternative 2A makes no sense biologically:</p> <p>Flows during September would be up to 17% greater than or similar to those under NAA in wet, dry, and critical years, up to 15% lower in above normal and below normal years, but similar when all years are combined.</p> <p>RDEIR/SDEIS Appendix A at 11-250. Fish do not experience the “all years combined” condition. Spring-run Chinook attempting to spawn or hold in the Sacramento River in Above Normal and Below Normal years will experience substantially lower flow under Alternative 2A than under the NAA, which is likely to affect the productivity, resilience, and overall viability of the spring-run Chinook salmon population in that river; fish spawning or incubating in those years are unaware of and unaffected by conditions in wet years (for example). There is no reason to assume that any positive impact of increased flows during certain year types will be symmetrical with the negative impacts of reduced flows that are projected to occur in September during Above Normal and Below Normal years. Similar irrelevant claims are made about average results over multiple year types (e.g., Alternative 4_H3) throughout the RDEIR/SDEIS and DEIR/DEIS.</p>	The determinations are not necessarily determined based solely on all water years combined. We present nearly all analytical results both as all water year types combined and as individual water year types for full disclosure. The impact determinations instead are based on multiple metrics, tools, and analyses as presented in the narratives for each impact. Given the uncertainties associated with using CALSIM modeling and other tools, one must be cautious about relying too heavily on a single output, whether it be a single year, a single water year type, or a single analysis.
2598	59	The RDEIR/SDEIS makes the same mistake regarding changes in flow conditions within-years, regarding substantial changes in flow patterns as “adverse” only if they occur over a “substantial portion” of months. This arbitrary standard ignores the potential for poor environmental conditions in a particular month to be catastrophic (i.e., negating any benefit in other months of the same year) or to impact a particular segment of the population disproportionately (i.e., that fraction of the population that is in a given life history stage during the month(s) affected by the poor condition). For example, flows on the Sacramento River under Alternative 2A are reported to be lower during the spawning period (Sept-Nov) of certain years; thus, the finding that flows will be higher during December and January of those years (RDEIR/SDEIS Appendix A at 11-250) is irrelevant to the effects on spawning since spring-run Chinook salmon will have spawned before flow conditions “improve.” Within the time frame of a specific life-stage (e.g., spawning, juvenile rearing, ocean entry), temporal asymmetry of project effects can limit the diversity of life-history strategies found in a population, see Zeug et al. 2014, and their subsequent success, see Satterthwaite et al. 2014. Behavioral and life-history diversity are critical to the viability of	When considering CALSIM modeling and other tools, one must be cautious about relying too heavily on individual model outputs. We considered both magnitude and frequency of reduced habitat conditions in our determinations. For the example provided by the commenter (Alt 2A spring-run Chinook salmon spawning), there is no claim that the some months with improved conditions “make up for” other months with degraded conditions, as suggested by the commenter. Instead, we consider the magnitude and frequency of degraded conditions in the context of all other times and locations. In this case, the degraded conditions were not pervasive and conflicting modeling results further confound the ability to call an effect “adverse” given a general lack of degraded conditions. As a result, this impact was determined to be not adverse.

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		salmonids, see McElhane et al. 2000, and are highly constrained among Central Valley salmon, see, e.g., Carlson and Satherthwaite et al. 2011; Sturrock et al 2015. Reduced flows or increased temperatures during August or September are likely to limit spawning success of spring-run Chinook salmon in the early part of the spring-run spawning period, selecting against the early-spawning life history strategy and reducing life history diversity. Delayed spawning for spring-run can lead to increased introgression with fall-run Chinook salmon – this is a major threat to spring-run Chinook salmon populations of the Central Valley. See Moyle 2002; Williams 2006.	
2598	60	As with winter-run Chinook salmon, anticipated temperature changes upstream are likely to have major adverse effects on spring-run spawning populations, but these impacts are ignored or inappropriately minimized in the RDEIR/SDEIS. Alternative 2A, Table 11-Mult-63 (RDEIR/SDEIS Appendix A at 11-254) reveals an increase in degree days over NAA of up to 23% throughout the September-November period (spring-run Chinook salmon spawning and incubation occur during this time). The Reclamation model predicts that spring-run Chinook salmon egg mortality in the Sacramento River under A2A_LL1T would be greater than under NAA in most year types (up to 28% greater in Below Normal years). SacEFT predicts a 26% relative decrease in the frequency of years with good egg incubation conditions and a 6% decrease in the relative percentage of years with lower redd dewatering risk under A2A_LL1T relative to NAA. Alternative 4_H3 is projected to generate 29% higher mortality for spring-run Chinook in Below Normal years. These findings and similar ones for other alternatives suggest serious impacts to spring-run Chinook salmon attempting to spawn and incubate in the mainstem Sacramento River. Again, the additional degradation of conditions caused by the project alternatives is in addition to the devastating impacts (e.g., from extreme temperatures) projected under the NAA. The RDEIR/SDEIS erroneously claims that Alternative 2A does not cause a significant adverse impact, RDEIR/SDEIS Appendix A at 11- 260, and must be revised to disclose this impact and identify and analyze feasible mitigation measures.	The analysis considers several metrics combined and makes one final determination. While temperature conditions may vary spatially, the analysis must consider broad averages due to model limitations. In addition, the SacEFT and Reclamation Egg Mortality model results that the commenter notes are relative and, given low mortality under NAA conditions, a small increase causes a large relative increase (see response to comment 54 for more information). This is why we chose to report both raw and relative results for some analyses. A large relative change does not necessarily mean there is a biologically meaningful or relevant substantial effect. We found that the SacEFT model results are highly sensitive to small changes in water temperature. Therefore, we rely on a weight of evidence approach. Because the other models showed limited biologically relevant effects, we concluded that the effect is not adverse/less than significant.
2598	61	The RDEIR/SDEIS acknowledges that through-Delta flows and survival of spring-run Chinook salmon juveniles in the Delta would decline under Alternatives 3, 4, 5, and 7. The RDEIR/SDEIS states that “Juvenile salmonids migrating down the Sacramento River would generally experience lower flows below the north Delta intakes compared to baseline conditions,” see RDEIR/SDEIS Appendix A at 11-288, and it projects a 5% relative decrease in survival between Alternative 3 and NAA in wetter years and a 3% decline overall, see id. at Table 11-mult-99. For Alternative 4_H3, the environmental documents focus on OMR flows and claim: “These improved net positive downstream flows would be substantial benefits of the proposed operations.” RDEIR/SDEIS Appendix A at 11-295. However, Delta Passage Model results (which likely overestimate spring-run Chinook salmon survival, as noted in our Prior Comments) reveal a 6% decline in survival under Alternative 4 (H3 and H1 operations) during wetter months and 4% decline overall. Survival of migrating juvenile spring-run Chinook salmon is anticipated to decline by 2-4%, and 5-6% for Alternatives 5 and 7 respectively. The RDEIR/SDEIS determines that each of these impacts is “not adverse” but this determination is incorrect as through-Delta survival is already believed to be a major constraint on spring-run Chinook salmon populations. See NMFS Final Recovery Plan 2014; BDCP Appendix 3.G; Cunningham et al. 2015. Further persistent declines in through- Delta survival increase the likelihood that this species will become extinct and certainly limit its ability to recover.	The effects analyses are all comparative and relative to the baseline. The small decrease in through-Delta survival is the effect of the alternative. The low survival that “is already believed to be a major constraint on spring-run Chinook salmon populations” is not an effect of the alternative. The alternative is not responsible for current conditions. As noted in previous responses, bypass flows, real-time NDD export adjustments based on fish presence, the inclusion of Environmental Commitment 16 Nonphysical Fish Barriers, and channel margin restoration are all included in order to limit the potential for effects. Monitoring will inform the success of these measures, and there is a performance standard developed in association with the permitting fish agencies for survival ≥95% of baseline survival in the NDD reach. Attainment of this standard will be monitored, with adaptive management being undertaken as necessary should the standard not be achieved.

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2598	62	<p>Alternatives analyzed in the RDEIR/SDEIS also threaten to negatively affect the survival of adult spring-run Chinook salmon through the summer months and/or their subsequent spawning success. For example, in the Feather River, flows during July and August are projected to decline by 18%, 53%, 34%, and 38% (in at least some years) under Alternatives 3, 4, 5, and 7. The RDEIR/SDEIS' conclusion that, "these flow reductions are of too low of magnitude to affect adult spring-run Chinook salmon spawning in a biologically meaningful way," see RDEIR/SDEIS Appendix A at 11-303, is erroneous as spring-run Chinook salmon, in particular, must rely on holding habitat [footnote#23: Spring-run Chinook salmon migrate during the spring, but delay spawning until the late-summer and early fall. Between migration and spawning, they wait in freshwater for adequate spawning conditions to arise, a behavior called "holding". Because they do not eat during the holding period and are generally quite vulnerable to large terrestrial predators, spring-run Chinook salmon require adequate habitat conditions (including deep pools, cut banks and other hiding spots) to survive from migration to spawning.] to survive the period between adult migrations (in the spring) and spawning in the late-summer and fall; flow reductions as described on the Feather River during July and August should be expected to reduce the quantity and quality of such habitat to a significant extent.</p> <p>The RDEIR/SDEIS fails to acknowledge the potential for additive negative effects to spring-run Chinook salmon populations from combinations of reduced incubation success, lower through-Delta survival rates, and challenges to adults holding upstream. For all alternatives analyzed, such additive effects are likely, particularly for the Feather River population.</p>	<p>The document acknowledges that these reductions occur at the extreme end of the range (hence, the term "up to"), but also provides this in the context of all water years, which is in the range of ~<15%. This indicates that flow reductions are much lower or nonexistent (i.e., flow would increase) in the majority of months and water year types, as can be seen in tables provided in Appendix 11C, CALSIM II Model Results Utilized in the Fish Analysis.</p> <p>Regarding additive effects, the BDCP/CWF has reviewed all available life cycle models for all species (see BDCP HCP document Appendix 5G, Fish Life Cycle Models) and determined that only two could be used in this process – IOS and OBAN. Both are winter-run Chinook salmon models. Unfortunately, there were no spring-run Chinook salmon models that would provide useful information for this analysis. For the EIR/EIS, we analyze effects by impacts. These impacts are combined in summary tables (e.g., Table ES-8) to allow the reader to view all potential impacts across life stages as net effects.</p>
2598	63	<p>Flawed Modeling and Analysis of Impacts to Fall-run and Late-Fall run Chinook Salmon</p> <p>According to the RDEIR/SDEIS, fall-run Chinook salmon will experience "adverse" effects to adult migration (Impact AQUA-78) under Alternative 4. RDEIR/SDEIS Appendix A at 11-313. Flows on the Sacramento River under A4_H3 would generally be 5-18% lower during November; Feather River flows under Alternative 4_H1 would be up to 69% lower during August and September relative to NAA and under Alternative 4_H4, flows would be 43% lower during these months. These huge reductions in flow are similar to those projected under Alternative 5 (compared to NAA, Alternative 5 Sacramento River flows would be 17% lower during November and up to 14% lower during August and September; Feather River mean flows would be lower by up to 47%), yet the RDEIR/SDEIS incorrectly determines that Alternative 5 operations will be "not adverse" with regard to this impact. On the American River, the RDEIR/SDEIS admits that, "flow reductions would cause a biologically meaningful effect to fall-run Chinook salmon migrations" under Alternative 4 operations. See RDEIR/SDEIS Appendix A at 11-315.</p> <p>Reduced flows under Alternative 5 are likely to cause very significant adverse impacts on fall-run Chinook salmon on the American River, even if one were to ignore the effect of extreme temperatures from August-October under this Alternatives and the NAA, as described above.</p>	<p>It is incorrect to assume that similar findings of individual analyses among alternatives necessitate the same overall impact determination. There are a large number of analyses used at a large number of locations and periods for Impact AQUA-78. All of these results are combined and synthesized into a single determination.</p> <p>Regarding the claim that reduced flows of will cause substantial migration issues in the American River under Alternative 5, please refer to the Section BA, Appendix 5D, Section 5.D.2.4. In collaboration with several agency staff, we have found little evidence that reduced flows cause passage impediments for salmonids in the American River until flows drop below ~1000 cfs. A review of CALSIM outputs in the American River reveals that the frequency of dropping below this value under Alt 5 would be similar to, although slightly more than, that of the NAA. This, in and of itself, would not cause the entire impact to be adverse because there are several other analyses and locations to consider before making this determination.</p> <p>The reason the RDEIR/SDEIS states that flow reduction would cause a biologically meaningful effect under Alt 4 is that these flows are greater and more frequent than the baseline. Comparing these results to those of Alt 5, reductions in flows under Alt 4 are nearly twice as high (up to 20-30%) than those in Alt 5 (generally <15%) and more pervasive during migratory months.</p>
2598	64	<p>The RDEIR/SDEIS improperly finds that impacts to juvenile fall-run migrating downstream will be "not adverse" under Alternative 7, even as it estimates that through-Delta mortality will increase by 6% in wetter years and 4% overall relative to NAA, and by 15% in wetter years and 8% overall relative to Existing Conditions. Factors affecting fall-run juvenile survival through the Delta have substantial influence on the productivity and abundance of</p>	<p>As described in the analysis of Impact AQUA-78 in the RDEIR/SEIS, a number of measures would be implemented under Alternative 7 to minimize the potential negative effects from the NDD, including increased access to the Yolo Bypass (CM2), enhanced channel margin habitat along 15 miles of juvenile salmonid migration routes (under CM6), reduced interior Delta entry (from the action of nonphysical barriers under CM16), and reduced south Delta entrainment (under CM1). It is acknowledged that the</p>

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		<p>fall-run Chinook salmon in the Central Valley. See, e.g., BDCP Appendix 3.G (Proposed Interim Delta Salmonid Survival Studies); Cunningham et al. 2015.</p> <p>Increasing mortality for juvenile fall-run Chinook salmon migrating through the Delta jeopardizes the viability of this run, the commercial and sport fisheries that rely on Central Valley fall-run, and the marine mammal populations that prey on Chinook salmon (e.g. Orca whales). The magnitude and likelihood of these negative outcomes increases as the effect of increased juvenile mortality in the Delta is considered in the context of increasing negative effects upstream.</p>	<p>overall magnitude of each of these factors and how they might interact and/or offset each other in affecting salmonid survival through the Plan Area remains an area of active investigation.</p>
2598	65	<p>Analyses of Chinook salmon and steelhead survival rates through the Delta rely on application of the Delta Passage Model. In our Prior Comments, we described why DPM is inappropriate for estimating survival of fry-sized migrants (such as fall-run, and most spring-run Chinook salmon migrants) through the Delta because it is based on results from hatchery-origin late-fall run fish, which would be expected to have much higher through-Delta survival rates. Michel et al. 2015. Our previous concerns remain. In addition, it is unclear that the RDEIR/SDEIS have properly calibrated the DPM or incorporated results of the most up-to-date tagging experiments with late-fall run fish. For example, the through-Delta survival rates calculated for late-fall run fish and the proportional differences between wetter years and drier years under Existing Conditions (Table 11-mult-108) do not correspond to those reported by Michel et al. (2015), and significantly overestimate survival in drier years (low flows) and underestimate survival in wetter years (high flows). As a result of these and other shortcomings, the use of the DPM underestimates the likely adverse effects on salmon survival through the Delta under the Alternatives, and the RDEIR/SDEIS improperly concludes that these impacts are less than significant.</p>	<p>The DPM is used to characterize differences among scenarios (i.e., NAA vs. Action Alternative), and uses the same assumptions about fish behavior and movement for all scenarios. The differences are derived from changes in flow that capture the differences in scenarios. The text acknowledges that the DPM is a model most pertinent to smolt-sized fish (>70 mm), and tools for fry-sized individuals were not available for use. Effects to smaller juveniles in terms of potential changes to habitat for rearing (riparian/wetland benches) were assessed in the California WaterFix BA submitted in August 2016. While there may be more recent data that could be considered for the DPM, it would not be practical to update the model for every new dataset; the DPM was refined over several years by a collaborative working group for the BDCP/California WaterFix process and is considered suitable for effects assessment.</p>
2598	66	<p>Mitigation measures for fall and late-fall run Chinook salmon (AQUA-78a, b, c) describe additional evaluation and modeling of impacts and consultation with NMFS and CDFW to identify and implement potentially feasible means to minimize effects on fall-/late fall-run Chinook salmon migration conditions. These actions do not describe actual mitigation measures that will be implemented, do not establish binding performance standards, and do not commit to implementation of such measures; therefore they cannot have effects that mitigate for the adverse impacts of any alternatives. See Tit. 14, Cal. Code Regs., § 15126.4. The RDEIR/SDEIS improperly concludes that these “mitigations” have, “...the potential to reduce the severity of impact (including reducing the effect of [Alternative 4] H3 and H4 to a level that would not be biologically meaningful), although not necessarily to a not adverse level.” RDEIR/SDEIS Appendix A at 11-330. There is no indication that these measures will reduce the severity of impact in any way.</p>	<p>The mitigation measures are adequate as defined by NEPA and CEQA. Please see Master Response 22 for information about standards governing the adequacy of mitigation measures.</p>
2598	67	<p>The RDEIR/SDEIS also misrepresents the effect of construction impacts on migrating adult fall-run Chinook salmon. Table 11-4 identifies adult fall-run as "semi-abundant" during the October construction window. RDEIR/SDEIS Appendix A at 11-118. However, fall-run Chinook salmon should be at their peak abundance for North and East Delta during September and October; October should be the peak of fall-run adult abundance in the South Delta for fish migrating into the San Joaquin River and its tributaries. The environmental documents minimize the potential impact of construction activities stating: "migrating adult salmon are expected to readily avoid or swim away from areas of elevated noise." RDEIR/SDEIS Appendix A at 11-120. This conclusion assumes without evidence that Chinook salmon avoidance behavior does not lead to migration delay, stress, and exposure to additional mortality. We note that any negative effect of construction effects will occur</p>	<p>Table 11-1A-2 in Final EIR/EIS (replaces Table 11-4) now indicates that fall-run Chinook salmon are “abundant” in October (dark shading denotes peak abundance).</p> <p>Additional details on migration rates, swimming speeds, and potential adverse effects associated with avoidance behavior are provided in the Final EIR/EIS (see “Underwater Noise” under Impact AQUA-37).</p>

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		over at least the 10-15 year construction window projected in the RDEIR/SDEIS. Even negative effects to a small number of migrating adult salmon may become significant when the effect is persistent over such a long-period of time (especially when populations are low). The RDEIR/SDEIS fails to analyze these potential negative impacts of fall-run Chinook salmon as they attempt to avoid construction activity during their migration season.	
2598	68	The RDEIR/SDEIS correctly concludes that impacts due to low flows under the NAA are “significant” for CEQA purposes. However, the RDEIR/SDEIS fails to acknowledge the adverse impact to steelhead of reduced flows under several alternatives. For example, in the American River, flows under Alternative 5 during months when adult and juvenile steelhead are migrating are generally characterized as “similar to flows under NAA” except: during October in Wet years (10% lower under Alternative 5), Above Normal years (15% lower), and Critical years (12% lower); during November in Above Normal and Below Normal years (9% lower); and during January in Dry water years (8% lower). RDEIR/SDEIS Appendix A at 11-368. Furthermore, during September (a month during which adult steelhead migrate) flows would be 8% and 16% lower in Wet, Above Normal and Critical water years. In other words, under Alternative 5, flows will not “generally be similar to the NAA as claimed by the RDEIR/SDEIS; during every water year type, steelhead juveniles and adults would experience at least one month (and often more than one month) when flows were lower than NAA, and the RDEIR/SDEIS already regards flows during this period as a “significant” impact of the NAA (CEQA determination). As noted elsewhere, flows in the Feather River under Alternative 5 are expected to be 47% lower during September, a reduction that would negatively affect steelhead migration during that month. These reductions in flow will cause a significant impact that the RDEIR/SDEIS fails to disclose.	The analysis considers both the magnitude and frequency of flow reductions in determining whether an effect is adverse or significant. The comment focuses solely on frequency. The CEQA conclusion was significant because there were high and persistent flow reductions relative to Existing Conditions. This was not true for the NEPA analysis. For further information on how this determination was reached, please see Impact AQUA-95 for Alternative 5.
2598	69	The NEPA determination that Alternative 5 would be “not adverse” for adult and juvenile migrating steelhead is not credible given the impacts to temperatures and flows during the migration and spawning season under the NAA. Furthermore, the RDEIR/SDEIS concludes that “...through-Delta juvenile survival under Alternative 5 would be similar to or slightly lower than NAA, averaged across all years.” RDEIR/SDEIS Appendix A at 11-371. Given the already low survival rate of steelhead migrating through the Delta, see, e.g., NMFS 2009 Biological Opinion; NMFS 2014 Final Recovery Plan; BDCP Appendix 3.G, the further decline in survival rates downstream combined with devastating effects of Alternative 5 upstream result in significant adverse impacts under this alternative that are not disclosed in the RDEIR/SDEIS.	As with every other analysis in Ch 11, the analysis compares an alternative to the baseline. The project is not responsible for climate change effects observed in the LLT. Therefore, the effect of Alternative 5 compared to NAA_LL on steelhead migration would not be substantial and, therefore, is not adverse.
2598	70	RDEIR/SDEIS Table 11-4 fails to identify potential construction impacts to adult steelhead because it incorrectly lists them as “not present” in the east or southern Delta during the construction window. In fact, steelhead will be relatively “abundant” in these regions at the same time as they are abundant in the North Delta. Also, the RDEIR/SDEIS states, “Similar to Chinook salmon, the risk of injury or mortality of adult steelhead from pile driving noise is low because of their large size, high mobility, and rapid migration rates through the Delta and lower rivers.” RDEIR/SDEIS Appendix A at 11-122. This reasoning completely ignores the potential for steelhead avoidance behavior to disrupt migration causing delay, stress, and exposure to additional mortality. Negative construction impacts on steelhead will accumulate over the multiple years projected for facilities construction.	Table 11-1A-2 in FEIR/EIS (replaces Table 11-4) was revised according to the comment. This section references previous discussions of effects on Chinook salmon as generally applicable to steelhead, including potential adverse effects associated with avoidance behavior (Impact AQUA-37, AQUA-55, and AQUA-73).
2598	71	The RDEIR/SDEIS incorrectly asserts that steelhead are like Chinook salmon and Delta Smelt with respect to their potential to accumulate toxic compounds and that the “potential for	As noted in the NEPA Effects section on p. 11-171, steelhead are slightly higher on the food chain than delta smelt but spend a very short time period in the Delta, so bioaccumulation potential is concluded to be low

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		<p>bioaccumulation is low given their diet (i.e., relatively low trophic position).” RDEIR/SDEIS Appendix A at 11-171. This is incorrect. Unlike juvenile Chinook salmon or adult Delta Smelt, steelhead prey on other fish; at migration they are much larger than Chinook salmon or Delta Smelt, and they spend much more of their life cycle in freshwater than do Chinook salmon. Furthermore, unlike Chinook salmon or Delta Smelt, steelhead are iteroparous and may migrate upstream and downstream through (and feed in) the Project Area more than once during their lives. These differences suggest the RDEIR/SDEIS should adopt a higher level of concern regarding potential bioaccumulation of toxins by steelhead than by either Chinook salmon or Delta Smelt.</p>	<p>and the impact is less than significant. As presented in the analysis, there is uncertainty in this assessment, and the potential for mobilization of mercury and selenium would be addressed with AMM27 (selenium) and CM12 (methylmercury management).</p>
2598	72	<p>f. Flawed Modeling and Analysis of Impacts to Green Sturgeon. [footnote#24: These comments regarding the analysis of impacts to Green and White Sturgeon apply equally to the analysis of the new alternatives in the RDEIR/SDEIS. See, e.g., RDEIR/SDEIS at 4.3.7-281 (stating that entrainment impacts would be the same as under Alternative 4); id. at 4.3.7-290 to -291 (analysis of flow and temperature effects, using the same method of analysis as in the DEIR/DEIS); id. at 4.3.7-294 to -298 (ignoring effects of changes in Delta outflow on rearing habitat and abundance, similar to the analysis used in the DEIS/DEIR); id. at 4.3.7-301 (similar analysis of delta outflow and abundance as in the DEIS/DEIR).]</p> <p>The RDEIR/SDEIS finds that operations under the No Action Alternative will have a significant negative effect on Green Sturgeon populations (Impact AQUA—NAA6, see RDEIR/SDEIS Appendix A at 11-108). Thus, much like the effect of temperatures on salmonid life stages that occur upstream of the Delta described supra, the NAA and all alternatives that produce similar or worse impacts will require substantial mitigation. The RDEIR/SDEIS analyzes the effects of water operations on migration conditions for Green Sturgeon (AQUA-132), and finds large negative effects for certain alternatives, even compared to the unacceptable conditions of the NAA. Rather than acknowledge these modeled effects are “adverse” for Green Sturgeon, the RDEIR/SDEIS disparages the method it employs to analyze this effect. For example, on the lower Sacramento River, the RDEIR/SDEIS finds that applying the known correlation between flow and White Sturgeon productivity suggests that Green Sturgeon year class strength would be up to 50% lower under Alternative 4_H3 than under NAA operations. RDEIR/SDEIS Appendix A at 11-380. Indeed, the RDEIR/SDEIS states that:</p> <p>Due to the removal of water at the North Delta intakes, there are substantial differences in through-Delta flows between Alternative 4 and NAA_ELT. The percentage of months exceeding the USFWS (1995) Delta outflow thresholds in April and May of wet and above normal years under Alternative 4 was appreciably lower than that under NAA_ELT.</p> <p>RDEIR/SDEIS Appendix A at 11-381.</p> <p>Although, “the analysis indicates that green sturgeon year class strength could be lower under Alternative 4,” the environmental documents incorrectly deem its own method of analysis, using the known correlation between Delta flows and White Sturgeon year-class strength, as “unreliable.” [footnote#25: Similar rationalizations are offered for negative effects projected under Alternatives 2A and 7.] RDEIR/SDEIS Appendix A at 11-381. In fact, in their conceptual model of Green Sturgeon life history, Israel and Klimley (2008) write:</p> <p>Increased water flows presumably enhance spawning efficiency for green sturgeon. The flow of water on the Sacramento, Feather, and Yuba rivers is controlled by dams, and the flows can be predicted with high reliability. Thus, water managers can directly influence the</p>	<p>There is no established linkage between Delta outflow and green sturgeon year class index (YCI). Published literature uses Delta outflow as an indicator of flow from upstream habitats through the Delta. As explained in the EIR/EIS, the actual flow relationship is unknown. The Adaptive Management Program can be used to assess this uncertainty and adjust flow criteria as necessary.</p> <p>The presumption that the correlation between white sturgeon year class and flow applies to green sturgeon has very low scientific certainty. Green sturgeon and white sturgeon have different life history timing such that potential mechanisms to explain the white sturgeon YCI-flow correlation (whether it is transport flows, rearing habitat availability, or something else), given that the months used for the relationship were constant between the two species, would be different for green sturgeon.</p> <p>In addition, if there is a causal link between green sturgeon year class strength and Delta outflow, operation of the proposed north Delta diversions would likely change the nature of this relationship, possibly decoupling upstream from downstream. This is further motivation for conducting targeted research and adaptive management during implementation of the project to determine a potentially causal link and understand potential mechanisms.</p>

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		<p>successful production of larvae and juveniles. Outflow to the San Francisco Bay-Delta between April and July is significantly correlated with white sturgeon year class strength (Kohlhorst et al. 1991), and a similar relationship is presumed to exist with green sturgeon. Daily discharge at known green sturgeon spawning locations were similar to the estimated minimum necessary for strong age classes of white sturgeon on the Sacramento River (19,988 cfs, Neuman et al. 2007).</p> <p>Israel and Klimley 2008 at 18. Thus, given the lack of data necessary to investigate Green Sturgeon productivity as a function of flows, it is not only reasonable to presume that the relationship exists and is similar to that found for White Sturgeon, the recommendation is found in California DFW's conceptual model. Based on the analysis in the RDEIR/SDEIS and lacking credible scientific evidence to the contrary, the RDEIR/SDEIS should have concluded that Alternatives 4 and 5 are likely to result in significant adverse impacts for Green Sturgeon during its juvenile migrations, and analyzed feasible mitigation measures.</p>	
2598	73	<p>On the Feather River, the RDEIR/SDEIS finds that year-round flows below Thermalito Afterbay (high-flow channel) and at the confluence with the Sacramento River under Alternative 4_H1 would be up to 86% lower during July through September. Moreover, it states that, "flows at Thermalito under [Alternative 4] H3 would generally be lower than flows under NAA during July through September," which is the larval and juvenile migration period. See RDEIR/SDEIS Appendix A at 11-380. The environmental documents incorrectly claim that these reductions would not have a substantial effect on Green Sturgeon, in part because they are benthic fish. [footnote#26: Similar reasoning in the RDEIR/SDEIS is applied in erroneously concluding that Alternatives 2A and 7 would not have "adverse" impacts.] RDEIR/SDEIS Appendix A at 11-380. The fact that Green Sturgeon are bottom oriented does not make them immune to these incredibly large reductions in river flow rates. These fish still need adequate freshwater flows to complete their life-cycle successfully. The RDEIR/SDEIS incorrectly ignores evidence of flow reductions that are likely to be significant when it finds that the project alternatives will have "not adverse" effects under NEPA. These conclusions are incorrect, and the RDEIR/SDEIS fails to disclose significant adverse impacts that are likely to occur and to consider feasible mitigation measures.</p>	<p>There is no evidence that green sturgeon need flows higher than those found with implementation of the alternative. They are benthic fish and their habitat would change much less with flow fluctuations than a fish needing shallow water edge habitat.</p>
2598	74	<p>The RDEIR/SDEIS also fails to acknowledge potentially significant impacts of facility construction on Green Sturgeon adults and juveniles. Table 11-mult-2 (RDEIR/SDEIS Appendix A at 11-125) suggests that because the total acreage of impact from pile driving noise is low, the impact to Green Sturgeon is low. This assumes there is a random distribution of Green Sturgeon adults and juveniles. But, the environmental documents acknowledge that the Sacramento River is a main migratory corridor for adults and juveniles -- so their distribution there is non-random. Also, the fact that adults and juveniles are capable swimmers does not mean that their migrations will not be interrupted by behavioral response to pile driving. The RDEIR/SDEIS must be revised to address these impacts.</p>	<p>Added the following text to address this comment: "Such estimates serve as only general indicators of potential occurrence and do not take into account the probability of higher exposure risk of juveniles at the proposed intakes which are located on the principal migration route of green sturgeon."</p> <p>For more information regarding Environmental Commitments, including AMM9 Underwater Sound Control and Abatement Plan, please see Appendix 3B of the FEIR/EIS.</p>
2598	75	<p>g. Flawed Modeling and Analysis of Impacts to White Sturgeon</p> <p>As with Green Sturgeon, the RDEIR/SDEIS ignores or minimizes flow-related impacts to White Sturgeon populations from operations under project alternatives. Major change in proportional duration (up to 50%) of critical flows during February -May at Verona are expected under Alternative 1A, see RDEIR/SDEIS Appendix A at 11-387 and Table 11-mult-111, and the frequency with which Delta outflows exceed critical thresholds during</p>	<p>The relationships upon which some of these analyses (e.g., Verona flows) were based (AFRP draft documents) were preliminary (see USFWS 1995) and were not included in the Final Restoration Plan for the AFRP (USFWS 2001). Therefore, the agency that originally proposed them (USFWS) believed that they were not scientifically valid enough for inclusion in their final plan.</p> <p>In addition, some of these relationships are based on a system without North Delta diversions. Construction and operation of these north Delta diversions could change the nature of the relationship between sturgeon</p>

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		<p>April and May in Wet and Above Normal years declines substantially, see RDEIR/SDEIS Appendix A at 11-388 and Table 11-mult-112. Similarly, the documents admit that, "...migration flows at Verona were up to 55% lower under A1A_LL T relative to NAA during July through September and November." RDEIR/SDEIS Appendix A at 11-388. Despite the tremendous reduction in frequency of Delta flow rates that are necessary to support White Sturgeon year-class strength, the RDEIR/SDEIS finds that the effect on this species will be "not adverse", declaring:</p> <p>"The scientific uncertainty regarding which mechanisms are responsible for the positive correlation between year class strength and river/Delta flow will be addressed through targeted research and monitoring to be conducted in the years leading up to the initiation of north Delta facilities operations. Given the outcome of these investigations, Delta outflow would be appropriately set for Alternative 1A operations such that the effect on white sturgeon Delta flow conditions would not be adverse"</p> <p>RDEIR/SDEIS Appendix A at 11-389. This conclusion is unwarranted. Similarly large flow reductions that would affect White Sturgeon migration and rearing are anticipated under other alternatives described in the RDEIR/SDEIS, including Alternatives 2A, 3, and 4. In each case, the environmental documents rely on similarly strained logic to reach a "not adverse" NEPA determination, without adequate performance standards or commitments to ensure that mitigation measures that increase Delta outflow to sufficient levels will be adopted. [footnote#27:The RDEIR/SDEIS assurance that Delta outflow will be adjusted to avoid any adverse impact to White Sturgeon is a direct contradiction of statements elsewhere in the RDEIR/SDEIS that certain flow-related effects are "unavoidable" because changing flow rates would change the project description.] In addition, lack of knowledge regarding the mechanisms that produce the relationship between flow and White Sturgeon abundance is not an excuse to ignore the effect of those mechanisms, as evidenced by the correlation itself.</p>	<p>year class strength and flow downstream of the new diversions. As a result, this will be the focus of targeted research after implementation, after which Delta outflow targets would need to be revisited.</p> <p>Evidence of a correlation does not indicate that the one variable causes the other. The two variables may both correlate with a third unknown factor that affects them both. The CWF needs more information about this correlation to determine its mechanism(s) in order to better understand whether white sturgeon is affected by outflow and, therefore, the project. Once this is done, the CWF assures that Delta outflow standard changes will be appropriately set, as stated in the text.</p>
2598	76	<p>h. Additional Flaws in the Analysis of Impacts to White Sturgeon and Green Sturgeon</p> <p>The RDEIR/SDEIS finds that the NAA alternative will produce significant negative effects as compared to Existing Conditions via the effect of water operations on rearing habitat for sturgeon. RDEIR/SDEIS Appendix A at 11-107. This finding appears to be based on the flawed assumption that, "[o]perations to meet Fall X2 criteria would... also likely reduce flows (and rearing habitat) at other times of the year." RDEIR/SDEIS Appendix A at 11-107. This reasoning assumes that there is no way to maintain necessary flows at other times of year if water is used during Above Normal and Wet years to provide adequate conditions in the Delta during the fall. However, other options exist, including reducing water deliveries and diversions. Fall X2 actions only occur following Wet and Above Normal Years and represent a small amount of water with relatively higher reservoir storage levels in those years. Even assuming that provision of fall X2 habitat conditions will affect the flows required to maintain suitable habitat conditions for Green Sturgeon or White Sturgeon, the RDEIR/SDEIS must consider feasible mitigation measures that provide adequate flows for these species.</p>	<p>The effects of NAA relative to Existing Conditions are predominantly the result of climate change and sea level rise. There are no effects of any action alternative that are included in this analysis. Therefore, there cannot be an effect attributed to any alternative caused by any of the action alternatives.</p> <p>All of the alternatives evaluated in the EIR/EIS would only divert water under existing water rights which were issued to DWR and Reclamation by the State Water Board with consideration for senior water rights and Area of Origin laws and requirements. These senior water rights include water rights settlement agreements with water rights holders that diverted water from the Sacramento River prior to the construction of the CVP. In accordance with conditions of the water rights issued by the State Water Resources Control Board to Reclamation for CVP operations, Reclamation must deliver water to the Sacramento River Settlement Contractors prior to operations of the CVP. The deliveries to the Sacramento River Settlement Contractors cannot be reduced further than what is allowed in the existing water rights. Changes to those water rights is not part of this project's objectives or purpose and need.</p>
2598	77	<p>Flawed Modeling and Analysis of Impacts to Covered and Non-Covered Pelagic Fish Species</p> <p>The RDEIR/SDEIS fails to identify or analyze the additive effect of projected abundance declines in many of the San Francisco Bay Estuary's most important forage fish. Taken</p>	<p>Please see Impacts AQUA-201 through AQUA-203. All of the species listed in the comment as forage fish and important zooplankton were analyzed in the Impact Analysis.</p>

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		<p>together, the projected declines resulting from both the NAA and project alternatives in the Estuary's population of Longfin Smelt, Delta Smelt, Striped Bass, Threadfin Shad, American Shad, Chinook salmon, steelhead, and other fish, plus important zooplankton, such as Bay Shrimp, represents a substantial loss in prey for piscivorous birds, mammals, and fish. See RDEIR/SDEIS Appendix A at 11-161, 11-165. Writing about declines in the San Francisco Bay Estuary's population of Longfin Smelt alone, Nobriga and Rosenfield (in press) observed:</p> <p>Forage fishes serve as energy conduits between zooplankton and higher trophic-level predators (Pikitch et al. 2014). This central role in aquatic food webs means that forage fish production is critical to sustainable fisheries management (Alder et al. 2008), desired ecosystem functions (Hall et al. 2012), and in some cases the maintenance of biodiversity (Trathan et al. 2015). For instance, seabirds around the world display reduced and more variable productivity when forage fish biomass drops below one-third of the maximum observed in long-term studies (Cury et al. 2011).</p> <p>Thus, declines in numerous forage fishes (a term that refers to small-bodied fishes in general) are likely to have an additive effect on the food web of the entire San Francisco Bay Estuary complex. These outcomes are not mentioned or investigated by the environmental documents for the California WaterFix. The RDEIR/SDEIS must be revised to consider the cumulative effect of reduced populations of forage fish on higher trophic levels.</p>	
2598	78	<p>Flawed Modeling and Analysis of Impacts to Water Quality</p> <p>The RDEIR/SDEIS fails to analyze, or incorrectly analyzes effects of project alternatives on various aspects of water quality in and downstream of the Plan Area. The RDEIR/SDEIS now describes changes in residence times under the alternatives (Table 8-60 at 8-83); residence times increase in the Delta, often to an extraordinary degree. But, this does not address our previous comment regarding the failure to account for full residence time of particles diverted from and returned to Delta waterways by agricultural diversions—a failure that could mean the effects are even worse than shown in Table 8-60. As we discuss elsewhere, increased retention times promote harmful algal blooms (e.g., such as Microcystis; Berg and Sutula 2015) and the spread and persistence of invasive submerged macrophytes (Boyer and Sutula 2015).</p>	<p>The residence time results provided sufficient information from which to identify that there would be increases in residence time leading to significant impact calls for Microcystis (see Impacts WQ-32 and WQ-33 in Chapter 8, Water Quality of the EIR/S) and mitigation was introduced for Alternatives 1 through 9 to address this impact. The Particle Tracking Model does not include the numerous agricultural diversions because the specific geographic locations were not identified in adequate detail for inclusion in the numerical model. However, because the agricultural diversions are not included in the Existing Conditions, No Action Alternative, or any of the action alternatives, and because the model results must be considered in a comparative manner, the incremental differences between conditions the action alternatives as compared to the Existing Conditions and No Action Alternative would be similar with and without the agricultural diversions. Please refer to Master Response 14.</p>
2598	79	<p>The RDEIR/SDEIS analysis of sediment transport beyond the Plan Area is misguided, incorrect, and misleading. This analysis compares freshwater flow inputs to the Delta relative to tidal flow rates at the Golden Gate (see Table 11-mult-14, mult-15, mult-16, mult-17, mult--18, and mult-19, RDEIR/SDEIS Appendix A at 11-181 and -187) in order to make the point that inflow rates are a small fraction of total water exchange at the Golden Gate. This comparison is totally irrelevant to sediment transport dynamics. Freshwater flow rates are what determine how much sediment is delivered to the Delta. Reduction in upstream flow rates expected to arise periodically from BDCP/California WaterFix operations combined with the diversion of sediments carried by the Sacramento River at the NDD will reduce sediment delivery to the Delta and subsequent transport downstream. This represents a significant impact to various fish and wildlife species as well as to the accretion rate in restoring marshes and beaches in the Bay Area. Additional analyses of sediment transport effects of project alternatives are infra, in our critique of the new California WaterFix alternatives and in our critique of the RDEIR/SDEIS' inadequate analysis of impacts to San Francisco Bay.</p>	<p>The authors do not agree with the interpretation of the commenter. The section comparing outflow to tidal flows was specific to an evaluation of changes in flow to the bays. The sediment analysis was a completely separate section and focused on reductions in sediment supply due to the North Delta diversion facilities.</p>

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2598	80	<p>The RDEIR/SDEIS correctly finds (RDEIR/SDEIS Appendix A at 11-194) that effects of operations on contaminants on covered species (AQUA-219) is likely to result in significant adverse effects, stating, "...could result in adverse effects on all fish species considered, with greatest concern for sturgeon, since as larger fish that spend several years in the Delta, and therefore will tend to bioaccumulate more mercury in tissues." However, the document fails to consider these contaminant effects in assessing impacts to fish and wildlife more generally.</p>	<p>Sturgeon was used as a surrogate for the potential effects on all fish because they are large, with potential to bioaccumulate contaminants; spend a great deal of time in the Delta; and eat clams, which sequester contaminants. The life histories and exposure potential of other evaluated fish are taken into account with the analysis for sturgeon to determine the impact of each of these species.</p>
2598	81	<p>k. The RDEIR/SDEIS Fails to Adequately Analyze Impacts of the Alternatives on Selenium [footnote#28:28 These concerns apply equally to the new alternatives analyzed in the RDEIR/SDEIS. See, e.g., RDEIR/SDEIS at 4.3.4-51 to -53.]</p> <p>The San Francisco Bay hosts a recreational fishery for White Sturgeon (<i>Acipenser transmontanus</i>), and the local Green Sturgeon (<i>Acipenser medirostris</i>) population is listed as threatened under the federal Endangered Species Act. Hence, any increase in selenium concentrations in these sensitive species is cause for concern. The RDEIR/SDEIS incorrectly asserts that Alternatives 1 through 4 will not cause a significant impact with respect to selenium concentrations in the water column or biota and, thus, would not cause the CWA Section 303(d)-listed selenium impairment to worsen. See, e.g., RDEIR/SDEIS Appendix A at 11-201 and 8-283. This conclusion is erroneously based on the RDEIR/SDEIS' arbitrary threshold of significance, criteria that places biota at considerable risk from selenium bioaccumulation. The impacts of selenium accumulation are most notable with regard to White Sturgeon and Green Sturgeon. For example, despite the fact that annual average selenium concentrations in sturgeon would increase by 18.3% relative to Existing Conditions in the San Joaquin River at Antioch, the environmental documents determine that this effect would be "not adverse" and "not significant" for Alternative 4.</p> <p>RDEIR/SDEIS Appendix A at 8-283. Elsewhere, the RDEIR/SDEIS concludes that, "selenium concentrations in sturgeon fish tissue would be slightly to moderately increased to above the toxicity value for Alternatives 1 through 9 at the San Joaquin River at Antioch." RDEIR/SDEIS Appendix A at 11-198. This impact was considered "not adverse" and "not significant" because the RDEIR/SDEIS claims that toxicity thresholds would be elevated 'only slightly' above the toxicity threshold. RDEIR/SDEIS Appendix A at 11- 201. The best available science indicates that existing selenium concentrations in biota are likely resulting in significant impacts to sturgeon. Linville 2006; Riu et al. 2014. Diet is the primary route of exposure that controls chronic toxicity to fish, the group considered to be the most sensitive to chronic selenium exposure. Coyle et al. 1993; Hamilton et al. 1990; Hermanutz et al. 1996. The RDEIR/SDEIS inappropriately assesses risk based on the modeled water quality target of 0.202 µg/L, rather than dietary exposure risk, such as elevated tissue concentrations among the bivalves on which sturgeon feed. Linville et al. 2002; Linville 2006; Adams et al. 2007; Presser and Luoma 2013; Riu et al. 2014.</p> <p>The RDEIR/SDEIS states that selenium concentrations in White Sturgeon muscle throughout the entire San Francisco Bay, including fish from the North Bay, have mostly been below 10 mg/kg (dry weight) in the most recent fish surveys conducted by the RMP. This does not acknowledge that approximately 20% of White Sturgeon samples have exceeded the fish-tissue target. SFEI 2015. Selenium in Green Sturgeon has not been routinely monitored in the field, however, available science indicates White Sturgeon should not serve as a proxy for Green Sturgeon with respect to selenium toxicity, given greater sensitivity of Green Sturgeon. Riu et al. 2014. Several studies in the Bay-Delta indicate significant selenium risk</p>	<p>Please refer to Master Responses 14 regarding selenium.</p>

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		<p>to Green Sturgeon under existing conditions:</p> <p>This analysis indicates that white and green sturgeon are among the most sensitive of fish to adverse effects of selenium, with the listed green sturgeon being the more sensitive of these two species. These levels of sensitivity evidently put sturgeon at substantial risk at current levels of exposure in the San Francisco Bay area. Selenium concentrations in food items of sturgeon in the San Francisco Bay area are almost always high enough that they may cause at least 10 percent mortality in hatchling green sturgeon ($\geq 3.58 \mu\text{g/g}$), and they are frequently high enough that they may cause at least 10 percent mortality among hatchling white sturgeon ($\geq 10.8 \mu\text{g/g}$) as well.</p> <p>Beckon 2012. NMFS (2010) also recognizes that Green Sturgeon are more sensitive to selenium than White Sturgeon. And Riu et al. (2014) showed that, "...a dietary Se concentration at $19.7 \pm 0.6 \text{ mg Se/kg}$, which is in range with the reported Se concentrations of the benthic macro-vertebrate community of the San Francisco Bay, had adverse effects on both sturgeon species," and that the Green Sturgeon should be "monitored and managed independently from White Sturgeon." Riu et al 2014 at 73; see also Kaufman et al. 2008.</p> <p>Recent research indicates that White Sturgeon and federally-listed Green Sturgeon are likely experiencing significant impacts associated with selenium at concentrations found in their existing diet. Under all Alternatives this level of risk is expected to increase. RDEIR/SDEIS Appendix A at 11-198.</p> <p>Therefore, any increased risk to the sturgeon species or other higher trophic species within the Delta or the larger San Francisco Bay Estuary must be considered significant and appropriately analyzed; the RDEIR/SDEIS fails to do this and must be revised accordingly.</p>	
2598	82	<p>XIII. The RDEIR/SDEIS Fails to Adequately Analyze Environmental Impacts of the New Alternatives, Fails to Disclose Significant Adverse Impacts of the New Alternatives, and Incorrectly Describes Some Impacts as Significant and Unavoidable</p> <p>Unfortunately, the RDEIR/SDEIS continues to use many of the same flawed methods to assess environmental impacts of the new alternatives, and as a result it fails to adequately assess the environmental impacts of the new alternatives and fails to disclose significant adverse impacts that are likely to occur. The methodological and analytical flaws identified in our Prior Comments apply equally to the analysis in the RDEIR/SDEIS. For example, because none of the CALSIM II modeling of the NAA has been redone, the comparison of new project alternatives to NAA outcomes obscures the severity of impacts that can be expected under these new alternatives. If conditions expected under the NAA are worse than current conditions and will result in significant impacts to public resources, then outcomes of project alternatives that are similar to or worse than NAA will produce similar or worse impacts to those public resources. In those cases, rather than finding that the project alternatives effects will be "not adverse", the RDEIR/SDEIS should reveal that both the NAA and the project alternative cause significant impacts that require implementation of mitigation measures.</p>	<p>This is a general comment on the adequacy of the effects analysis which compares action alternatives to effects of the No Action Alternative ELT. These analyses that use modeling outputs have been determined to be adequate for the purposes of detecting potential environmental effects associated with operating conveyance facilities. Please refer to the response to comment 37 for more information regarding adequacy of models used. Also, please also refer to Master Response 1, which addresses the environmental baseline.</p>
2598	83	<p>The RDEIR/SDEIS improperly concludes that the No Action Alternative results in significant and unavoidable impacts to winter-run Chinook salmon and Green Sturgeon Spawning and Rearing (AQUA-NAA-4), see RDEIR/SDEIS at ES-48, and fall-run Chinook salmon, see RDEIR/SDEIS Appendix A at 11-330 and -335, ignoring changes to reservoir operations,</p>	<p>Please see Master Response 1 for information regarding environmental baselines.</p>

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		water deliveries, and other feasible mitigation measures that could reduce or avoid these environmental impacts.	
2598	84	The section of the RDEIR/SDEIS dedicated to analyzing new alternatives (Chapter 4) is simply not well researched and does not represent a comprehensive review of best available science. Released on July 9, 2015, Chapter 4's Reference Section (4.5.27) for Fish and Aquatic Resources cites no publications from 2015, only one paper published in 2014, and only 10 papers or publications from the past decade. No publications or references of any kind are listed for the Terrestrial Biological Resources or Public Health sections or for over a dozen other sections of Chapter 4.	The lead agencies believe that the 2013 Draft EIR/EIS and 2015 RDEIR/SDEIS are complete in their evaluation of impacts (using the best available science), direct and cumulative, that project description is complete and satisfies the requirements of NEPA, and that the project objectives are also precise and complete and satisfy the requirements of CEQA. The lead agencies believe that the 2013 Public Draft EIR/EIS and 2015 RDEIR/SDEIS provided the public and decision-makers with sufficient information on which to make informed comments which have been considered and incorporated into the Final EIR/EIS.
2598	85	<p>i. The RDEIR/SDEIS Fails to Adequately Analyze Impacts of the Alternatives on Turbidity</p> <p>The RDEIR/SDEIS incorrectly asserts that the alternatives will not cause a significant impact on sediment loading and turbidity, and as a result it fails to analyze the effects of the substantial reductions in sediment and turbidity on fish and wildlife and other water quality parameters such as harmful algal blooms. The best available science indicates that the alternatives are likely to substantially reduce sediment and turbidity in the Delta via numerous pathways: sediment will be diverted into the new North Delta intakes; river flow rates (which determine the ability of water to transport and mobilize sediments) both upstream and downstream of the North Delta Diversion will be reduced; and depositional habitats such as wetlands and floodplain habitats will be restored. Reductions in sediment and turbidity are likely to cause adverse environmental impacts including:</p> <ul style="list-style-type: none"> Increases in harmful algal blooms (including, in particular, Microcystis and production of the toxin microcystin), see Berg and Sutula 2015; Increases in the extent of invasive submerged aquatic vegetation, see Boyer and Sutula 2015; Reductions in habitat for Delta Smelt, indirectly, as a result of the aforementioned effects on harmful cyanobacteria blooms and submerged aquatic vegetation, and directly, see Nobriga and Herbold 2009; and Increased predation risk for multiple species, indirectly, as a result of increases in submerged aquatic vegetation and directly, by increasing predator efficacy (e.g., predation on Chinook salmon, see Gregory 1993; Gregory and Levings 1998). 	The potential negative impact to turbidity/water clarity is acknowledged in the FEIR/S by inclusion of an environmental commitment to reintroduce the sediment to the water column in order to maintain Delta water quality (specifically, turbidity, as a component of delta smelt critical habitat). DWR will collaborate with USFWS and CDFW to develop and implement a sediment reintroduction plan that provides the desired beneficial habitat effects of maintained turbidity while addressing related permitting concerns (the proposed sediment reintroduction is expected to require permits from the Central Valley Regional Water Quality Control Board and USACE). USFWS and NMFS will have approval authority for this plan and for monitoring measures, to be specified in the plan, to assess its effectiveness. This is described in Appendix 3.G of the FEIR/EIS. Please refer to Master Response 14.
2598	86	In our Prior Comments, we described the potential damage to rearing habitat for, and increased predation on, larval sturgeon resulting from increased light penetration below the North Delta Diversion (both decreased turbidity and lowered river stage in that area are likely to increase light penetration into the benthic habitats of sturgeon; Prior Comments at 203-205). The RDEIR/SDEIS must be revised to adequately analyze and disclose these significant impacts.	There is no evidence in the scientific literature that a lack of darkness will increase predation pressure on larval sturgeon. Further, green sturgeon larvae would be in the upper and middle portions of the rivers such that they would not be anywhere near the North Delta intakes. Although white sturgeon larvae can be in the vicinity of the North Delta intakes, their primary area of distribution is between Colusa and Verona. Therefore, an analysis of this impact is unnecessary.
2598	87	The RDEIR/SDEIS admits that operation of the new North Delta Intakes is likely to reduce sediment supply to the estuary by 8-9%, and that habitat restoration will also reduce the	Estimates of sediment capture in restoration areas for the preferred alternative (Alternative 4A, California WaterFix) would be considerably less than for the HCP-based alternatives that include very large (two orders of magnitude greater) extents of habitat restoration. Please also see the response to comments 85. For

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		<p>available sediment supply. For instance, it states that under Alternative 4A, [o]peration of the north Delta intakes (water conveyance facilities) is estimated to result in around 8 to 9% less sediment entering the Plan Area from the Sacramento River, the main source of sediment for the Delta and downstream subregions. In addition, sediment could be accreted (captured) in restored areas (Environmental Commitment 4 Tidal Natural Communities Restoration). These actions could limit sediment supply to areas currently important to delta smelt, such as Suisun Bay, which would result in less seasonal deposition of sediment that could be resuspended by wind-wave action to make/keep the overlying water column turbid.</p> <p>RDEIR/SDEIS at 4.3.7-29. However, the RDEIR/SDEIS asserts that the alternatives would not cause a significant impact on sediment and turbidity because there would be a less than 10% change in sediment loading and because sediment collected at the intake facilities could be reintroduced at restoration sites. RDEIR/SDEIS at 2-2. As we have emphasized before and in these comments, see supra, there is no biological basis for the 10% threshold of significance. In addition, other regulatory agencies and scientific peer reviews have concluded that such a reduction would cause significant impacts. For instance, in 2014 the Bay Conservation and Development Commission concluded that,</p> <p>The BDCP EIR discusses a potential reduction in suspended sediment transport to the Suisun Marsh and San Francisco Bay of approximately eight to ten percent. The EIR/S does not characterize this change as a significant impact. The ISB report to the Delta Stewardship Council raises this as a significant issue. United States Geological Survey researchers have observed a steep reduction suspended sediment concentrations in the Bay and characterize San Pablo Bay as erosional. With projected sea level rise, further reduction in Bay sediment inputs should be considered significant, given Bay wetland restoration targets, current subsided diked baylands, and the overall Bay-Delta sediment budget. Sediment settling in the new northern forebay, the relocation of flows from channels into underground pipes, new pumping regimes and proposed restoration conservation measures together and separately will alter sediment transport, delivery, and the rate of deposition downstream. Reduced suspended sediment in the Bay will exacerbate nutrient loading problems caused from the sewage treatment plants discharging into the Bay.</p> <p>Construction of restoration projects, which are highly desirable in the Delta upstream of the Bay, likely will create sediment sinks, thus further reducing sediment flows to the Marsh and San Francisco Bay. The cumulative impacts analysis should consider all of these changes to the Bay sediment regime, using science-based thresholds of significance.</p> <p>July 29, 2014 Comments of the Bay Conservation and Development Commission on BDCP (emphasis added).</p> <p>The Bay-Delta ecosystem already suffers from a deficit of sediment and turbidity as a result of prior human activities (gold mining, dams, etc.; Schoellhamer 2011). Increasing water clarity is recognized as a significant impact on Delta Smelt and other native fisheries in the Delta, as well as affecting the growth of harmful algal blooms (Berg and Sutula 2015). Because of the existing sediment deficit, the removal of nearly 10% of the existing sediment through the new intakes is likely to result in significant adverse effects on fisheries, water quality, and habitat restoration. Analysis prepared for DWR by ICF International estimated that the North Delta Diversion was responsible for the vast majority of the reduction in sediment, with habitat restoration contributing a lesser role; ICF International's midpoint</p>	<p>responses to comments related to the Delta Independent Science Board's letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546.</p>

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		estimate of the total reduction in sediment as a result of both habitat restoration and the North Delta Diversion is over 10%. There is no biological basis for the 10% threshold of significance used in the RDEIR/SDEIS, and given the current sediment deficit in the estuary, a nearly 10% reduction in sediment is likely to cause a significant impact.	
2598	88	The RDEIR/SDEIS also fails to analyze the feasibility of depositing entrained sediment in habitat restoration sites and how that will affect turbidity. Analysis prepared for DWR by ICF International estimated that only 7-9% of the entrained sediment could actually be reused, with the vast majority of the sediment lost. The RDEIR/SDEIS provides no analysis of the potential sediment that could actually be reintroduced at restoration sites, but the analysis prepared by ICF International estimated that only a tiny fraction is likely to be available for reuse. Furthermore, as the DEIR/DEIS acknowledges, restoring tidal wetland habitats are expected to be areas of sediment accretion; thus, any assumption that sediments deposited in habitat restoration sites will contribute significantly to turbidity in waters surrounding restoration sites is flawed.	The source of the estimate of 7-9% reuse of sediment that the commenter suggests was made is unclear. Estimates of 7-9% are in line with estimates of NDD entrainment of sediments from the Sacramento River basin that were made for the public draft BDCP's scenarios, rather than the potential percentage of sediment that could be reused. As described in the RDEIR/SEIS and as noted by the commenter, the RDEIR/SEIS estimated that around 8-9% less sediment would enter the Delta from the Sacramento River basin, which could have effects on water clarity. For discussion of reintroduction of sediment, please see response to letter 2598-85.
2598	89	In addition, the RDEIR/SDEIS fails to use existing turbidity models to analyze the impacts of the project alternatives on turbidity, incorrectly asserting that changes in turbidity in the Delta could not be quantified. RDEIR/SDEIS Appendix A at 8-82; see id. at 8-293 to 8-294. Although the RDEIR/SDEIS calculates the reductions in sediment supply, it fails to use existing models (such as the turbidity model developed by Delta Modeling Associates, which has previously been used by the Department of Water Resources and the Army Corps of Engineers) to quantitatively analyze how the reduction in sediment supply would affect turbidity. See Delta Modeling Associates webpage, available online at: http://www.deltamodeling.com/projects.html#sediment . [footnote#29: Resource Management Associates (RMA) has also developed quantitative turbidity models that have been utilized to calculate estimates of turbidity resulting from CVP/SWP operations. See http://www.rmanet.com/projects/modeling/turbidity-and-delta-smelt-forecast-modeling/ .] The RDEIR/SDEIS fails to explain why existing models and methods were not used to analyze this impact, and the conclusions in the RDEIR/SDEIS are not justified.	Please see response to comment 85.
2598	90	The RDEIR/SDEIS ignores the impact of reduced turbidity as a result of the alternatives on fish and wildlife and other water quality parameters, such as harmful algal blooms. For instance, the RDEIR/SDEIS asserts with respect to Microcystis that, "[a]s described under WQ-29 (Effects on TSS and Turbidity from CM1), changes in total suspended solids ("TSS") and turbidity levels within the Delta under the project alternatives could not be quantified, but are expected to be similar under the project alternatives to Existing Conditions and the No Action Alternative." RDEIR/SDEIS Appendix A at 8-82. Yet the reduction in sediment related to the new NDD is likely to lead to a continued reduction in turbidity. And as the RDEIR/SDEIS admits, a reduction in turbidity (particularly in combination with increased water temperatures and increased residence times) is likely to increase the severity and frequency of harmful algal blooms, including Microcystis. RDEIR/SDEIS Appendix A at 8-45 to 8-46; see Berg and Sutula 2015. Because turbidity is likely to be reduced in the future as a result of the north Delta intakes, the RDEIR/SDEIS fails to adequately analyze the likely impacts of increasing the frequency of Microcystis blooms and other harmful algal blooms and fails to disclose that Alternative 4A is likely to cause significant impacts from increased Microcystis blooms.	Analysis presented in Chapter 11 Impact AQUA-6 in the FEIR/S (see Alternative 1A, for example) acknowledges the potential for lower turbidity as a result of sediment removal by the NDD, and notes that any effect would be minimized through the reintroduction of sediment collected at the north Delta intakes, consistent with the environmental commitment addressing Disposal and Reuse of Spoils, Reusable Tunnel Material (RTM), and Dredged Material. As described in the Chapter 8, Water Quality, Section 8.3.1.7, Constituent-specific Considerations Used in the Assessment, and as noted in the comment, turbidity is not expected to change significantly with the project alternatives. Therefore, changes in turbidity are not expected to contribute to increased Microcystis blooms. Please refer to Master Response 14 for more information about the Microcystis evaluation.
2598	91	ii. The RDEIR/SDEIS Fails to Adequately Analyze Impacts of the Alternatives on	Please refer to Master Response 14 for more information about residence time, temperature, flow, human health considerations and new information supporting the Microcystis assessment for Alternatives 4A, 2D,

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		<p>Harmful Algal Blooms, Including Microcystis</p> <p>Harmful algal blooms (HAB) including the cyanobacteria <i>Microcystis aeruginosa</i> (<i>Microcystis</i>), generate toxins that can be poisonous to humans, fish, and wildlife. These blooms have become more frequent in the Delta, especially during years with exceptionally low freshwater flows through the Delta. Damaging levels of toxins produced by cyanobacteria have been detected in fish and invertebrate species in the Delta, and appear to bioaccumulate in some of the fish species studied. <i>Microcystis</i> blooms have thus been implicated as a potential driver in the rapid decline of pelagic species in the San Francisco Bay Estuary. Lehman et al. 2010. Lehman et al. (2010) reported that, “even at low abundance, <i>Microcystis</i> may impact estuarine fishery production through toxic and food web impacts at multiple trophic levels.”</p> <p>A review of factors affecting the growth of cyanobacteria in the Sacramento-San Joaquin Delta finds that among the principle factors promoting cyanobacteria (and particularly, <i>Microcystis</i>) blooms in the Delta are high water temperature, increased water clarity, and stratified water column coupled with long residence times. Berg and Sutula 2015. Salinity limits cyanobacteria blooms towards the west, but “salinity gradients do not explain the spatial distribution of cyanobacteria in the Delta” and “salinity is not a barrier to toxin transport, as cyanotoxins have been detected in SF Bay.” Berg and Sutula 2015, executive summary at iv; see also Miller et al. 2010. Furthermore, the report finds no evidence that initiation of <i>Microcystis</i> blooms in the Delta is constrained by concentration or ratios of nutrients in the Delta. The report finds that, “turbidity, low temperatures, and higher flows during most of the year are likely restricting cyanobacteria blooms to the July-August time period.” Berg and Sutula 2015. Thus, factors associated with the California WaterFix (i.e., reduced turbidity, increased residence times, and reduced flow into the Delta) in combination with effects of climate change (increased temperatures) threaten to increase the frequency and magnitude of harmful cyanobacteria blooms in the future. This outcome could have very serious effects on water quality and human health, as well as the persistence and productivity of the Delta and San Francisco Estuary’s fish and wildlife populations. The analysis of the effects of the alternatives on harmful algal blooms in the RDEIR/SDEIS is flawed in several key respects, and as a result the RDEIR/SDEIS understates the likely environmental impacts of the alternatives and fails to disclose significant environmental impacts that are likely to occur under some alternatives.</p>	and 5A.
2598	92	<p>The analysis in the RDEIR/SDEIS incorrectly assumes no reductions in turbidity in analyzing impacts of the alternatives on <i>Microcystis</i>. See, e.g., RDEIR/SDEIS Appendix A at 8-82. As the RDEIR/SDEIS admits, turbidity limits the formation of harmful algal blooms like <i>Microcystis</i>, and increased water clarity is likely to increase harmful algal blooms. Id. Appendix A at 8-45 to 8-46, 8-82. However, as discussed above the RDEIR/SDEIS admits that the operation of the North Delta intakes will reduce sediment supply by 8-9%, and turbidity in the estuary has been diminishing for several decades (Schoellhamer 2011). Increased water clarity is likely to increase the frequency and magnitude of <i>Microcystis</i> blooms (Berg and Sutula 2015). The RDEIR/SDEIS asserts that Alternatives 4A, 2D, and 5A will not cause significant impacts from increased <i>Microcystis</i> blooms because these alternatives include reduced habitat restoration, see RDEIR/SDEIS at ES-29, but the analysis incorrectly assumes that there will not be increased water clarity. Because Alternatives 4A and 2D will increase water clarity (with larger impacts to turbidity and the sediment budget under Alternative 2D because it includes a larger North Delta diversion), in combination with increased water temperatures and increased residence times, these alternatives are likely to result in</p>	Please refer to Master Response 14 for more information about residence time, temperature, flow, human health considerations and new information supporting the <i>Microcystis</i> assessment for Alternatives 4A, 2D, and 5A.

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		<p>significant environmental impacts under WQ-29 that are not disclosed in the RDEIR/SDEIS. By failing to analyze the continued increase in water clarity (as a result of both the alternative and existing conditions), the RDEIR/SDEIS fails to adequately analyze impacts of the alternatives on Microcystis blooms.</p>	
2598	93	<p>The analysis of changes to residence times under the alternatives understates the likely environmental impacts from Microcystis because it excludes the effects of climate change from the analysis. In the revisions to Chapter 8, the RDEIR/SDEIS admits that the determination of significant effects ignores the effects of climate change:</p> <p>Below, residence times under Alternative 4 is compared to residence times under the No Action Alternative to remove the effect of climate change and sea level rise, thereby revealing the effect due to CM1 (i.e., operations) and the effect of the CM2 and CM4 restoration areas, which were accounted for in the modeling performed for CM1.</p> <p>RDEIR/SDEIS Appendix A at 8-302 (emphasis added); see id. At 8-303 (concluding no water temperature- driven increases in Microcystis blooms would occur in the Delta under Alternative 4, relative to the No Action Alternative because climate change is assumed under the NAA). Similarly, in Chapter 4 of the RDEIR/SDEIS, the document concludes that changes in Microcystis under the No Action Alternative are a significant impact, [footnote#30: Table ES-9 in the Executive Summary of the RDEIR/SDEIS fails to disclose whether the No Action Alternative will result in significant impacts to water quality under NEPA and CEQA, and must be revised to include these conclusions.</p> <p>] yet it erroneously concludes that impacts under Alternative 4A and 2D would not result in a significant impact because the impacts are similar to those occurring under the No Action Alternative. RDEIR/SDEIS at 4.3.4-67 to -68. This is in part because the analysis excludes the effects of climate change in making this determination:</p> <p>Besides the effects of operations and maintenance described above, substantial increases in water residence times due to factors unrelated to the project alternative, including habitat restoration (8,000 acres of tidal habitat and enhancements to the Yolo Bypass), sea level rise and climate change, are expected to occur in the Delta, relative to Existing Conditions. Although there is uncertainty regarding the degree to which operations and maintenance of the project alternative would affect water residence times in the Delta, it is likely that such effects would be small in comparison to the combined effects of restoration activities, sea level rise and climate change. Slight increases in ambient water temperatures (1.3–2.5°F), due to climate change in the ELT, are expected to occur in the Delta under Alternative 4A, relative to Existing Conditions. However, due to the combination of the effects of restoration activities unrelated to the project alternative, climate change, and sea level rise on increased residence times, as well as the effects of climate change on increased ambient water temperatures, it is possible that increases in the frequency, magnitude, and geographic extent of Microcystis blooms in the Delta would occur, relative to Existing Conditions. The magnitude by which water temperatures and residence times would increase due to these factors would be less under Alternative 4A than under Alternative 4.</p> <p>...</p> <p>In summary, operations and maintenance of Alternative 4A is not expected to increase water residence times or ambient water temperatures throughout the Delta, and thus result</p>	<p>The purpose of the assessments in Impacts WQ-32 and WQ-33 for Microcystis for all the alternatives in Chapter 8, Water Quality of the EIR/EIS is to identify the effects if the alternative is implemented. To isolate the effects of the alternative from other factors occurring at the same time, but separate from, the alternative is the comparison of the conditions under the alternative to the No Action Alternative. Both the No Action Alternative and each action alternative include the same assumptions regarding climate change. In other words, the alternative includes the same assumption regarding climate change-related water temperature increases, hydrology effects, and sea level rise. To separate effects of climate change from effects due to the alternative, the conditions under each alternative is compared to the No Action Alternative conditions. From this comparison, effects solely due to the alternative can be identified and appropriate mitigation provided. Please refer to Master Response 14.</p>

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		<p>in adverse effects on Microcystis, relative to No Action Alternative (ELT and LLT).</p> <p>RDEIR/SDEIS at 4.3.4-67 to -68. Even though the RDEIR/SDEIS admits that cyanobacteria blooms (including Microcystis) may increase in the Delta, impairing beneficial uses, the document concludes the impacts are due to climate change, sea level rise, habitat restoration, and other factors, and no mitigation is required. Id. at 4.3.4-69. This conclusion is erroneous. In fact, the RDEIR/SDEIS demonstrates that the alternatives, in conjunction with the effects of climate change, are likely to result in significant adverse environmental impacts, and the RDEIR/SDEIS fails to disclose these impacts are likely to occur.</p>	
2598	94	<p>The RDEIR/SDEIS fails to actually model and analyze changes in residence time under the new Alternatives (Alternative 4A and 2D), despite the fact that such modeling is feasible and utilized in the RDEIR/SDEIS. See RDEIR/SDEIS at 4.3.4-66 and Table 8-60 at 8-83. The RDEIR/SDEIS fails to explain why it chose not to use the existing model to calculate residence time without habitat restoration, and it provides no analysis to support its conclusion that changes to residence time under Alternative 4A would be less than with habitat restoration. This conclusion, and the failure to employ the existing residence time model, is particularly unjustified since the document also asserts that, “there is substantial uncertainty regarding the extent that operations and maintenance of Alternative 4A would result in a net increase in water residence times at various locations throughout the Delta relative to Existing Conditions.” RDEIR/SDEIS at 4.3.4-67. The RDEIR/SDEIS provides no analysis to support its conclusion that changes in residence time may be driven more by habitat restoration than by operations of the north Delta intake and existing south Delta pumps, and text in the RDEIR/SDEIS suggests that changes in residence time as a result of the new intake facility and changes in operations are likely to be substantial. See RDEIR/SDEIS Appendix A at 8-305 (“Increases in Delta residence times are expected throughout the Delta during the summer and fall bloom period, due in small part to climate change and sea level rise, but due more proportionately to CM1 and the hydrodynamic impacts of restoration included in CM2 and CM4.”). Because it fails to use the existing model to determine what changes in residence time would occur without habitat restoration under Alternative 4A, the conclusions in the RDEIR/SDEIS are unjustified and it is likely that a significant impact would occur.</p>	<p>Please refer to Master Response 14 for an explanation of residence time considerations and new information supporting the Microcystis assessment for Alternatives 4A, 2D, and 5A.</p>
2598	95	<p>, the analysis in the RDEIR/SDEIS is flawed because the text understates the magnitude of increases in residence time that are projected to occur under the alternatives. For instance, the document asserts that increases in residence time are a “small increase” during June to September, the period when blooms are most likely to occur. RDEIR/SDEIS Appendix A at 8-102. The RDEIR/SDEIS asserts that the one exception is in the East Delta, when residence times increase on average by 20 days. Id. Yet Table 8-60a shows very substantial increases in summer and fall residence time occurring in many regions of the Delta under the No Action Alternative as compared to the Existing Conditions baseline, including a greater than 10% increase in summer residence time in the North Delta, Cache Slough, East Delta, South Delta, and Suisun Marsh, as well as more than doubling residence time in the fall in the East Delta and South Delta. According to the table, Alternative 4 [footnote#31: The RDEIR/SDEIS fails to analyze the effects of the so-called high outflow scenario under Alternative 4, only analyzing scenario H3.] would result in very substantial increases in residence time, including:</p> <ul style="list-style-type: none"> • More than doubling summer residence time in Cache Slough as compared to the 	<p>The impact of Alternative 4 on Microcystis was determined to be significant and unavoidable, as described in Chapter 8, Water Quality, Impacts WQ-32 and WQ-33. Mitigation is provided to lessen the impact. Thus, the EIR/EIS has appropriately identified potential adverse impacts of this alternative.</p>

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		<p>existing conditions baseline;</p> <ul style="list-style-type: none"> Nearly tripling residence time in the fall in the East Delta as compared to the existing conditions baseline; Nearly quadrupling fall residence time in the South Delta as compared to the NAA, and an even higher increase compared to existing conditions; Doubling fall residence time in Suisun Marsh as compared to existing conditions. RDEIR/SDEIS Appendix A at 8-83. The RDEIR/SDEIS improperly downplays these impacts in the text. [footnote#32: 32 In addition, by failing to analyze the impact of potential waivers of water quality standards and environmental commitments during future droughts, which are likely to reduce summer outflow and increase microcystis blooms, the RDEIR/SDEIS understates the likely adverse environmental impacts and fails to disclose significant impacts. <p>The same is true if operations result in greater diversions from the North Delta intakes than modeled, particularly in the summer and fall months.]</p>	
2598	96	<p>The analysis in the RDEIR/SDEIS is flawed because it focuses on the average residence time of water particles, ignoring the effects of increased residence time for particles that exceed the mean residence time and providing no biological rationale for a threshold of significance in terms of increased residence time that is likely to cause significant impacts. The RDEIR/SDEIS asserts that using the model to calculate when 50% of the particles exit the Plan Area is "a useful parameter," but admit that this analysis "do not represent the length of time that water in the various subregions spends in the Delta in total." RDEIR/SDEIS Appendix A at 8-82. There is no explanation why the average (50%) was used instead of a higher threshold such as 75%, and by focusing on the average results, the RDEIR/SDEIS ignores whether in some regions, a smaller percentage of the water (as much as 49%) could have increases in residence time that are significantly higher than that shown in the RDEIR/SDEIS. Because it is the absolute residence time, rather than mean residence time, that affects the formation of harmful algal blooms, the RDEIR/SDEIS fails to analyze potentially significant impacts.</p>	<p>The residence time results provided sufficient information from which to identify that there would be increases in residence time leading to significant impact calls for Microcystis (see Impacts WQ-32 and WQ-33 in Chapter 8, Water Quality of the EIR/S) and mitigation was introduced for Alternatives 1 through 9 to address this impact. Please refer to Master Response 14.</p>
2598	97	<p>The RDEIR/SDEIS is flawed because it focuses solely on Microcystis and does not address other harmful algal blooms, as noted by other reviewers. The document should be revised to address other harmful algal blooms and to investigate the effects, alone and in combination, of the various toxins produced by different cyanobacteria on fish, wildlife, and human health in the Delta and beyond in the Bay and nearshore ocean (see <i>infra</i>; Miller et al. 2010; Berg and Sutula 2015 and studies cited therein; UC Santa Cruz 2015).</p>	<p>Cyanobacteria are the most common harmful algae in freshwaters and Microcystis is the most common genera to bloom in freshwaters, including the Delta (Lehman et al. 2013). The toxin most often associated with Microcystis is microcystin. Although it is possible that other cyanobacteria species, such as Anabaena may form, Microcystis serves as an appropriate surrogate for all cyanobacteria. This is because cyanobacteria generally utilize similar conditions (i.e., high nutrients, low residence time, water temperatures greater than 19°C). Please refer to Master Response 14.</p>
2598	98	<p>Recent studies submitted with our Prior Comments document how changes in Delta outflow can affect recruitment and abundance of Corbula clam populations and thus affect Delta food webs. See, e.g., Brown et al. 2012; Thompson et al. 2012; The 2012; Baxter and Slater 2012. However, the RDEIR/SDEIS fails to analyze effects of changes in Delta outflows on foodwebs or Corbula clam populations. The RDEIR/SDEIS also ignores peer reviewed research that hydrologic modifications, including diversions by the CVP and SWP, have facilitated invasions of the estuary, see Winder et al 2011, and it fails to analyze the extent to which the alternatives will facilitate the abundance of invasive species in the future. Furthermore, although the environmental documents analyze the effect of project</p>	<p>The evaluation of alternatives in Chapter 11 evaluates the effects of outflow on Corbula as well as other species and habitat conditions for which there is an established linkage.</p> <p>The public draft BDCP (incorporated into the EIR/S by reference) analyzed effects on invasive species such as Potamocorbula and Egeria (see Appendix 5.F and Chapter 5), and the California WaterFix BA submitted in August 2016 analyzed effects on the foodweb through entrainment of phytoplankton carbon at the NDD, with the latter also assessing effects to Southern Resident Killer Whales as an ESA-listed species. The uncertainty in foodweb benefits from extensive tidal restoration under action alternatives has been</p>

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		<p>alternatives on numerous populations of the San Francisco Bay Estuary’s forage fish assemblage (including Longfin Smelt, Delta Smelt, Sacramento Splittail, American Shad, Threadfin Shad, Striped Bass, and Chinook salmon juveniles), the RDEIR/SDEIS fails to analyze the impact of declines in overall fish populations on migratory waterfowl (e.g., diving ducks), shorebirds, pelagic seabirds, marine mammals (e.g., Orca whales, seals, sea lions, sea otters), or piscivorous fish species. The environmental documents predict declines in many of these fish species under several alternatives (including the NAA) and declines in forage fish populations are known to have effects on fish eating predator populations.</p> <p>See, e.g., Pikitch et al. 2014, Cury et al. 2011. The RDEIR/SDEIS must be revised to analyze these effects of CVP/SWP operations on delta food webs including effects resulting from changes in residence time, Corbula and Corbicula populations, and Delta outflow.</p> <p>In addition, as noted in our Prior Comments, the analysis of the foodweb impacts of restored habitats is also significantly flawed and fails to adequately analyze the likely impacts.</p>	<p>acknowledged.</p> <p>The preferred alternative does not result in declines in fish abundance, and as such, would not affect fish predator foodwebs.</p>
2598	98	<p>The RDEIR/SDEIS Fails to Adequately Analyze Environmental Impacts of the New Alternatives on Delta Food Webs</p> <p>The RDEIR/SDEIS fails to adequately analyze the effects of CVP/SWP operations on Delta food webs, including phytoplankton and zooplankton that support Delta Smelt populations. Existing scientific information documents how changes in exports, residence time, and flows can affect these populations. See, e.g., Jassby et al. 1995; Kimmerer 2002; Winder et al. 2011; Cloern and Jassby 2012. We raised this issue in our 2012 Prior Comments, yet the RDEIR/SDEIS wholly fails to analyze these impacts (despite including some modeling of residence time for the assessment of impacts on Microcystis blooms, demonstrating that residence time modeling is available). In addition, changes in exports are likely to affect the amount of phytoplankton that is exported by the CVP and SWP, yet the RDEIR/SDEIS fails to use existing methods to assess these impacts. See Jassby et al 2002; Cloern and Jassby 2012.</p>	<p>It is unclear in what fashion it would be possible to analyze how the effects of the alternatives could be analyzed in the context of assessing invasive species, given that the identity of future invasive species and their environmental requirements are unknown. The public draft BDCP (incorporated into the EIR/S by reference) analyzed effects on invasive species such as Potamocorbula and Egeria (see Appendix 5.F and Chapter 5), and the California WaterFix BA submitted in August 2016 analyzed effects on the foodweb through entrainment of phytoplankton carbon at the NDD, with the latter also assessing effects to Southern Resident Killer Whales as an ESA-listed species. The uncertainty in foodweb benefits from extensive tidal restoration under action alternatives has been acknowledged. Please refer to Master Response 14.</p>
2598	100	<p>The RDEIR/SDEIS Fails to Adequately Analyze Impacts to Flood Risks</p> <p>The qualitative characterization of impacts to flooding (SW-2) in the RDEIR/SDEIS is misleading, and fails to disclose both potentially significant impacts (including cumulative impacts) and potential mitigation measures. The changes in flow are summarized in percent of channel capacity, and the significance threshold is set at 1% because “changes due to simulation techniques and logic in the CALSIM II model are generally about 1%.” RDEIR/SDEIS Appendix A at 6-4. However, the percentage of channel capacity is not the relevant metric for flood risk; the relevant metric is the stage height increase relative to the flood stage combined with the vulnerability of structures in the floodway at various stages. The RDEIR/SDEIS does not provide that information. Instead, it states that, “[a]lternative 4 would not result in adverse impacts” because “there would not be a consistent increase in high flow conditions” compared to the NAA. RDEIR/SDEIS Appendix A at 6-16 to 6-19. Yet the purpose of the qualitative analysis is to detect any increase above the 1% error in the model, and even inconsistent increases could have impacts and must be investigated further in a quantitative way. For instance, the document claims that the 2-3% increase of channel capacity at Bend Bridge under Alternative 4 compared to Existing Conditions would occur “due to sea level rise, climate change, and increased north of Delta demands.” RDEIR/SDEIS</p>	<p>As noted in Chapter 6 of the EIR/EIS, the flood risk analysis for the EIR/EIS uses monthly outputs from CALSIM II for planning purposes in a comparative manner. CALSIM II can provide information about how the CVP/SWP reservoirs would be operated under assumptions developed for the alternatives. While CALSIM II cannot provide daily real-time flood operations, CALSIM II results can be used as indicators of potentially increased flood risk. In SW-2, to evaluate changes in flood potential within the Sacramento and San Joaquin Rivers, simulated highest monthly flows were compared to channel capacity in the Sacramento River and San Joaquin River reaches.</p> <p>For this EIR/EIS analysis, it was determined that estimating peak flows in a sub-monthly time step based on monthly flows simulated in CALSIM II would not be reliable for flood risk analysis because CALSIM’s flood control considerations are limited to maximum allowable end of month storage. Even weekly or daily time steps would likely be unable to reflect the actual conditions faced by reservoir operators, who, based on policy decisions, could operate in a different way under severe conditions in response to circumstances as they arise in order to try to avoid catastrophic outcomes. Therefore monthly CALSIM II outputs are used to provide only an indication of consistently high storages or flows that may or may not result in flood conditions.</p>

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		<p>Appendix A at 6-16. Yet despite a greater than 1% increase, it does not conclude this is a significant impact and does not propose mitigation measures. Without investigating the daily flow pattern, it is unknown how much the highest instantaneous and daily flood stages would increase. The flood impacts of this project and potential mitigation remain undisclosed.</p> <p>The NEPA effects discussion simply states that the flood risk will be similar to if no action is taken— ignoring the fact that under the status quo, significant impacts may occur and mitigation measures may need to be undertaken. The CEQA conclusion, that the highest flows will be similar to Existing Conditions “when the changes due to sea level rise and climate change are eliminated from the analysis,” see RDEIR/SDEIS Appendix A at 6-20, ignores the possibility of great changes due to those factors that are within the ability of the project to mitigate. See also RDEIR/SDEIS Appendix A at 6-3 (comparing flood capacity to river flows under the NAA under CEQA “to avoid consideration of changes in river flows caused by sea level rise and climate change.”).</p>	<p>Please review Appendix 6A of the Final EIR/EIS for additional information.</p> <p>The higher than 1% increase reported for Alternative 4 compared to the Existing Conditions are related to changes associated with climate change and sea level rise in the No Action Alternative and Alternatives 1 through 9 as compared to the Existing Conditions. The Alternatives 1 through 9 were not developed to mitigate the changes related to climate change, sea level rise, and planned population growth. These changes are not related to changes due to implementation of the EIR/EIS alternatives. The comparison of the action alternatives to the No Action Alternative indicate the changes related to implementation of the alternatives, only.</p>
2598	101	<p>The RDEIR/SDEIS admits that the NAA will result in significant impacts from increased flood risks under CEQA, although this impact is not disclosed in the Executive Summary and the document fails to consider any feasible mitigation measures to reduce or avoid the impact. For instance, the RDEIR/SDEIS states,</p> <p>No Action Alternative (ELT) could result in an increase in potential risk for flood management compared to Existing Conditions because of the changes due to sea level rise and climate change. It is expected that flood management criteria would be modified in the future to reduce risks due to sea level rise and climate change. This potential impact is considered significant.</p> <p>RDEIR/SDEIS at 4.2-15 to -16. However, the document erroneously concludes that Alternative 4A will not cause significant impacts because it excludes the effects of climate change from the assessment. See id. At 4.3.2-5 (“Alternative 4A would not result in an increase in potential risk for flood management compared to Existing Conditions when the changes due to sea level rise and climate change are eliminated from the analysis.”).</p> <p>Thus, the reader is ill-informed of the true nature of the expected flood risks with or without the project—they are simply reassured that the risks will be similar to those without the project, so the project need do nothing about it. This flawed methodology and presentation in the RDEIR/SDEIS misleads the public and encourages flawed decision making based on inadequate and incorrect information. The analysis of flood risk must be revised and recirculated.</p>	<p>Please refer to Section 6.3.1.1, FEIR/EIS, for the methodology behind the quantitative analysis of surface water resources. This Section indicates mitigation measures are related to the changes due to implementation of the alternative and not changes due to sea level rise and climate change. Therefore, mitigation measures are related to the comparison of each alternative to No Action Alternative. Because both the No Action Alternative and Alternative 4A include the effects of climate change and sea level, comparisons against the No Action Alternative effectively teases out the effects of climate change and sea level rise and provides an apples-to-apples comparison of future conditions versus effects from Alternative 4A.</p> <p>Also, see the Executive Summary, FEIR/EIS, which identifies NAA SW-2 as a significant impact.</p>
2598	102	<p>The RDEIR/SDEIS Fails to Adequately Analyze Environmental Impacts of the New Alternatives on Delta Smelt</p> <p>The RDEIR/DEIS fails to identify significant and adverse effects of new project alternatives to Delta Smelt. Delta Smelt are listed under the state and federal Endangered Species Act and are among the most endangered species in the United States. The Delta Smelt abundance index for 2014 was the lowest on record -- approximately two orders of magnitude lower than when this species was originally listed under the ESA and half of its previous low. Most Delta Smelt live only one year and spawn after dying. Moyle et al. 2002; Bennett 2005;</p>	<p>Thresholds used in the analysis were based on professional judgement. The comment suggests that averaging across months and within water year types obscures specific effects; however, this type of results presentation is necessary as a result of the relatively broad-scale, planning-level nature of the CalSim-based analysis.</p>

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		Nobriga and Herbold 2009. As a result, the RDEIR/SDEIS use of arbitrary thresholds of significance and of averaging results across months and within year types obscures the likelihood that highly negative effects will occur in particular years and are particularly inappropriate for this species.	
2598	103	<p>Historic and ongoing Delta Smelt population declines are believed to have been caused by multiple factors, including those that undoubtedly will be altered by project alternatives such as: water exports and/or entrainment at the South Delta export facilities; salinity; turbidity; and other water quality parameters (e.g., related to elevated levels of selenium, Microcystis blooms, etc.). Nobriga et al. 2008; Nobriga and Herbold 2009; Kimmerer 2008, 2011; Mac Nally 2010; Thomson 2010; Maunder and Deriso 2011; Rose et al. 2013a,b.; see our Prior Comments at 100 and 215-233. Furthermore, the latest research from the Interagency Ecological Program’s Management Analysis and Synthesis Team (MAST 2015) has found that, “...Delta outflow and a more westward LSZ in fall, winter, and spring may have important beneficial effects on early life stages of Delta Smelt, but other factors (possibly including summer flows which were not included in this analysis) may be more important for their survival to adults.” MAST 2015 at 161. Temperatures also impact Delta Smelt productivity and, food supplies and their effect (in combination with temperature effects) on larval and juvenile growth rates is also a suspected driver of Delta Smelt population declines. Maunder and Deriso 2011; Rose et al. 2013a. While not a direct outcome of project alternatives, temperatures effects are anticipated under the NAA and project alternatives as a result of climate change. Temperature effects on Delta Smelt are largely mediated through the bioenergetic response to temperatures, and production of Delta Smelt food supplies is linked to freshwater flows through and out of the Delta. See, e.g., Jassby et al. 1995;</p> <p>Kimmerer 2002; see also Nobriga and Herbold 2009 (regarding the effects of Microcystis on Delta Smelt food supplies). Thus, project operational impacts on food supply are also vital to assessing the temperature related impacts of alternatives on Delta Smelt.</p>	Effects of the alternatives on a number of the important factors that the commenter describes are analyzed in the EIR/S: see Impact AQUA-3, Impact AQUA-4, Impact AQUA-5, and Impact AQUA-6; also relevant are Impact WQ-25 and WQ-32. In addition, the Biological Assessment submitted in August 2016 contains various detailed analyses of these factors. Please refer to Master Response 14.
2598	104	An emerging consensus regarding the Delta Smelt’s decline towards extinction is that multiple forces are likely to be at work and to interact in complex ways. Thomson et al 2010; Rose et al. 2013a, b; Management and Analysis Synthesis Team 2015. Thus, studying changes in environmental factors one at a time is unlikely to reveal the overall effects of environmental change on the Delta Smelt population. In our Prior Comments, we encouraged project proponents to apply existing life cycle models (e.g., Rose et al. 2013a, b) that synthesize the effects of changes to multiple environmental conditions in order to understand the potential response of Delta Smelt population dynamics to project alternatives. The RDEIR/SDEIS fails to mention, evaluate, or apply this modeling framework and does not incorporate findings of Rose et al (2013a,b) into its analysis of new (or old) project alternatives. Furthermore, the analysis of new alternatives (and re- analysis of old alternatives in Chapter 11) completely ignores the MAST (2015) reports findings related to X2 position and an index of Delta Smelt Recruitment. Thus, the RDEIR/SDEIS does not employ the best available science and fails to synthesize its analyses of individual effects into a credible estimate of project effects on this endangered species.	The analyses employed in the RDEIR/SEIS and subsequent analyses in the California WaterFix BA submitted in August 2016 were developed in coordination with the permitting fish agencies. Application of the Rose et al. (2013a,b) life cycle model is precluded by the model requiring inputs for zooplankton density, for which changes as a result of the alternatives are uncertain. In addition, for alternatives with broad-scale restoration, major reconfiguration of the model would be required to incorporate these areas.
2598	105	Even taking its incomplete and inadequate analysis at face value, the RDEIR/SDEIS improperly minimizes impacts to Delta Smelt that are expected to arise under the NAA. The	The comments highlight the difficulty in assessing potential effects based on modeled representation of the USFWS (2008) biological opinion. Although the modeling attempts to represent the implementation of the

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		<p>RDEIR/SDEIS reports that entrainment of Delta Smelt is expected to increase under the NAA. [footnote#33 Concerns with the method of estimating and analyzing entrainment impacts on Delta Smelt remain; the modeling of this impact has not changed from that used in the DEIR/DEIS.] The RDEIR/SDEIS rationale for its “not significant” determination regarding increased entrainment is that conditions of the 2008 USFWS Biological Opinion will regulate operations to minimize entrainment; this reasoning is flawed and circular because the NAA incorporates effects of implementing the Biological Opinion. Furthermore, the RDEIR/SDEIS statement regarding Delta Smelt salvage under the NAA is confusing and incorrect; the document states, “Despite modeled increases in entrainment in the No Action (ELT) compared to the Existing Condition, the differences are not expected to reach the level of adverse effects on Delta Smelt populations (less than 5% of the population).” RDEIR/SDEIS at 4.2-51. This may mean that the RDEIR/SDEIS considers salvage under the NAA to be “not significant” because it is “less than 5% of the population”; however, such a claim would be inaccurate because the average annual estimated proportion of the adult Delta Smelt population lost to entrainment at the SWP/CVP South Delta facilities under the NAA is greater than 5% on average and in all year types (see, for example, DEIR/DEIS Figure 11-4-2). On the other hand, the RDEIR/SDEIS rationalization for its “not significant” determination may mean that the relative “difference” between NAA and Existing Conditions is less than 5%. As discussed above, the 5% relative difference threshold is arbitrary, without biological foundation, and (given model error rates) may represent relative differences greater than 5%. [footnote#34: Indeed, the proposed biological objective for Delta Smelt entrainment under BDCP (DTSM1.2) was less than 5% of the Delta Smelt population, and the existing biological opinion (page 387) estimates that adult entrainment would be less than approximately 5% of the population under the incidental take statement.] A modeled increase in Delta Smelt entrainment means that the model’s best estimate is that entrainment will increase. This is a significant impact that the RDEIR/SDEIS fails to disclose.</p>	<p>measures intended to limit entrainment, this is challenging to do given the real-time decisions that are made by operators in light of observed fish distribution. The commenter also focuses on the absolute estimates of entrainment derived from the proportional entrainment regressions, whereas these should be viewed comparatively between scenarios in terms of relative differences.</p>
2598	106	<p>The RDEIR/SDEIS conclusion that Alternative 4A will have a beneficial effect on Delta Smelt is unwarranted. The RDEIR/SDEIS attempts to cast poor outcomes in a beneficial light by “isolate[ing] the effect of the alternative from those of sea level rise, climate change, and future water demands.” RDEIR/SDEIS at 4.3.7-24. As described above, the effect of the NAA is negative. The comparison of new alternatives to the NAA frequently shows no difference (thus, the same negative effect as the NAA) or worse outcomes. Modeled entrainment of Delta Smelt for new alternatives is alarmingly high on an absolute scale. For example, the RDEIR/RDEIS shows that greater than 5% of the adult Delta Smelt population will be entrained, on average, in every year and all year types (Figure 11-4A-2) under Alternative 4A and entrainment of larval and juvenile Delta Smelt will be greater than 10% on average and in most years types (Figure 11-4A-2). Total population entrainment is estimated to be greater than under Existing Conditions on average in Below Normal years (by 1%) and Dry years (by 6%) and is not projected to change relative to NAA in Dry or Critical years (Table 11-4A-1); these are important findings because most entrainment mortality for this species occurs in Below Normal, Dry, and Critical years.</p> <p>Furthermore, entrainment of juvenile Delta Smelt is projected to increase under Alternative 4A in Below Normal, Dry, and Critical years (Table 11-4A-1). Total population entrainment mortality under Alternative 5A is expected to increase in most years (Table 11-5A-1) and juvenile entrainment mortality is expected to increase (between 2-6%) in every year type.</p>	<p>As noted in the analyses, the estimates of entrainment are for comparisons of scenarios, as opposed to absolute predictions. Real time operational adjustments would aim to minimize entrainment, and this would occur under Alternative 4A and the baseline. It is not appropriate for planning-level analyses based on CalSim to focus on individual years, which is why summaries based on water year types are provided. Effects of NAA are due to climate change and sea level rise; alternatives would not cause these effects.</p>

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		As noted in our Prior Comments and elsewhere in this letter, the average entrainment across years is irrelevant; Delta Smelt will respond to entrainment mortality in particular years.	
2598	107	<p>The RDEIR/DEIS inappropriately dismisses potentially negative effects of project alternatives on availability of Delta Smelt spawning and incubation habitat. In its analysis of this impact (AQUA-4), the RDEIR/SDEIS states, "There is the potential for salinity to be greater than is optimal for delta smelt egg/larvae in Suisun Marsh, during February-June in drier years." RDEIR/SDEIS at 4.3.7-25. However, the environmental document dismisses this potential impact by declaring that there is no evidence that spawning habitat limits Delta Smelt populations. This statement incorrectly implies that, because spawning habitat does not limit Delta Smelt abundance or distribution currently, loss of spawning habitat cannot be a problem in the future. The loss of potential spawning habitat identified in the RDEIR/SDEIS would reduce the spatial extent of Delta Smelt spawning, which is important beyond just the loss in total acreage of available habitat. Nobriga and Herbold (2009) state that, "... it is likely that increased water clarity and possibly water diversions have constricted the distribution of suitable spawning habitat." Nobriga and Herbold 2009 at 14. Increased salinity in existing spawning habitat, as anticipated by the RDEIR/SDEIS, would be expected to further constrain the distribution of Delta Smelt spawning. Even if Delta Smelt are not currently limited by total acreage of spawning habitat, continued restriction of their geographic extent is a grave risk to the population. See, e.g., Mac Elhaney et al. 2000; Rosenfield 2002. Finally, the RDEIR/SDEIS contradicts the DEIR/DEIS' findings for Alternative 4 and part of its justification for tidal wetlands restoration (CM4); the DEIR/DEIS states: "Alternative 4 would reduce the flows downstream of the north Delta intakes, with the reduction being greatest for H1 and H3 (which do not include enhanced spring outflow) and lowest for H2 and H4 (which include enhanced spring outflow). However, flow reductions below the north Delta intakes are not expected to substantially reduce available spawning habitat under any of the operating scenarios for Alternative 4 because implementation of CM4 Tidal Natural Communities Restoration is expected to more than offset any loss of spawning habitat caused by reduced flows below the north Delta intakes."</p> <p>DEIR/DEIS at 11-1295. Project proponents cannot have it both ways; either flow reductions under Alternative 4 cause an impact to Delta Smelt spawning habitat that requires mitigation, or Conservation Measure 4 does not provide a benefit to Delta Smelt via increasing spawning habitat.</p>	As the commenter notes, the analysis indicates that there is not currently evidence for a link between spawning/egg incubation habitat and operations; it would be speculative to suggest that such a link could occur in the future. The commenter suggests that the analysis of Alternative 4 is contradictory in terms of stating that tidal habitat restoration would offset the effect of operations, but the analysis only indicates that if there is an effect, it would be offset by the large extent of restoration under Alternative 4, a BDCP alternative. Both the analysis for Alternative 4A (the preferred alternative) and the analysis for Alternative 4 are consistent in concluding that the effect of operations is less than significant.
2598	108	<p>The RDEIR/SDEIS improperly minimizes the likely negative effect of reductions in suspended sediment caused by operations under the new alternatives. As we discuss elsewhere in these comments and in our Prior Comments, operation of the NDD is expected to reduce suspended sediment and turbidity throughout the Plan Area – by ~9% for Alternative 4A. See RDEIR/SDEIS at 4.3.7-29. Reductions in turbidity are already believed to have a negative effect on Delta Smelt productivity, abundance, and geographic extent. See Nobriga et al. 2009; Thomson et al. 2010; Maunder and Deriso 2011. Reductions in turbidity also facilitate increased predation on fishes and an increased likelihood of toxic cyanobacteria blooms (such as Microcystis), both of which are likely to increase direct mortality of Delta Smelt (and cyanobacteria blooms may further limit Delta Smelt prey availability). See, e.g., Nobriga and Herbold 2009; MAST 2015. Thus, further reductions in suspended sediment under new project alternatives are likely to have a negative effect on Delta Smelt that is not disclosed in</p>	Please see response to comment 85 for information about turbidity and the project. Please refer to Master Response 14.

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		the RDEIR/SDEIS.	
2598	109	<p>The RDEIR/SDEIS reiterates the erroneous claim of the DEIR/DEIS that restored tidal marsh habitats, included as part of Environmental Commitment 4, will benefit Delta Smelt (and other pelagic fish species) by increasing food supplies. See, e.g., RDEIR/SDEIS at 4.3.7-31 and 4.4.7-7. As documented at length in our Prior Comments, there is no scientific support for this assertion regarding previously planned habitat restoration efforts and even less support now that the planned restoration acreages have been reduced by several orders of magnitude (from 65,000 acres in CM4 to the 59 acres of inundated habitat that the California WaterFix Environmental Commitment 4 proposes to restore).</p>	<p>The uncertainty in the potential effects from tidal marsh habitat restoration was acknowledged as part of the public draft BDCP. For detailed responses on the primary issues being raised with regard to the BDCP or Alternative 4, as well as a discussion of the current status of the draft BDCP Effects Analysis, please see Master Response 5 which includes specific discussion of the issue raised by the comment for tidal habitat restoration uncertainty. However, specific to the examples in the RDEIR/SEIS that the commenter provided (e.g., for Impact AQUA-9 on p. 4.3.7-31), the analysis focuses on the offsetting of loss/modification of tidal habitat functioning (e.g., for prey production); the extent to which such functioning is uncertain would presumably apply equally to the existing habitat and the restored habitat.</p> <p>Please see Master Response 5 for background on the assumption of habitat restoration benefits to native fishes.</p>
2598	110	<p>The RDEIR/SDEIS Fails to Adequately Analyze Environmental Impacts of the New Alternatives on Longfin Smelt</p> <p>Longfin Smelt is a pelagic fish species native to the San Francisco Bay Estuary. It is listed as threatened under the California Endangered Species Act. The U.S. Fish and Wildlife Service has determined that this population warrants listing under the federal ESA, although the actual listing is temporarily precluded by funding and bureaucratic constraints. USFWS 2012a. On a proportional basis, the Longfin Smelt's population decline in the San Francisco Bay-Delta Estuary is as great as, or greater than, that observed for Delta Smelt. The 2014 abundance index from the fall midwater trawl survey (FMWT) for Longfin Smelt was the second lowest on record, representing a 99.9% decline from the highest index values in the 1980-2014 period. Results from two other fish assemblage surveys produced similar results; 2014 index values represented declines of 99.5% and 99.3% from high levels detected since 1980 for the Bay Study's midwater trawl and otter trawl (BMWT and BOT), respectively. Most Longfin Smelt live no more than two years and spawn after dying. Moyle et al. 2002. Because of its extremely low abundance and short life span, negative effects that occur in a year when the population is already extremely low (as it now is in almost every year) could result in loss of an entire cohort of Longfin Smelt or the entire population. The RDEIR/SDEIS fails to adequately assess impacts to Longfin Smelt because of its reliance on arbitrary thresholds of significance, by averaging results across months and within year types, and by failing to estimate changes in Delta outflow for periods of relevance to Longfin Smelt productivity, all of which obscure the likelihood that highly negative effects will occur in particular years. As a result, the RDEIR/SDEIS fails to assess whether impacts will result in the loss of the entire population or a year class.</p> <p>It is well documented that Longfin Smelt abundance in this estuary respond positively to increasing winter-spring flows into, through, and out of the Delta. [footnote#35: Although some studies have related the flow effect on Longfin Smelt productivity to Sacramento River inflow to the Delta, see Stevens and Miller 1983, given the species' ecology, it is most likely that flows out of the Delta into Suisun Bay are the driving force behind the mechanisms underlying the abundance-flow relationship, see Rosenfield 2010. In either case, diversion of flow at the North Delta Diversion facility proposed by the California WaterFix would be expected to negatively affect the species' population.</p> <p>] See, e.g., Stevens and Miller 1983; Jassby et al. 1995; Kimmerer 2002; Rosenfield and Baxter 2007; Kimmerer et al. 2009; Thomson et al. 2010; Mac Nally et al. 2010; Nobriga and Rosenfield in press. Indeed, this flow: abundance effect has persisted over multiple decades</p>	<p>The current diminished population status of longfin smelt is acknowledged and is described in Section 11A.2 of Appendix 11A of the FEIR/EIS. The comment suggests that averaging across months and water year types obscures specific effects; however, this type of results presentation is necessary as a result of the relatively broad-scale, planning-level nature of the CalSim-based analysis. Regarding uncertainty about the effects of freshwater flow on longfin smelt, the RDEIR/SEIS does not describe the flow-abundance relationship as an "uncertainty" at the example locations in the document that the commenter provides; rather, the document describes that it is unknown what the mechanisms behind the correlation are (i.e., there is uncertainty in the mechanisms); investigation of these mechanisms and a proposal to adaptively manage operations accordingly is described. The best available relationship is used for the assessment, i.e., the analysis based on Kimmerer et al. (2009). All analyses include this relationship, and give the results presented in Chapter 11 of the RDEIR/SEIS, which lead to conclusions regarding significance of impacts and mitigation measures as described therein.</p>

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		<p>and is seen in data from multiple independent surveys. Rosenfield and Baxter 2007; Nobriga and Rosenfield in press. It is one of the strongest ecological relationships found in the San Francisco Bay Estuary and its watershed. No other ecological factor studied has been found to have nearly as strong and persistent a relationship with Longfin Smelt abundance and productivity as winter- spring freshwater flows. [footnote#36: In a bizarre twist of logic, the RDEIR/SDEIS analysis of new alternatives turns the incredible weight of evidence relating freshwater flows and Longfin Smelt productivity into an “uncertainty” (e.g., at 4.1-9 and 4.3.7-36) that it plans to “adaptively manage” in the future. The RDEIR/SDEIS steadfast refusal to acknowledge the relationship of winter-spring Delta outflows on Longfin Smelt abundance and productivity generates little confidence that future efforts to inform management with science will result in increased flows needed to protect this population.] Project alternatives that are expected to reduce winter-spring flows through the Delta and into the estuary must be expected to lead to declines in the Longfin Smelt population. To the extent that operation of a new diversion facility in the North Delta reduces the chances of increasing Delta outflow in certain years or on average in the future, that alternative is likely to lead to continued declines in abundance, or at best persistence at current population levels that are 2-3 orders of magnitude below historical populations. These low population levels also represent a significant degradation to the San Francisco Bay Estuary’s food web, as Longfin Smelt were once among the most abundant forage fish in this region. Moyle 2002; Kimmerer 2002a; US Fish and Wildlife Service 2012b; Nobriga and Rosenfield in press.</p>	
2598	111	<p>The RDEIR/SDEIS Ignores Significant Scientific Information Regarding Impacts to Longfin Smelt And Understates the Environmental Impacts of the New Alternatives</p> <p>The RDEIR/SDEIS’ description of the effect of freshwater flow on Longfin Smelt spawning, incubation, and larval rearing (Impact AQUA-22; e.g., at 4.3.7-36) is clearly erroneous and fails to use the best available science. It relies on the DEIR/DEIS discussion of these effects and, as discussed in our Prior Comments (e.g., at 129-148) and supra, the DEIR/DEIS did not represent the best available science with regard to Longfin Smelt spawning, incubation, and larval rearing. Important findings from Nobriga and Rosenfield (in press) that are not incorporated or are misinterpreted by the RDEIR/SDEIS include that Longfin Smelt population dynamics are a function of:</p> <ol style="list-style-type: none"> 1. Initial abundance (i.e., there are stock recruit effects; see also Thomson et al. 2010); 2. Fresh water flow rates during the spawning, incubation, and larval rearing period (as opposed to later in life); 3. Survival of Age 0 fish until spawning; and 4. Density dependence in both the recruits-per-spawner and spawners-per-recruit relationships <p>See Nobriga and Rosenfield (in press).</p> <p>The RDEIR/SDEIS approach to modeling Longfin Smelt population dynamics completely ignores points</p>	Please see the response to comment 50 regarding the review of newer information for use in the analysis.

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		#1, #3, and #4. There is no historicity in application of X2-abundance regressions modified from Kimmerer et al. (2009). As we have noted before, (a) application of these regressions would only predict Longfin Smelt population extinction for one particular value of X2 and, (b) even were such a value modeled, the population would be magically “resurrected” in the next year when X2 values predicted a positive population. Both of those outcomes are biologically flawed and unrealistic.	
2598	112	<p>The RDEIR/SDEIS grudgingly accepts that the X2-abundance correlation for Longfin Smelt is the best available relationship “at this time” (at 4.3.7-36) for predicting outcomes of project alternatives.</p> <p>However, as noted in Prior Comments and above, the RDEIR/SDEIS fundamentally misinterprets Kimmerer et al (2009) as saying that the position of the salinity field (partially a function of Delta outflow) drives Longfin Smelt population dynamics by altering available Longfin Smelt habitat, rather than some other mechanism tied to Delta outflow; ironically, the very paper that the RDEIR/SDEIS relies on (Kimmerer et al. 2009) find little support for application of X2 as an index of Longfin Smelt habitat availability (though it is an index of Longfin Smelt abundance in scenarios where outflow, not sea level rise, is the force responsible for changing X2). The inappropriate use of X2, rather than outflow, to estimate Longfin Smelt abundance in the future leads to a confounding of project effects on Delta outflow during the winter and spring with the effects of sea level rise. Furthermore, Kimmerer et al.’s 2009 regression equations are not the best available estimates of X2 (or flow) effects on Longfin Smelt abundance, as Thomson et al. 2010 found evidence of an additional step-change in this relationship for which Kimmerer 2009 does not account. Most recently Nobriga and Rosenfield (in press) developed a more comprehensive approach to modeling Longfin Smelt population dynamics that incorporated each of the four main points above.</p>	The evaluation of longfin smelt spawning and rearing uses a winter-spring outflow regression to assess the effects of the action alternatives, with further detail provided in the ITP application for 2081. In addition (and as discussed in the revised draft take analysis), the exploration by Nobriga and Rosenfield (2016) suggested that Delta outflow effects may subsequently be tempered by density-dependent survival in the juvenile life stage (occurring in marine or mesohaline waters), which suggests that small effects of slightly lower Delta outflow under the preferred alternative may not accumulate over time. Several studies are underway to better understand the species and the CWF Adaptive Management Program will also contribute to better understanding the longfin smelt needs, and make adjustments as necessary.
2598	112	On behalf of the Natural Resources Defense Council, The Bay Institute, Defenders of Wildlife, Pacific Coast Federation of Fishermen’s Associations, Institute for Fisheries Resources, and San Francisco Baykeeper, we are writing to comment on the California WaterFix / Bay Delta Conservation Plan (“BDCP”) Revised Draft Environmental Impact Report / Supplemental Draft Environmental Impact Statement (“RDEIR/SDEIS”). As you know, many of our organizations have been engaged in the BDCP process since its very beginning, and several years ago requested that the state and federal agencies formally evaluate a Portfolio Alternative (including new conveyance and new South of Delta storage) in the environmental documents prepared under the National Environmental Policy Act (“NEPA”) and California Environmental Quality Act (“CEQA”). Unfortunately, the agencies have refused to analyze and consider such an approach in the RDEIR/SDEIS.	<p>The Portfolio Alternative was considered, but for reasons discussed in Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1, Section 3A.11.1.1, it was not included for additional analysis in the Final EIR/EIS.</p> <p>For additional detail on how alternatives were chosen, please see Master Response 4.</p>
2598	113	Nobriga and Rosenfield (in press) probed mechanistic relationships between flow and the persistent, high-order, statistically significant relationship between winter-spring Delta outflow and Longfin Smelt productivity. Their results demonstrate that there has been no change in the relationship between freshwater flow and abundance of young Longfin Smelt (Age 0 fish) relative to spawning stock (Age 2 fish) over the past several decades – the well-documented step-declines in Longfin Smelt abundance with respect to flow, see, e.g., Kimmerer et al. 2002; Thomson et al. 2010, are not related to any change in the relationship between spawner-recruit productivity and flow. Nobriga and Rosenfield (in press) found evidence of declining Longfin Smelt survival between Age-0 and spawning-aged fish (Point #3 above), but noted that during this period, most Longfin Smelt are found in deep water in	Please see comment 112 for more information about longfin smelt-flow relationships and using Nobriga and Rosenfeld (2016) in the analyses.

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		the downstream embayments of the San Francisco Estuary or the nearshore Pacific Ocean. See Rosenfield and Baxter 2007; Rosenfield 2010. In other words, forces that contribute to the decline in Longfin Smelt (beyond those related to Delta outflow effects on the spawner-recruit relationship) likely occur outside of the Plan Area. In addition, this study found that Longfin Smelt abundance data from three different sampling gears (FMWT, BMWT; and BOT) were quite consistent, contrary to the RDEIR/SDEIS' unsupported claim of "bias" in some of the sampling programs.	
2598	114	The Estuary's population of Longfin Smelt is likely to decline under the new alternatives proposed by the California WaterFix because winter-spring Delta outflow declines in most years relative to baseline conditions. At best, the new alternatives produce outflows similar to baseline, but baseline conditions are producing ongoing declines for this imperiled population. Table 11-4A-8 does not represent likely outcomes of operations under Alternative 4A because it employs equations that are: (a) out of date and thus not representative of the best available science; and, (b) based on a fundamental misunderstanding of the X2-abundance relationships, which then become confounded by the RDEIR/SDEIS's estimates of sea level rise.	Examination of the potential effects on longfin smelt has been taken further in the incidental take application associated with the CESA 2081 compliance necessary for the preferred alternative (Alternative 4A, California WaterFix). This analysis considered available approaches and update the Kimmerer et al. (2009) X2-abundance regression relationship. Newer analyses, including Nobriga and Rosenfield (2016) and Maunder et al. (2015) were considered for application, but were not used for quantitative analysis either because they did not include an outflow/X2 term (Maunder et al. 2015) or else had various issues with model fit (Nobriga and Rosenfield 2016), which would result in these models not being useful to estimate effects over time. The purpose of the CEQA and NEPA analysis is to disclose significant and adverse effects of the project and alternatives, which does not include current conditions. The further analysis conducted for the ITP application does not indicate that the conclusions presented in the EIR/EIS require any adjustments. Also refer to response to comment 112.
2598	115	Under Alternatives 2D and 5A, Delta outflow is expected to decline relative to the NAA (or in a few cases, remain unchanged) in every month from February-May, in every year type. As a result, the RDEIR/SDEIS determines that both alternatives will have adverse results (at 4.4.7-10 and 4.5.7-11). As discussed above, there is no evidence that mitigation measures AQUA22a-c would have any effect on Longfin Smelt populations as they describe efforts to identify and develop potential mitigations, not the mitigations themselves. The RDEIR/SDEIS acknowledges that application of mitigation measures AQUA22a-c will not change the "adverse" effect determination.	As the commenter notes, the RDEIR/SDEIS acknowledges that application of mitigation measures AQUA22a-c will not change the "adverse" effect determination. Results for the range of changes in Delta Outflow under Alternative 4A are presented in more detail in Appendix 5A, BDCP EIR/S Modeling Technical Appendix, of the Draft EIR/EIS. For a more detailed response regarding impacts to beneficial uses of water, please see Master Response 34.
2598	116	The RDEIR/SDEIS obscures changes to Delta outflows under Alternative 4A because it fails to specify operations during this period. Furthermore, the RDEIR/SDEIS fails to aggregate estimated Delta outflows under the proposal for time periods that are likely to be relevant to Longfin Smelt productivity. Different authors have studied freshwater flow rates in different combinations of months (e.g., March-May; January-March) to study the effect of flow on Longfin Smelt productivity. Nobriga and Rosenfield (in press) studied flows in December-May because these months fully overlap the spawning and larval rearing phases of Longfin Smelt's life cycle in the San Francisco Estuary (see CDFW 2010) and because the correlation of flows among months within years makes it difficult to segregate the effect of flow statistically (Personal Communication, M. Nobriga, USFWS). Using the modeling of Alternative 4 flows presented in Appendix B, we observe that freshwater Delta outflow aggregated from December to May will decline relative to the NAA during all but the Dry year type for Alt4_H3 and for all but the Dry and Below Normal year types for Alt4_H4. Thus, if operations under Alternative 4A are bracketed by estimated flows under operational variants H3 and H4, it is reasonable to believe that Delta outflows during the December-May period will decline in the majority of years and, as a result, Longfin Smelt populations will decline under Alternative 4A. The	Please refer to response to comments 112 and 114. There has been substantial investigation and analysis conducted throughout the development of the project to determine the appropriate CVP-SWP Delta outflow for longfin smelt. However, there are still substantial uncertainties as to the necessary timing, volume, and application of Delta outflow. Additionally, the SWRCB is currently in the process of updating the Bay-Delta Water Quality Control Plan, which takes into account all beneficial uses, including non-project diverters. As part of that process, the question of how much outflow longfin smelt (or other species) needs will be addressed. Additionally, the CWF includes an Adaptive Management Program that will aid in improving the understanding of Delta outflow and other conditions' relationship to longfin smelt abundance, and to making adjustments to ensure compliance with CESA and other applicable regulations. As part of the CESA 2081 application, DWR and DFW have collaborated to provide spring outflow criteria for longfin smelt which aim to achieve outflows similar to those under the existing climate. Future adjustments based on new information and/or the WQCP update can be made as necessary.

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		<p>RDEIR/SDEIS fail to acknowledge this adverse result.</p> <p>As described in our Prior Comments, it is possible that the flows that drive Longfin Smelt population dynamics in this estuary occur in particular months during the December-May period; although this effect is difficult to discern statistically, it is valuable to study changes in flows caused by project alternatives in particular months to understand the potential risk to Longfin Smelt populations (i.e., the change in total flow from December-May may underestimate the effect of flow alterations that occur in particular months during that period). The RDEIR/SDEIS presentation of flow changes in individual months demonstrates that flows decline in most of the months critical to Longfin Smelt spawner-recruit productivity under both operational variants in many years. For example, flows under variant H3 decline in most year types between February and May as compared to Existing Conditions (by as much as 20.6%), and Delta outflows decline versus the NAA alternative in every year type of March-May. The H4 operational variant is intended to produce improved outflow conditions, but flows actually decline in every month from February-June during a large proportion of years (at least 2 of the five year types modeled) as compared to Existing Conditions – flows are reduced in the driest years throughout the February-May period. As compared to the NAA, flows under Alternative 4_H4 decline or remain unchanged in most months from January through May during Critical, Dry, Above Normal, and Wet years. As noted above, the flow modeling in the RDEIR/SDEIS assumes implementation of applicable regulations (e.g., D-1641 flow and salinity standards; RPA’s of the Biological Opinion), but many of these standards have been waived or weakened repeatedly in drought conditions. If safeguards for clean water, endangered species, and/or fish and wildlife are not fully enforced in the future, then the Delta outflows projected in the RDEIR/SDEIS will not materialize and impacts to Longfin Smelt in the San Francisco Estuary will be even worse than analyzed in the RDEIR/SDEIS. Thus, analyses of estimated Delta outflows across periods when they are likely to be relevant to Longfin Smelt populations (December-May and smaller intervals of months between December and May) reveal that the Longfin Smelt population should be expected to decline relative to NAA in most year types. This negative effect of Delta outflow reductions is a significant adverse impact not disclosed by the RDEIR/SDEIS, and the document must be revised to consider feasible mitigation measures including increased Delta outflow.</p>	
2598	117	<p>Despite our Prior Comments, the RDEIR/SDEIS still fails to estimate Longfin Smelt entrainment using known and statistically significant relationships between entrainment and Old and Middle River flows</p> <p>(OMR; see Grimaldo et al. 2009). Grimaldo et al. (2009) demonstrated that Longfin Smelt entrainment begins to occur as OMR flows become negative and that they increase exponentially as the magnitude of these “reverse flows” increases. OMR decreases (becomes more negative) under Alternative 4 in most year types during April and May (when entrainment of Longfin Smelt larvae and juveniles would be expected to occur, see Grimaldo et al. 2009; Rosenfield 2010, versus Existing Conditions and substantial declines are predicted as compared to NAA in many years. More negative OMR flows would be expected to increase Longfin Smelt entrainment rates during Critical and Dry years (when most Longfin Smelt entrainment occur); problems may also arise under Below Normal years under Alternative 4A, given the increasingly negative OMR flows expected during those years. Under Alternative 2D, OMR flows are negative (frequently more negative than NAA and/or Existing Conditions) in April-June of Above Normal, Dry and Critical years; similarly, OMR flows are negative under Alternative 5A during Dry and Critical years from April-June.</p>	<p>Further investigation of Longfin Smelt entrainment potential has been undertaken as part of the DFW 2081 permitting process for the California WaterFix, including salvage assessment using the relationship from Grimaldo et al. (2009). See the Final EIR/EIS Chapter 11.</p>

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		<p>Thus, we would expect entrainment of Longfin Smelt to be unacceptably high under those alternatives.</p> <p>The RDEIR/SDEIS models Longfin Smelt entrainment using particle tracking and the so-called “salvage density method.” Under Alternative 5A, Longfin Smelt entrainment is expected to increase in some year types, compared to both Existing Conditions and the NAA – of particular concern is the projected increase versus the NAA in Below Normal and Critical years as these are year types when entrainment of these fish occurs and in which the USFWS (2012a) currently assumes they will be protected by implementation of the Delta Smelt Biological Opinion RPA. Both methods indicate large reductions in entrainment mortality under Alternatives 4A and 2D. While we would welcome such reductions in entrainment mortality, the benefits asserted in the RDEIR/SDEIS are vastly overstated for wetter years as Longfin Smelt salvage is negligible (almost always zero when net Delta outflow during February-June is >25,000cfs) during such years. See Grimaldo et al. 2009; Rosenfield 2010. The RDEIR/SDEIS improperly implies that large reductions in Longfin Smelt entrainment can occur in year types when large numbers of Longfin Smelt are not entrained in those year types. Furthermore, the particle tracking and salvage density estimates of entrainment do not account for shifts in the position of the low salinity zone due to sea level rise. Although it is not appropriate to use X2 as an index of Longfin Smelt abundance in scenarios involving sea level rise (because the relationship of Longfin Smelt abundance with X2 has only been studied under relatively static sea levels and because X2 does not necessarily represent the functional mechanisms by which Longfin Smelt respond to Delta outflow), the position of the salinity field appears to be directly related to the location of Longfin Smelt spawning and early rearing, and thus to entrainment risk for Longfin Smelt. See, e.g., Dege and Brown 2004; Grimaldo et al. 2009; Rosenfield 2010. In summary, by failing to model Longfin Smelt entrainment correctly, the RDEIR/SDEIS fails to identify and disclose significant adverse impacts on this threatened population or identify and consider feasible mitigation measures.</p>	
2598	118	<p>The RDEIR/SDEIS Fails to Disclose that the No Action Alternative and other New Alternatives Result in Significant Impacts to Longfin Smelt, and it Ignores Feasible Mitigation Measures Including Changes to Delta Outflow Requirements</p> <p>In addition to failing to adequately analyze the effects of the alternatives on Longfin Smelt as discussed above, the RDEIR/SDEIS also fails to disclose that the No Action Alternative and all of the new alternatives are likely to cause significant adverse impacts on Longfin Smelt, which can be reduced or mitigated by increasing spring outflow. The RDEIR/SDEIS must be revised to do so.</p>	<p>Contrary to the commenter’s claim, the RDEIR/SEIS does disclose the potential for significant adverse impacts to longfin smelt from the alternatives, and discusses proposed mitigation measures. Changes to Delta outflow requirements cannot be proposed by the alternatives, as these are set by the SWRCB’s Bay-Delta Water Quality Control Plan. Note that the SWRCB is currently in the process of updating the Bay-Delta Water Quality Control Plan, which has a scope broader than the preferred alternative (Alternative 4A), and applies to all water users in the Delta, including the CVP and SWP. Once the updated WQCP is adopted, the CVP and SWP will be required to comply, even if the Delta outflow criteria included in the WQCP are different than what is adopted for the BDCP/CWF. The preferred alternative (Alternative 4A; California WaterFix) includes the current Bay-Delta Water Quality Control plan criteria.</p> <p>For more information regarding impacts to smelt please see Master Response 17.</p>
2598	119	<p>Because CVP/SWP operations are significantly reducing the abundance and viability of Longfin Smelt as a result of substantially reducing winter/spring Delta outflow, both the Existing Conditions and No Action Alternative cause significant impacts to this species. CEQA Guidelines § 15065; RDEIR/SDEIS Appendix A at 11-94. The RDEIR/SDEIS suggests that climate change will cause significant impacts to Longfin Smelt under the No Action Alternative, but ignores the significant effect of CVP/SWP operations in reducing winter/spring delta outflow and fails to identify any mitigation measures. See RDEIR/SDEIS Appendix A at 11-107. Indeed, the RDEIR/SDEIS admits that Longfin Smelt abundance is expected to decrease by 33% on average under the No Action Alternative compared to</p>	<p>Please refer to Master Response 1 for information about environmental baselines. Mitigation is required for effects not caused by action alternatives.</p>

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		Existing Conditions. [footnote#37: But see discussion supra regarding use of X2 instead of outflow to calculate longfin smelt abundance.] Id. Increased Delta outflow is a feasible mitigation measure to address this impact, and the RDEIR/SDEIS must be revised to acknowledge the substantial role of CVP/SWP operations in reducing Delta outflow and propose increases in Delta outflow as a mitigation measure to reduce or mitigate this impact.	
2598	120	<p>Despite the fact that the NAA causes significant impacts to Longfin Smelt, the RDEIR/SDEIS concludes that Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 5, 6A, 6B, 6C, 7, 8 and 9 will not cause significant impacts to Longfin Smelt under impact AQUA-22. RDEIR/SDEIS Appendix A at 11-216. [footnote#38:The text also contradicts the executive summary, claiming that impact AQUA-22 will not be significant under</p> <p>Alternative 4. Compare RDEIR/SDEIS at ES-50 (significant impact before mitigation) with RDEIR/SDEIS Appendix A at 11-216.] This conclusion is incorrect for all of the alternatives that reduce Delta outflow, as well as for the alternatives that do not substantially increase Delta outflow to a level sufficient to avoid jeopardizing the continued existence of the species. The RDEIR/SDEIS incorrectly assumes that habitat restoration will reduce the impacts of Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, and 5 to a less than significant level. RDEIR/SDEIS Appendix A at 11-217. However, as discussed previously, there is no scientific evidence that habitat restoration is likely to provide substantial benefits for Longfin Smelt, and the conclusion that this habitat restoration will mitigate these impacts to a less than significant level is arbitrary and capricious.</p>	Please refer to Master Response 1 for information about environmental baselines. Please refer to Master Response 5 for information regarding habitat restoration benefits to native fish species.
2598	121	<p>The RDEIR/SDEIS claims that Alternative 4A is not adverse because spring outflow will be managed to avoid differences from the No Action Alternative. RDEIR/SDEIS Appendix A at 11-217 (“As described in more detail in section 4.3.7, Alternative 4A is not adverse because Delta outflows would be provided to avoid differences from NAA during spring, included in Mitigation Measure AQUA-22d.”). As demonstrated above, Delta outflow under Alternative 4A is significantly reduced compared to the NAA for key months and water year types. Moreover, Delta outflow under the No Action Alternative will result in significant adverse impacts to Longfin Smelt. Simply maintaining Delta outflow at the level of the Existing Conditions baseline is insufficient to avoid a mandatory finding of significance because Delta outflow under Existing Conditions is jeopardizing the continued existence of Longfin Smelt. And as</p> <p>noted above, abundance of Longfin Smelt is anticipated to decline by 33% under the NAA compared to Existing Conditions. See RDEIR/SDEIS Appendix A at 11-107. Meeting the NAA conditions will result in continued declines in abundance of Longfin Smelt and will jeopardize the continued existence of the species.</p> <p>Similarly, the RDEIR/SDEIS claims that Alternatives 6A, 6B, 6C, 7, 8, and 9 would not be adverse because they “had similar or greater predicted all-year mean fall midwater trawl indices than NAA.” RDEIR/SDEIS Appendix A at 11-217. Yet the RDEIR/SDEIS fails to analyze whether the increase in abundance predicted by the modified Kimmerer 2009 equation would be sufficient to restore the abundance of the species, as opposed to simply maintaining the continued declines in abundance under the NAA, let alone under the Existing Conditions baseline.</p> <p>The RDEIR/SDEIS must be revised to disclose that Existing Conditions, the No Action Alternative, and any alternative that simply maintain Delta outflow and Longfin Smelt</p>	Please refer to Master Response 1 for information about environmental baselines.

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		abundance at levels similar to the No Action Alternative (including Alternatives 4 and 4A) result in significant environmental impacts, and the RDEIR/SDEIS must be revised to identify and analyze feasible mitigation measures, particularly increases in Delta outflow, to reduce or avoid these impacts. [footnote#39: 39 Maintaining Delta outflows and Longfin Smelt abundance at these levels is inconsistent with the obligations of Reclamation and DWR under CESA and the ESA.]	
2598	122	The RDEIR/SDEIS fails to adequately analyze the likely socioeconomic impacts to recreational and commercial salmon fishing from the alternatives, particularly operations. Fall-run Chinook salmon form the backbone of the salmon fishery in California and along the West Coast, and reductions in the abundance of fall-run Chinook are likely to cause socioeconomic impacts to sport and commercial fishermen and related businesses. In addition, reductions in the abundance of winter-run Chinook salmon or other ESA listed species are also likely to cause socioeconomic impacts to the salmon fishery, because fishing is constrained to protect ESA listed stocks. The RDEIR/SDEIS wholly fails to analyze the socioeconomic impacts to the sport and commercial salmon fishery (Chapter 16) and erroneously assumes that there would be no significant impacts to salmon populations in its brief assessment of recreational impacts. See RDEIR/SDEIS Appendix A at 15-32.	As described in Chapter 11, Fish and Aquatics, and summarized in the Executive Summary, effects to fall- and late fall-run Chinook salmon are all less than significant with mitigation/not adverse for Alternative 4A. Effects on winter-run Chinook salmon are all less than significant/not adverse or beneficial for 4A. Mitigation measures would be implemented to reduce impacts. Therefore, socioeconomic impacts are not expected due to effects on Chinook salmon runs.
2598	123	Our Prior Comments on project effects on through-Delta survival of winter-run (e.g., at 176-178); spring-run (e.g., at 184-186); fall-run (e.g., at 214-215); and late-fall run Chinook salmon (e.g., at 213-214) and, in general (e.g., at 186-189) are still relevant and remain unaddressed in the RDEIR/SDEIS. The RDEIR/SDEIS continues to model salmonid survival through the Delta using the Delta Passage Model (DPM) despite the fact that this model is built around data from fish that are expected to behave very differently than most of the Chinook salmon migrating into the Delta. DPM is based on data from studies of hatchery origin late-fall run Chinook salmon that are much larger and older than the wild salmon fry and parr. Smaller Chinook salmon are weaker swimmers and are likely to have migration/rearing strategies that differ from older larger fish (e.g., rearing rather than migrating), and these smaller and younger migrants represent the bulk of Chinook salmon entering the Delta. See, e.g., Williams 2006; Sturrock et al. 2015. Also, wild Chinook salmon are expected to behave very differently from hatchery-produced salmon. See, e.g., Quinn 2005; Williams 2006; Williams 2010. Furthermore, the DPM is constructed based on fish behavioral responses to flow, turbidity, width-to-depth ratios, and hydrodynamic patterns that have been observed in recent years. It is incorrect to assume that those results can be extrapolated to the significantly reduced flows, reduced turbidity, increased width-to-depth ratios, and hydrodynamic patterns below the NDD that will result from operations under the new alternatives. Thus, the applicability of the DPM to migrations of fry and parr-sized Chinook salmon or to any fish under the completely different environmental conditions that will accompany operation of the NDD is highly questionable and represents a major flaw in the analysis that must be corrected.	Please refer to response to comment 65. The methods included in the EIR/S, public draft BDCP, California WaterFix BA submitted in August 2016, and California WaterFix ITP application were developed in association with the permitting fish agencies. To the extent that proposed operations (and extensive restoration under the action alternatives) change Delta hydrodynamics, these have been captured in the modeling; tools to simulate turbidity over the appropriate time scales to inform models such as DPM are not available. It is acknowledged that the DPM does not inform the potential effects of extensive habitat restoration for fish entering such areas; this was analyzed with different tools such as habitat suitability analyses in the public draft BDCP.
2598	124	Through-Delta survival is a major impediment to conservation and recovery of all Central Valley salmonid populations. NMFS 2014 Recovery Plan; BDCP Appendix 3.G. Salmon survival in the Delta is influenced by factors including reduced freshwater flows into and through the Delta and the altered hydrodynamics and ecological conditions caused by south Delta exports. NMFS 2009 biological opinion; Williams 2010; Michel et al. 2014; Buchannan et al. 2013; Buchannan et al. 2015; Cunningham 2015; see Prior Comments. These drivers of Chinook salmon migration success are controlled or influenced by project operations and will be substantially modified by operations under the proposed new alternatives. Flows	The EIR/EIS and associated BA include substantial evaluation of through-Delta survival using DPM, Perry flow-survival relationships, and new consideration channel velocities, proportion of flow entering the channels, and other hydrodynamic variables. All methods indicate through-Delta survival to be the same or slightly lower than the No Action Alternative, which does not take into account real-time adjustments that can be made to further minimize effects on juvenile salmonids migrating past the intakes. The reduced use of the south Delta export facilities, a state-of-the-art fish screen at the NDD, and the Adaptive Management Program will work together to ensure that effects of the CVP and SWP operations on

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		<p>into the Delta from the Sacramento River basin (below the North Delta Diversion) will decrease substantially in every month of the Chinook salmon and steelhead migration seasons during every year under operational variant H3 and almost every year under H4 operations. RDEIR/SDEIS Appendix B and Table B.7-28. Similarly, in the San Joaquin Basin, flows into the Delta will decline in the vast majority of years, in every month or nearly every month, during the juvenile Chinook salmon migration period (January-June) as compared to Existing Conditions. Relative to the NAA, Delta outflows will be reduced under Alternative 4A in most year types; both operational variants result in lower outflows in Wet, Above Normal, and Critical years – outflow under the NAA in Below Normal years falls between H3 and H4 estimates. RDEIR/SDEIS at Table B.7-31. Thus, based on the well-documented correlation between flow rates and through-Delta survival, Chinook salmon juveniles emigrating from the Sacramento River basin will suffer reduced survival as a result of Alternative 4A operations in most years.</p>	<p>salmonids are minimized.</p> <p>For additional information regarding Adaptive Management, please refer to Master Response 33, Adaptive Management.</p>
2598	125	<p>Through-Delta survival will likely be worse than would be expected solely from the reduced flows into and out of the Delta projected for the new alternatives. Direct mechanisms causing elevated juvenile salmon mortality include:</p> <ul style="list-style-type: none"> • Entrainment at the south Delta export facilities; • Factors exacerbated by reduced turbidity and reduced flow rates, such as predation, see Gregory 1993; Gregory and Levings 1998; Grossman 2013; USBR 2015; [footnote#40: In materials submitted in support of its petition (with California DWR) to reduce Delta outflow standards during 2015, the US Bureau of Reclamation wrote that reduced Delta inflows could: "...reduce survival of juvenile salmonids migrating through the Lower Sacramento River and North Delta by increasing rates of predation mediated by hydrodynamic mechanisms (i.e. transit times, turbidity)."] • The spread of invasive macrophytes that improve predator efficacy (Boyer and Sutula 2015) and harmful algal blooms like Microcystis (Berg and Sutula 2015). <p>Aside from direct entrainment at the south Delta export facilities, the RDERI/SDEIS fails to consider the additional mortality from these sources related to the extraordinarily low levels of Delta inflow and outflow expected under the new project alternatives. For example, as described elsewhere in this letter and in our Prior Comments, diversion of suspended sediment and increased Delta residence times are expected to increase water clarity, the frequency of harmful algal blooms, and the areal extent of invasion by certain macrophytes.</p>	<p>The impact analysis evaluates these effects. Using winter-run Chinook salmon in Alt 1A as an example:</p> <ul style="list-style-type: none"> • Predation is discussed for construction (AQUA-37), maintenance (AQUA-38, entrainment (AQUA-39), and habitat restoration construction (AQUA-43) • SAV (macrophytes) is discussed in AQUA-11 (which incorporates the BDCP HCP document App. 5.F by reference) • Turbidity is discussed in AQUA-37, AQUA-38. <p>Further, the Delta Passage Model assesses the effects of flow on through-Delta survival. Without assigning an actual mechanism or mechanisms for flow-survival relationships, the evaluation of effects of the alternatives on the mechanisms listed by the commenter are inherent in this analysis. The model is based on field data collected under a range of flows in the Delta.</p> <p>Please refer to Master Response 14.</p>
2598	126	<p>The RDEIR/SDEIS remains overly optimistic about the ability of operations under the new alternatives to reduce salmonid entrainment at the South Delta export facilities. Indeed, like its predecessor, the new environmental document maintains both that proportional Chinook salmon entrainment is low currently and that California WaterFix alternatives will make a big difference in Chinook salmon entrainment. For example, with regard to winter-run Chinook salmon, the RDEIR/RDEIS states that:</p> <p>The proportion of juvenile winter-run Chinook salmon subject to entrainment is low under Existing Conditions and NAA_ELT (annual index of abundance average 1.4%) and Alternative 4A would further reduce entrainment of juvenile winter-run Chinook salmon at the south Delta facilities. For example, Scenario H3_ELT would reduce the proportion of juvenile</p>	<p>The analysis presented in the document focuses on the potential difference in entrainment as a result of the alternatives. Estimates of proportional entrainment are uncertain, so the focus is on the relative difference between scenarios.</p>

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		winter-run Chinook entrained in the south Delta export facilities (average of 0.6%). As such, average entrainment under Scenario H3_ELT would be reduced by 54% (~3,800 fish: Table 11-4A-10) across all water years compared to NAA_ELT. Entrainment would be substantially reduced in wet and above normal water year types (65–72% less than NAA_ELT) and would be moderately reduced in below normal, dry, and critical water year types (14–44% less than NAA_ELT). RDEIR/SDEIS at 4.3.7-47. Even lower rates of entrainment and similar benefits are claimed for reductions in entrainment of fall-run and late-fall run Chinook salmon. Id. at 4.3.7-126 to -127. Yet the document must be internally consistent: either a project alternative is expected to reduce a serious problem or it is projected to make a negligible reduction to an inconsequential problem. If the RDEIR/SDEIS persists in its claim that Chinook salmon entrainment is “low” (or, for fall-run, “very low”) currently, then it must abandon its claims that there are substantial environmental benefits from reducing Chinook salmon entrainment. Failure to do so misleads the public as to the impacts of the alternatives.	
2598	127	The RDEIR/SDEIS fails to consider or incorporate methods and findings from studies of this problem that we cited in our Prior Comments. See, e.g., Kimmerer and Nobriga 2008; Kimmerer 2008 (which found direct entrainment-related mortality of winter-run Chinook salmon was approximately 10% of the juvenile winter-run population, on average, at the highest export flows recorded). In addition, as noted above, the RDEIR/SDEIS fails to incorporate results from more recent studies such as Cunningham et al. 2015, which found that among the top environmental drivers affecting fall-run Chinook salmon were the export-to-inflow ratio for the Delta and the Delta gross channel depletion. This study also found that export levels, and sediment concentration at Fremont, were major environmental drivers for spring-run Chinook salmon populations on the Sacramento River, results that were not mentioned or integrated into the RDEIR/SDEIS.	Given constraints on exports following the issuance of the USFWS (2008) and NMFS (2009) SWP/CVP biological opinions, baseline conditions are likely to have lower rates of entrainment than in the past; the estimates of Kimmerer (2008) have wide variability (broad confidence intervals). Regarding Cunningham et al. (2015), to the extent that factors such as export to inflow ratio or south Delta exports affect Chinook salmon populations, the preferred alternative would be expected to provide positive effects as a result of changes in these variables. Other variables such as Delta gross channel depletion and suspended sediment concentration at Freeport (as opposed to Fremont, as incorrectly stated in the Executive Summary of Cunningham et al. 2015) would not be affected by the preferred alternative. The conclusions of the EIR/S and associated documents (e.g., , California WaterFix BA submitted in August 2016) would not be changed by inclusion of this new information.
2598	128	In contrast to its analysis of south Delta entrainment under the new project alternatives, the RDEIR/SDEIS continues to ignore potential entrainment/impingement-related mortality at the new NDD. These diversions will be fitted with fish screens, but there is no analysis of how well these screens can be expected to function and the RDEIR/SDEIS assumes they will function perfectly, forever. This is an unreasonable expectation because (a) screens of this type have never been deployed on a diversion of the size anticipated in the new alternatives, and (b) screens may fail and/or suffer reduced efficacy, at least temporarily. The RDEIR/DEIS analysis of anadromous fish survival past the NDD should be redone with some assumption of periodic failure or less than perfect performance of the unique fish screens.	Analyses of potential near-field effects of the NDD are included in the EIR/S; see, for example Impact AQUA-39 for winter-run Chinook salmon. Additional analysis is provided in California WaterFix BA submitted in August 2016. Screen design will be to agency standards, and research and monitoring will assess the effectiveness of the screens, with adjustments being adaptively managed as necessary.
2598	129	The RDEIR/SDEIS erroneously concludes that Alternative 4A will not likely cause a significant adverse impact from predation of Chinook salmon as a result of the NDD. Based on the median assumption of predation rates input into the RDEIR/SDEIS’s bioenergetics model, the environmental documents estimate that 0.6% of the fall-run Chinook salmon population would be lost due to predation at the NDD; this is more than double the loss of fall-run that the RDEIR/SDEIS attributes to entrainment at the south Delta export facilities in the NAA (at 4.3.7-126). The RDEIR/SDEIS declares that reduction in south Delta entrainment by 0.1% would be a “substantial reduction,” RDEIR/SDEIS at 4.3.7-127, and yet this reduction is only achieved by creating a new source of mortality for fall-run Chinook problem at the NDD that is substantially greater. Moreover, the RDEIR/SDEIS employs another method of estimating	The RDEIR/SEIS recognizes the potential for adverse effects from the NDD under Alternative 4A and as a result includes environmental commitments intended to offset the negative effects (e.g., Environmental Commitment 16 Nonphysical Fish Barriers), as well as real-time adjustments to operations to minimize potential negative effects. As described in the adaptive management and monitoring program in Section 4.1, as part of the final NDD screen design effort, several pre-construction studies would be implemented to better understand how to minimize losses associated with the three new intake structures. As noted in the RDEIR/SEIR, Alternative 4A also includes investigations to better understand factors affecting juvenile through-Delta migration (as described in the adaptive management and monitoring program in Section 4.1) and includes biologically-based triggers to inform real-time operations of the NDD, intended to provide

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		mortality loss at the NDD and suggests that predation loss may be up to 13% of both the fall-run and late-fall run populations. Id. at 4.3.7-175. Clearly, this represents a much greater potential loss at the NDD than the estimated reduction in mortality at the south Delta facilities expected from implementing Alternative 4A. The RDEIR/SDEIS states: "...at this time, due to the absence of comparable facilities anywhere in the lower Sacramento River/Delta, the degree of predation-related mortality expected from near-field effects at the NDD remains highly uncertain." RDEIR/SDEIS at 4.3.7-182. This is an understatement; as discussed supra, there are no facilities comparable to the planned NDD anywhere in the world.	adequate migration conditions for juvenile salmonids.
2598	130	The proposed mitigation measures in the RDEIR/SDEIS (targeted predator removal) and further study are unlikely to significantly benefit salmon, as noted in recent reviews regarding the effectiveness of predator removal programs. Grossman et al. 2013. If predation effects remain high (e.g., as high as estimated loss via entrainment mortality at the South Delta export facilities), then additional new mitigations for predation loss must be developed that are reasonably certain to be highly effective. Even with the proposed mitigation measures, this is a significant adverse environmental impact that is not disclosed in the RDEIR/SDEIS.	As Grossman et al. (2013) indicate, there is mixed evidence in the effectiveness of predator control in the limited locations where it has been attempted. There is even less information about its effectiveness in the Delta. For this reason, the predator removal measure is treated as experimental and assessments of the impact of the proposed action are predicated upon the conservative assumption that the predator removal measure has little effect. For more information regarding Environmental Commitments please see Appendix 3B in the Final EIR/EIS.
2598	131	The RDEIR/SDEIS fails to account for the importance of the spatial distribution and life history diversity attributes of viability that are critical to the persistence and recovery of all of the Central Valley's fish species, including salmonids. McElhaney et al. 2000; Lindley et al. 2007. For example, the RDEIR/SDEIS fails to analyze impacts on the survival and recovery of spring-run Chinook salmon migrating to and from the San Joaquin River and its tributaries, despite the facts that: (a) spring-running Chinook salmon are already found in the San Joaquin River's tributaries, including the Stanislaus River (Franks 2012; personal communication, R. Johnson, NOAA Southwest Research Center); (b) the NMFS Final Restoration Plan (2014) calls for restoration of multiple populations of spring-run Chinook salmon in the San Joaquin Basin; and (c) major restoration efforts for spring-run Chinook salmon are underway in the San Joaquin River basin (i.e., the San Joaquin River Restoration Program; SJRRP).	<p>NMFS has identified populations of spring-run Chinook salmon and their critical habitat in the Sacramento River basin only, although a few possible adult spring-run have been observed sporadically in the Stanislaus and Tuolumne rivers. It is unknown whether these are truly spring-run Chinook salmon or not and whether these could be persistent populations. This does not warrant a regulatory requirement to analyze effects of the alternatives in these rivers.</p> <p>Despite NMFS 2014 Final Restoration Plan calling for restoration of populations of spring-run Chinook salmon in the San Joaquin Basin, there is no regulatory requirement to analyze effects of the alternatives in these locations. These populations do not currently exist.</p> <p>Although the San Joaquin River Restoration Program is in the process of reintroducing spring-run Chinook salmon into the San Joaquin River, this population is experimental and, therefore, does not need to be analyzed under NEPA and CEQA. Further, the CEQA baseline for the project (Existing Conditions) was defined as at the time the NOI was signed, not once the San Joaquin River Restoration Program is finished.</p> <p>Regardless of all of this, the only CVP/SWP reservoir that could be affected by the alternatives is New Melones on the Stanislaus River. CVP and SWP do not control dams in any other tributaries. The potential effects of operational changes of New Melones are described in Chapter 11, Fish and Aquatic Species. No substantial differences in New Melones Reservoir storage or Stanislaus River flows are observed between the future no action alternative (NAA_ELT) and the preferred alternative, Alternative 4A.</p>
2598	132	Despite the RDEIR/SDEIS' failure to analyze these impacts; it is clear that Alternative 4A operations (and those of other new and old alternatives) will adversely impact ongoing natural and human-assisted re- colonization of the San Joaquin Basin by spring-run Chinook salmon and existing or desired future populations of spring-run Chinook salmon in the San Joaquin River Basin, and the Stanislaus River in particular. For example, flows on the Stanislaus River are projected to decline under Alternative 4A (both operational variants) during the adult and juvenile spring-run migration period (January –May and March-June; respectively); the RDEIR/SDEIS erroneously references Appendix 11C to conclude that flows would be lower than those under Existing Conditions during January through May in most water year types (up to 29% lower in February of Critical years). See RDEIR/SDEIS at 4.3.7-164,-167. Appendix B.7- 24 confirms that flows at the Stanislaus River confluence with	This comment is referring to the comparison of Alternative 4A to the CEQA baseline, Existing Conditions. The effects of an alternative under the CEQA analysis are confounded with the effects of climate change and sea level rise when comparing the alternative to Existing Conditions. When isolating effects of an alternative from climate change (by comparing an alternative to the No Action Alternative), the analysis indicates that there would be negligible differences in Stanislaus River flows between NAA and Alt 4A. This is the effect of the alternative independent of climate change.

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		<p>the San Joaquin River will be reduced (substantially so, in most cases) in every month of almost every year under Alternative 4A as compared to Existing Conditions. These large flow reductions would be expected to have negative effects on migrating spring-run Chinook salmon. For example, analysis of publicly available data regarding dissolved oxygen and temperature in the Stanislaus River near its confluence with the San Joaquin River (CDEC: "RPN" gauge) indicates that current conditions would impair both adult and juvenile spring-run migrations in the Stanislaus River. For example, temperatures are detrimental (>20.5oC as a 7-day average of daily maximum) or even lethal to migrating adult salmon by the beginning of June in most years, and dissolved oxygen levels have been sub-optimal (4 or more days below 8 mg/l) in at least 1 week (and up to 5 weeks) of the spring-run adult migration period for 13 of the years from 2000-2015. Declining flows on the Stanislaus River will tend to exacerbate migration problems for migrating spring-run Chinook salmon; indeed, the temperature modeling for the Stanislaus River, indicates that temperatures are expected to increase under Alternative 4A relative to Existing Conditions. RDEIR/SDEIS Appendix B at Table B.7-77. Also, reduced flows from the Stanislaus River are expected to contribute to reduced flows on the San Joaquin River mainstem; reduced flows at Vernalis would be expected to contribute to poor migration conditions for all Chinook salmon and steelhead spawning in and emigrating from the San Joaquin River Basin. See, e.g., Buchannan et al. 2015.</p> <p>Fall-run Chinook salmon productivity in the San Joaquin River Basin would also be negatively affected by operations under Alternative 4A. Current flow conditions in the San Joaquin River and its tributaries lead to the persistently low productivity and abundance of fall-run Chinook salmon that have resulted in failure to attain goals and objectives of the Central Valley Project Improvement Act and Bay-Delta Water Quality Control Plan. Increased water temperatures and reduced flows will cause significant adverse impacts that are not identified in the RDEIR/SDEIS, and feasible mitigation measures such as temperature control devices, reservoir reoperation, and passage around existing dams must be analyzed and considered.</p>	
2598	133	<p>The RDEIR/SDEIS reports that through-Delta survival of fall-run Chinook salmon migrating through the Delta from the San Joaquin River will decline under Alternative 4A, relative to the NAA (by 4%, in absolute terms, or 19-20% in relative terms). [footnote#41: In rationalizing this surprising outcome, the RDEIR/SDEIS states, "There is considerable uncertainty in effects on San Joaquin River Chinook salmon survival at such low levels of exports because the studies upon which the DPM flow- and export-survival relationships are based did not include these low levels of exports." RDEIR/SDEIS at 4.3.7-</p> <p>180. This is exactly the point we have made repeatedly regarding project proponents' reliance on the Delta Passage Model to estimate survival below the planned (and completely novel) North Delta Diversion.] This is a significant adverse impact that requires mitigation. This outcome would presumably apply to fall-run Chinook salmon from all the San Joaquin's tributaries and to spring-run Chinook salmon populations that re-colonize this watershed, including populations of both runs that are being restored as part of the SJRRP. In addition, as we noted in our Prior Comments, current estimated through-Delta survival rates are currently so low that they result in elimination of self-sustaining Chinook salmon population within a few generations. See also Buchanan et al. 2013, 2015; Sturrock et al. 2015. Given the precarious state of all San Joaquin River salmonids, the failure to attain Central Valley Project Improvement Act and Water Quality Control Plan objectives for San Joaquin salmonids, and the large investment of multiple parties in restoring spring-run and</p>	<p>As the commenter notes, the RDEIR/SEIS describes the uncertainty in the DPM results for the San Joaquin River fall-run Chinook salmon; the uncertainty is considerable because the proposed dual conveyance would allow essentially zero south Delta exports in wet years, when the north Delta exports could be relied upon almost entirely. The potential effects that this would have on juvenile salmonids emigrating from the San Joaquin River basin is unknown, given that such conditions have never been observed during through-Delta survival studies of San Joaquin River basin juvenile salmonids. As described in Appendix 5.C of the public draft BDCP, the positive relationship between south Delta exports and survival observed in the existing studies complicates the estimation of effects that could occur with no south Delta exports. This limitation of the DPM has been recognized and the Biological Assessment of the preferred alternative (Alternative 4A, California WaterFix) includes analysis using the through-Delta survival relationship from the SalSim model's Delta juvenile survival model, which shows the anticipated beneficial effect of the proposed Head of Old River gate on through-Delta survival of spring-run (and fall-run Chinook salmon, for Essential Fish Habitat). The BA is incorporated into the Final EIR/EIS by reference. While there remains uncertainty related to survival estimates for the DPM in the north Delta (in the BA this uncertainty is represented by the presentation of confidence intervals around the estimates), the north Delta situation differs from that of the south Delta, because although exports at the North Delta Diversion would decrease river flow, the river flow generally would remain within levels for which there are informative quantitative data with which to assess survival effects. In addition to the DPM, and at the request of the permitting fish agencies, other tools such as the analysis based on Newman (2003) and Perry (2010) have also been included. The comment provides no suggestion for additional tools that could be used to assess through-Delta survival, reflecting the general</p>

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		<p>fall-run Chinook salmon under the SJRRP, increased mortality rates of San Joaquin River Chinook salmon in the Delta must be regarded as significant and adverse, and the RDEIR/SDEIS must identify, consider and analyze mitigation measures to reduce or avoid these impacts. In addition to the need to improve productivity (i.e. survival and reproductive success rates), abundance, and spatial diversity of Central Valley salmonids, there is an emerging consensus among researchers that life-history diversity of Central Valley salmonids is heavily constrained and limits the ability of the population to respond to shifting environmental conditions (human-caused and otherwise). For example, Lindley et al. (2007) state: "We are unlikely to be able to identify all possible sources of risk ... so we should also think of managing risk by maximizing diversity within [salmonid] Evolutionarily Significant Units." Numerous recent studies demonstrate the effect of managed flow regimes on salmonid life-history distributions that contribute to overall population success, see, e.g., Beechie et al. 2006, especially among Central Valley populations. Miller et al. 2010. As described elsewhere and in our Prior Comments, the RDEIR/SDEIS fails to analyze the effects of its operational alternatives on life-history diversity among Central Valley salmon populations. For example, disproportionate negative impacts to one end of the temporal distribution of a life state (e.g., early spawners, late migrants, oversummering "yearling" migrants) would clearly have a negative effect on the portfolio of life-histories in that population and are likely to affect population success in the short or long-term. See Satterthwaite et al 2014; Zeug et al.</p> <p>2014; Buchanan et al. 2015. The RDEIR/SDEIS must be revised to analyze impacts to life history diversity of salmonids and how that will affect these species' viability.</p>	<p>lack of such tools for other juvenile life history types. It is acknowledged that the DPM and analyses based on Newman (2003) and Perry (2010) are most relevant to migrating juveniles, and so potential habitat effects have been assess for rearing, by examining potential changes in inundation of riparian and wetland bench habitat. The preferred alternative recognizes the need for mitigation of north Delta intake effects and, as noted in the RDEIR/SEIS, proposes habitat restoration for NDD construction footprint effects, a nonphysical barrier at Georgiana Slough to offset potential effects of the NDD, and channel margin restoration to offset potential decreased availability of riparian bench habitat. In addition, and as also described in the RDEIR/SEIS, real-time operational adjustments would be used to provide appropriate bypass flows, coincident with observed or anticipated increased Sacramento River basin juvenile salmonid presence in the Delta.</p>
2598	134	<p>ii. The RDEIR/SDEIS Incorrectly Identifies Significant And Unavoidable Impacts to Winter Run Chinook Salmon and Green Sturgeon Spawning and Rearing (AQUA-NAA4) Because it Ignores Feasible Changes to Reservoir Operations, Water Deliveries, and Other Mitigation Measures that Would Reduce or Avoid these Impacts</p> <p>The executive summary to the RDEIR/SDEIS correctly identifies significant impacts to spawning and rearing habitat for winter-run Chinook salmon and Green sturgeon under the No Action Alternative (AQUA-NAA4), but it erroneously claims that these impacts are unavoidable. RDEIR/SDEIS at ES-48. In contrast, the text of Chapter 4 claims there is no significant impact under AQUA-NAA4, and Appendix A (revised Chapter 11) provides no analysis or conclusions. RDEIR/SDEIS at 4.2-53; id. Appendix A at 11- 106 to -107. The RDEIR/SDEIS must be revised to be internally consistent, and to disclose the significant adverse impacts under existing conditions and the No Action Alternative under AQUA-NAA4. Moreover, the RDEIR/SDEIS ignores changes in reservoir operations and other feasible mitigation measures that can reduce or avoid these impacts, and it must be revised to identify and analyze such mitigation measures.</p> <p>The revisions to Chapter 11 provide almost no analysis of temperature impacts on these species under the No Action Alternative. See RDEIR/SDEIS Appendix A at 11-106 to -107. Moreover, Chapter 4 states that the CEQA conclusion is a less than significant impact, but provides little analysis and does not provide a conclusion under NEPA.</p> <p>During the current drought, as discussed above Reclamation's operation of Shasta Dam in 2014 resulted in greater than 95% mortality of endangered winter-run Chinook salmon eggs and juveniles as a result of lethal water temperatures and the failure to meet existing temperature standards. In 2015 Reclamation</p>	<p>All of the alternatives evaluated in the EIR/EIS would only divert water under existing water rights which were issued to DWR and Reclamation by the State Water Board with consideration for senior water rights and Area of Origin laws and requirements. These senior water rights include water rights settlement agreements with water rights holders that diverted water from the Sacramento River prior to the construction of the CVP. In accordance with conditions of the water rights issued by the State Water Resources Control Board to Reclamation for CVP operations, Reclamation must deliver water to the Sacramento River Settlement Contractors prior to operations of the CVP. The deliveries to the Sacramento River Settlement Contractors cannot be reduced further than what is allowed in the existing water rights. Changes to those water rights is not part of this project's objectives or purpose and need. Temperature impacts can be inferred from flow results for this impact.</p> <p>The explanation of the CEQA conclusion is described sufficiently. It includes several analyses and explains why the conclusion was determined. The NEPA analysis was removed because the NEPA baseline is the NAA.</p> <p>The NAA impacts to spawning, rearing, and migration of fish are significant (Impacts AQUA-NAA4, AQUA-NAA5, AQUA-NAA6).</p>

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		<p>targeted higher water temperatures in the Sacramento River, despite the significant impacts that would result on spawning and rearing; as of mid-October, passage of winter-run Chinook salmon juveniles has been lower than 2014, see U.S. Fish and Wildlife Service, Red Bluff Diversion Dam juvenile salmon passage data, biweekly report for October 8, 2015 to October 21, 2015, available online at: http://www.fws.gov/redbluff/RBDD%20JSM%20Biweekly/2015/BiWeekly20151008-20151021.pdf, despite similar spawning dates and increased escapement in 2015, raising significant concerns that Reclamation will again cause unsustainably high mortality that jeopardizes the species. Under current conditions, during extended droughts Reclamation cannot maintain adequate temperature control because of unsustainable water deliveries and upstream diversions, jeopardizing the species. Indeed, even in non-drought years, egg to fry survival of winter-run Chinook salmon is extremely low, significantly impacting winter-run Chinook salmon and causing even more severe impacts to fall-run Chinook salmon. See USFWS 2014. Climate change will likely increase water temperatures, water demands, and the frequency of extended droughts, increasing impacts under the No Action Alternative as compared to existing conditions. As a result, the RDEIR/SDEIS must disclose that the No Action Alternative will cause significant impacts under AQUA-NAA4.</p> <p>However, these impacts are not unavoidable. Changes to reservoir operations and reductions in reservoir releases and water diversions (including reductions in water deliveries to Sacramento River Settlement Contractors during Critically Dry years), can reduce or avoid these significant impacts to water temperatures and spawning and rearing habitat for winter-run Chinook salmon and Green Sturgeon. The RDEIR/SDEIS must be revised to identify and analyze the effects of such mitigation measures.</p>	
2598	135	<p>iii. The RDEIR/SDEIS Fails to Disclose that Alternative 4A is Likely to Cause Significant Impacts to Winter Run Chinook Salmon and Green Sturgeon Spawning and Rearing, and Must Consider Changes to Reservoir Operations and Water Deliveries and other Feasible Mitigation Measures</p> <p>In addition, the RDEIR/SDEIS fails to disclose that Alternative 4A is likely to cause significant adverse impacts to winter-run Chinook salmon. Although the document claims that these impacts are less than significant, it also admits that these effects are similar to those under the NAA, which are significant and adverse. See RDEIR/SDEIS Appendix A at 11-217 (“In general, the effects of Alternative 4 on spawning and egg incubation habitat for winter-run Chinook salmon relative to the NAA are not adverse.”).</p> <p>Although the RDEIR/SDEIS focuses its analysis on the comparison with the NAA, it largely ignores the significant adverse impacts that result under the NAA. Because the NAA results in significant adverse impacts, Alternative 4A also results in similar adverse impacts, and the RDEIR/SDEIS must be revised to disclose this significant impact and identify and consider feasible mitigation measures that improve temperature control (including reductions in water diversions and deliveries).</p>	<p>It is incorrect to evaluate an alternative in isolation without considering the baseline in a CEQA/NEPA analysis, as the commenter is attempting to do. An alternative does not cause climate change and sea level rise; therefore, it cannot be responsible for it. Instead, the more reasonable and correct analysis is to compare the effects of the alternative to a baseline that includes effects that future climate change may cause, as the RDEIR/SDEIS has done. Doing this, as was done in Chapter 11 of the RDEIR/SDEIS and is done in the Final EIR/EIS, indicates that there would be no adverse/less than significant effects of Alternative 4A on winter-run Chinook salmon or green sturgeon. The commenter’s assertion that the RDEIR/SDEIS fails to disclose significant impacts of Alternative 4A to these species is unfounded and incorrect.</p>
2598	136	<p>The RDEIR/SDEIS Fails to Disclose that Alternative 4A is Likely to Cause Significant Adverse Impacts to Fall Run Chinook Salmon and Must Consider Changes to Reservoir Operations, Water Deliveries and other Feasible Mitigation Measures</p> <p>The RDEIR/SDEIS identifies adverse impacts to fall-run Chinook salmon arising from</p>	<p>As noted in the new Appendix 11E in the Final EIR/S, Sensitivity Analysis to Confirm RDEIR/SDEIS Determinations for Fish and Aquatic Species Using Updated Model Outputs for Alternative 2D, 4A, and 5A, there would be no need for Mitigation Measure AQUA-78d if 2010 and 2015/BA modeling had been used in this analysis because the Impact AQUA 78 determination would be not adverse and less than significant. These two modeling versions have been updated to better reflect the system operations under Alternative</p>

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		<p>operations under Alternative 4A, but fails to describe how its suggested mitigation measure will eliminate the adverse effect and how it will affect other flow-related environmental conditions (e.g., in the mainstem Sacramento River or the Delta). Alternative 4A is likely to result in significant adverse impacts to fall run Chinook salmon, and the RDEIR/SDEIS must be revised to identify these impacts and potential mitigation measures.</p> <p>For example, the RDEIR/SDEIS states that, “the effect of Alternative 4A could be adverse because flows in the Feather and American Rivers (depending on scenario – H3_ELT or H4_ELT) would be reduced substantially and persistently and could cause biologically meaningful effects to fall-run Chinook salmon adult migration.” RDEIR/SDEIS at 4.3.7-181. However, it claims that implementation of Mitigation Measure AQUA-78d, would make the actual effect “not adverse.” The proposed mitigation measure (“Slightly adjust the timing and magnitude of Shasta, Folsom, and/or Oroville Reservoir releases, within all existing regulations and requirements, to ameliorate changes in instream flows that would cause an adverse effect to fall-run Chinook salmon”) states that: “Whenever possible during real-time operations, project proponents will slightly adjust Shasta, Folsom and/or Oroville Reservoir operations to ensure that instream flows are sufficient to minimize or avoid migration-related effects to fall-run Chinook salmon.” RDEIR/SDEIS at 4.3.7-193. However, the RDEIR/SDEIS fails to describe what it means by “whenever possible” and how significant the “slight” changes in flow will need to be in order to reduce the impact of low flows to a non-significant state. The flow effects that lead to the “adverse” determination include reductions on Feather River flow during August and September of 32% and 22% relative to the NAA; the RDEIR/SDEIS describes the reductions as “substantial.” RDEIR/SDEIS at 4.3.7-173. It is not clear how modifying reservoir releases on the Feather or American River would alter flow schedules and impacts downstream of the Feather River and how well such deviations from the RDEIR/SDEIS modeled flows would protect fall-Run Chinook salmon on Sacramento River tributaries. The RDEIR/SDEIS must be revised to reveal how frequently revisions to the modeled flow schedule (as envisioned in Mitigation Measure AQUA-78d) would occur, what effects those revisions would have elsewhere, and what benefit they would provide to the fall-run Chinook salmon populations in question. There is no basis in the RDEIR/SDEIS to conclude this mitigation measure will reduce impacts to a less than significant level.</p>	<p>4A from the RDEIR/SDEIS modeling, which included some assumptions that were no longer valid.</p>
2598	137	<p>In general, flow reductions and temperature increases expected under Alternative 4A would cause widespread, catastrophic impacts to the Central Valley’s fall-run Chinook salmon populations similar to those identified above with regard to previously proposed project alternatives. Indeed, the RDEIR/SDEIS finds significant effects with regard to its CEQA baseline. It states:</p> <p>Under Alternative 4A, there would be moderate to substantial flow reductions and substantial increases in temperatures and temperature exceedances above thresholds in the Sacramento, Feather, and American Rivers, which would interfere with fall-/late fall--run Chinook salmon spawning and egg incubation. Biological models, including the Reclamation egg mortality model and SacEFT, predict substantially degraded spawning and egg incubation habitat conditions in the Sacramento, Feather, and American Rivers. These modeling results are generally consistent for H3_ELT and H4_ELT.</p> <p>RDEIR/SDEIS at 4.3.7-155; see id. at 4.3.7-147. As elsewhere, the RDEIR/SDEIS attempts to avoid an “adverse” NEPA determination and to hide this extreme impact to fall-run Chinook salmon throughout the Central Valley by attributing the impact to climate change.</p>	<p>Please see the response to comment 135 regarding consideration of climate change effects in the analysis.</p>

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		RDEIR/SDEIS at 4.3.7-167. But just as with other species, the RDEIR/SDEIS cannot make significant impacts to fall-/late fall-run Chinook salmon populations disappear by ignoring the effects of climate change. Instead, the RDEIR/SDEIS must identify and analyze real mitigations to reduce or eliminate these substantial negative effects.	
2598	138	<p>The RDEIR/SDEIS Fails to Adequately Analyze Impacts to Central Valley Wildlife Refuges</p> <p>The RDEIR/SDEIS fails to adequately analyze the impacts that the new alternatives will have on national, state, and private wildlife refuges that receive water pursuant to the Central Valley Project Improvement Act (“CVPIA”). These refuges are clearly part of the Project Area, as they are within CVP and SWP export service areas, see RDEIR/SDEIS at App. A_03, 3-4 (defining project area), and the proposed alternatives could directly and indirectly impact the refuges’ water supply. Yet the RDEIR/SDEIS fails to accurately portray the refuges’ water supply in its baseline conditions, and fails to analyze how the new alternatives will impact the refuges’ water supply and the terrestrial species that depend upon the refuges.</p> <p>Any attempt to understand the new alternatives’ impacts on wildlife refuges is undermined by the inaccurate assumptions regarding refuge water supply included in the No Action Alternative. As discussed in our Prior Comments, the baseline operational assumptions do not seem to include Level 4 water deliveries to the wildlife refuges, despite the requirements of the CVPIA. See P.L. 102-575, § 3406(d). It is unreasonable to anticipate that Reclamation will continue to operate the CVP in violation of the CVPIA by failing to deliver Level 4 water to the refuges, and omitting Level 4 deliveries from the No Action Alternative undermines the RDEIR/SDEIS’s analysis of water supply impacts to the wildlife refuges and other water users.</p>	Level 4 water supplies have historically been provided by Reclamation through water transfers. As described in Chapter 3, Description of Alternatives, the alternatives considered in the EIR/EIS do not include specific water transfers. The EIR/EIS acknowledges that water transfers would continue in a similar manner as historical transfers and in accordance with State and Federal laws and regulations. The EIR/EIS also acknowledges that the use of water transfers would continue, including transfers for Level 4 refuge water supplies, as described in Appendix 1E, Water Transfers in California: Types, Recent History, and General Regulatory Setting, and Appendix 5D, Water Transfer Analysis Methodology and Results, of the EIR/EIS.
2598	139	The RDEIR/SDEIS makes unsupported assumptions regarding shifts in refuge water demand. In particular, the RDEIR/SDEIS states that CVP and SWP operations under the No Action Alternative would differ from existing conditions because “there is a shift in refuge demands from south to north (24 TAF per year reduction in south of Delta and 32 TAF per year increase in north of Delta).” RDEIR/SDEIS at 4.2-3. The basis for this assumption is unclear, and it is inconsistent with our understanding of the future water-supply needs of south of Delta refuges.	As described in Appendix 5A, Sections A and B, the Existing Conditions values for Level 2 water supplies represents average water deliveries prior to 2009 when the Notice of Preparation and Notice of Intent were published. The No Action Alternative values represent Level 2 water supply contract amounts based upon the most recent contracts between the individual refuges and Reclamation.
2598	140	The RDEIR/SDEIS’s analysis of water supply impacts under the No Action Alternative appears to include operational assumptions that are inconsistent with existing water rights priorities. The RDEIR/SDEIS states that, “[u]nder No Action Alternative (ELT), model results show a 18 TAF (1%) decrease in CVP Settlement Contract deliveries and a 8 TAF (2%) decrease in CVP Level 2 Refuge Water Supplies during dry and critical years compared to the Existing Conditions. . . . Results show no changes in deliveries to CVP Exchange Contractors.” RDEIR/SDEIS at 4.2-10. Because the wildlife refuges are entitled to at least the same water supply priority as the Settlement Contractors and Exchange Contractors, it does not make sense that Level 2 refuge water supply would decrease by 2% while the Settlement Contractors’ supply would decrease by only 1% and the Exchange Contractors’ supply would not decrease at all. Please explain the operational assumptions underlying this seemingly impermissible outcome. [footnote#42: The same problem, in which the refuges seem to receive a lower water supply priority than the Settlement and Exchange Contractors, appears in the water supply analysis for the new alternatives. See RDEIR/SDEIS at B-43.]	The results for refuge water supply referred to in this comment related to Table B.1.-1 in the RDEIR/SDEIS include results for refuges located both north of Delta and south of Delta. For north of Delta CVP water users, including Level 2 refuge water supplies, the CALSIM II model makes decisions under some hydrologic and precipitation conditions to provide a portion of water supplies from groundwater instead of CVP water supplies. These decisions do not affect south of Delta refuge water supplies. Overall, the annual allocation of Level 2 refuge water supplies is consistent in the Existing Conditions and No Action Alternative. However, as described in the RDEIR/SDEIS, during critical dry years, it is anticipated that there will not be adequate water supplies to fully provide 75 percent of the Level 2 refuge water supplies.

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2598	141	<p>The RDEIR/SDEIS fails to provide sufficient details regarding how the new alternatives will impact refuge water supplies. The Water Supply Summary Tables in Appendix B of the RDEIR/SDEIS indicate that Level 2 water deliveries could be negatively affected by implementation of Alternative 4A. For example, Table B.1-3 shows that, under Alternative 4 H3 (ELT), Level 2 refuge water supplies would decline compared to the No Action Alternative in Dry and Critical years. RDEIR/SDEIS at B-43. However, there is no discussion or analysis of this water supply impact. In contrast, the RDEIR/SDEIS includes a detailed discussion of the new alternatives' water supply impacts to CVP south of Delta agricultural deliveries, CVP Settlement and Exchange Contract deliveries, CVP north of Delta municipal and industrial deliveries, CVP south of Delta municipal and industrial deliveries, and several different SWP deliveries.</p> <p>See, e.g., RDEIR/SDEIS at 4.3.1-5 to 4.3.1-9.</p> <p>The omission of any detailed discussion of the alternatives' impacts on refuge water supplies must be remedied in a revised and recirculated draft NEPA/CEQA document. The quantity of water that is delivered to each wildlife refuge and the timing of those deliveries can have substantial impacts to the health of species that rely on the refuges, including the threatened giant garter snake, other listed species, and millions of birds that migrate along the Pacific Flyway each year. Because the new alternatives may affect refuge water supplies, both directly and indirectly, the EIS/EIR must provide details regarding which refuges' water supplies will be impacted, when, and how, and must analyze the ways in which terrestrial species may be impacted by the water supply changes. Without this information, it is impossible to understand how the proposed project will impact sensitive wildlife populations. Further, the revised and recirculated draft EIR/EIS must explain how water supply impacts to specific refuges will be fully mitigated.</p>	<p>As discussed in response to comment 140, for north of Delta CVP water users, including Level 2 refuge water supplies, the CALSIM II model makes decisions under some hydrologic and precipitation conditions to provide a portion of water supplies from groundwater instead of CVP water supplies. These decisions do not affect south of Delta refuge water supplies. In Appendix 5A, Section C, of the Final EIR/EIS, values for north of Delta and south of Delta water supplies are provided separately.</p>
2598	142	<p>The RDEIR/SDEIS Fails to Adequately Analyze the New Alternatives' Impacts on Water Transfers and the Water Transfers' Impacts on Terrestrial Species</p> <p>The RDEIR/SDEIS acknowledges that, compared to existing conditions, demand for cross-Delta water transfers will increase under the No Action Alternative. Specifically, the document concludes that “[d]emand for cross-Delta water transfers will increase, with the frequency of such transfers increasing from about 52 percent of years to 68 percent of years compared to existing conditions.” RDEIR/SDEIS at 4.2-9. The RDEIR/SDEIS also describes how the new project alternatives will make it easier to conduct cross-Delta transfers in the future. For example, the RDEIR/SDEIS explains that:</p> <p>Alternative 4A provides a separate cross-Delta facility with additional capacity to move transfer water from areas upstream of the Delta to export service areas and provides a longer transfer window than allowed under current regulatory constraints. In addition, the facility provides conveyance that would not be restricted by Delta reverse flow concerns or south Delta water level concerns. As a result of avoiding those restrictions, transfer water could be moved at any time of the year that capacity exists in the combined cross-Delta channels, the new cross-Delta facility, and the export pumps, depending on operational and regulatory constraints, including criteria guiding the operation of water conveyance facilities under Alternative 4A.</p> <p>RDEIR/SDEIS at 4.3.1-9. Yet the RDEIR/SDEIS inexplicably concludes that Alternative 4A will decrease cross-Delta water transfer demand compared to the No Action Alternative because Alternative 4A will increase project water supply allocations as compared to the No</p>	<p>Please note that the Chapter 5 water transfer analysis in the FEIR/EIS has been updated to be consistent with new modeling conducted for the non-HCP alternatives 2D, 4A, and 5A (see Appendix 5D). The purpose of the water transfer analysis is to provide an assessment of the relationship of cross-Delta water transfers to the BDCP/CWF alternatives. The results of the analysis are intended to provide comparative estimates of the relative magnitude of cross-Delta transfers between existing conditions, no action alternative, and the BDCP/CWF alternatives, rather than absolute forecasts of transfer activity. The analysis is based on the assumption that cross-Delta transfers are sensitive to the allocations of the SWP and CVP, and that the lower the allocations below some trigger threshold, the greater the demand for such transfers (see Appendix 5D for more details on all the assumptions)</p> <p>For information on potential environmental effects (e.g. ground water pumping, water quality, terrestrial and aquatic resources) relating to water transfers, please see Section 30.3.6. However, as discussed in Chapter 5 and Appendix 1E, Water Transfers in California: Types, Recent, History, and General Regulatory Setting, transfers and other upstream water transactions are subject to a number of regulatory requirements (independent of the BDCP/CWF) that make it unlikely that significant adverse impacts will occur. Because specific agreements have not been identified for water transfers and other non-project voluntary water market transactions, this EIR/EIS does not constitute the CEQA/NEPA coverage required for any specific transaction. Prior to approval, each transfer must go through NEPA review and be evaluated by the export facility agency, and may also be subject to CEQA review and/or State Water Board process.</p>

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		<p>Action Alternative. RDEIR/SDEIS at 4.3.1-9. [footnote#43: We also note that the RDEIR/SDEIS’s conclusions regarding Alternative 4A’s impacts on water transfers seem to suffer from serious errors. For example, for “NEPA Effects,” the document states that, “Alternative 4A would decrease water transfer demand compared to existing conditions. Alternative 4A would decrease conveyance capacity, enabling additional cross-Delta water transfers that could lead to increases in Delta exports when compared to No Action Alternative.” RDEIR/SDEIS at 4.3.1-9 (emphasis added). In contrast, for its “CEQA Conclusion,” the document states that “Alternative 4A would increase water transfer demand compared to existing conditions. Alternative 4A would increase conveyance capacity, enabling additional cross-Delta water transfers that could lead to increases in Delta exports when compared to existing conditions.” Id. (emphasis added). These errors make it impossible to understand the RDEIR/SDEIS’s analysis and conclusions.]</p> <p>The RDEIR/SDEIS’s conclusion regarding the impact of Alternative 4A on cross-Delta water transfers lacks support. The determination that demand for cross-Delta transfers will decrease under Alternative 4A compared to the No Action Alternative appears to assume, without analysis, that any increases in south of Delta project water supply allocations from implementation of Alternative 4A will satisfy demand. If the increased allocations do not completely satisfy south of Delta demand, the fact that the new conveyance facility could extend the transfer window and remove existing barriers to cross-Delta water transfers would likely cause a substantial increase in demand for cross-Delta water transfers.</p> <p>With groundwater regulation on the horizon and hardened demand from the planting of permanent crops, it seems extremely unlikely that Alternative 4A’s increases in south of Delta project water supply allocations will completely satisfy demand and temper the growing interest in cross-Delta water transfers. [footnote#44: To the extent the RDEIR/SDEIS’s discussion of future demand for water transfers is based on the analysis in Appendix 5D to the BDCP DEIR/DEIS, we note that the prior analysis is based on unsupported assumptions. In particular, the analysis “assume[s] that the SWP and CVP contractors would attempt to replace approximately half of the supply deficits below the 50 percent and 40 percent allocation thresholds respectively with cross-Delta transfers, up to the assumed maximum available supply.” BDCP DEIR/DEIS at 5D-5. If temporal and other limitations to cross-Delta transfers are removed by the new facilities, it is likely that south of Delta contractors would seek additional water through cross-Delta transfers, even when their allocations are at or above the 50 and 40 percent thresholds. They may also seek to augment more than 50 percent of their supply deficits with water from cross-Delta transfers.]</p> <p>Because the RDEIR/SDEIS’s conclusion that Alternative 4A will decrease the demand for cross-Delta water transfers compared to the No Action Alternatives seems highly speculative, the revised and recirculated draft NEPA/CEQA document should consider the environmental impacts of increases in the frequency and quantity of water that is transferred across the Delta. In addition to impacts to groundwater supplies and aquatic species, the transfers can have profound impacts to terrestrial species. Crop idling transfers that involve the fallowing of rice and other crops can devastate fragile giant garter snake populations, and can substantially reduce the availability of winter-flooded rice that provides important food for waterfowl and shorebirds.</p> <p>The RDEIR/SDEIS’s failure to accurately characterize the new alternatives’ impacts on water transfers makes it impossible to understand how the new alternatives may affect sensitive</p>	

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		terrestrial ecosystems, and further analysis is necessary.	
2598	143	<p>The Environmental Commitments and Other Measures Are Insufficient to Mitigate Potentially Significant Impacts to Terrestrial Species</p> <p>Throughout the RDEIR/SDEIS’s analysis of the new alternatives’ impacts on biological resources, the document concludes that impacts to particular ecosystems from the new alternatives would be significant if not for the environmental commitments and other mitigation measures. For example, with respect to managed wetlands, the RDEIR/SDEIS states that “[t]he construction loss of this special-status natural community would represent a significant impact if it were not offset by other the environmental commitments described in Section 4.1.2.3, Environmental Commitments, of this RDEIR/SDEIS.” RDEIR/SDEIS at 4.3.8-47. The RDEIR/SDEIS reaches similar conclusions for impacts to the valley/foothill riparian natural community (RDEIR/SDEIS at 4.3.8-18), the nontidal perennial aquatic community (RDEIR/SDEIS at 4.3.8-24), the vernal pool complex natural community (RDEIR/SDEIS at 4.3.8-41), and several other sensitive natural communities.</p> <p>However, the RDEIR/SDEIS also acknowledges that the “environmental commitments have not been defined to the level of site-specific footprints,” and accordingly that it is not possible to specifically delineate and quantify how the commitments “could alter the acreages and functions and values of wetlands and waters of the United States in the study area.” RDEIR/SDEIS at 4.3.8-341. The RDEIR/SDEIS also explains that, “[n]ot all wetlands perform all functions nor do they perform all functions equally well,” and that “[t]he location and size of a wetland may determine what functions it will perform.” RDEIR/SDEIS at 4.3.8-335. Further, it states that “the geographic location may determine its habitat functions, and the location of a wetland within a watershed may determine its hydrologic/hydraulic or water quality functions.” RDEIR/SDEIS at 3.8-335 to 336. Clearly, the value of managed, restored, and protected wetlands and other habitats to particular species can vary dramatically based on things like location, water depth, height and percentage of vegetation, and many other factors.</p>	<p>The analysis of impacts on terrestrial biological resources in the EIR/EIS includes a project level analysis of the effects of water conveyance facility construction and a programmatic level analysis of the effects of restoration actions that are part of the Environmental Commitments. EIR/EIS Section 12.3.2.1 Analysis Approach explains the methods used to conduct this analysis. The Environmental Commitments are intended to offset the impacts on aquatic and terrestrial biological resources from water conveyance facility construction; however, the restoration activities under these Environmental Commitments may affect some biological resources, mostly those that occur in agricultural lands where these activities will most likely take place. The exact locations of these actions are unknown at this time; however, individual restoration projects will be subject to separate project level environmental review and any necessary permitting. Please refer to Chapter 31 in the Final EIR/EIS.</p>
2598	144	<p>Because of the uncertainty in the value of the replacement habitat that the environmental commitments provide, the RDEIR/SDEIS cannot reasonably conclude that the environmental commitments and other measures will fully mitigate the projects’ admittedly significant impacts. Presumably for this reason, the RDEIR/SDEIS indicates that, in addition to the environmental commitments and Avoidance and Minimization Measures, the Adaptive Management and Monitoring Program “would serve a mitigation function under CEQA.” RDEIR/SDEIS at 4.1-14. Similarly, the RDEIR/SDEIS states that:</p> <p>The success in implementing these Environmental Commitments would be assured through effectiveness monitoring, which includes success criteria, and adaptive management as outlined in the Adaptive Management and Monitoring sections of the Draft BDCP for tidal marsh restoration (Draft BDCP Section 3.4.4.4), channel margin enhancement (Draft BDCP Section 3.4.6.4), valley/foothill riparian restoration (Draft BDCP Section 3.4.7.4), vernal pool and alkali seasonal wetland complex restoration (Draft BDCP Section 3.4.9.4), and nontidal marsh restoration (Draft 13 BDCP Section 3.4.10.3).</p> <p>RDEIR/SDEIS at 4.3.8-338.</p> <p>However, from the description of Alternative 4A, it is not clear whether these adaptive management and monitoring sections of the Draft BDCP remain part of project</p>	<p>DWR submitted an application to the Department of Fish and Wildlife (CDFW) for the incidental take of state-listed species. As the commenter points out, the standard for DWR to receive a state 2081(b) incidental take permit is that the effects of the action must be “fully mitigated.” That is not the standard evaluated in the RDEIR/SDEIS. DWR will continue to work directly with the CDFW to develop in incidental take permit application that meets the “fully mitigate” standard under the California Endangered Species Act.</p> <p>The sections of the public draft BDCP that are referenced regarding adaptive management and monitoring for specific conservation measures are not included in the Proposed Action (Alternative 4A).</p> <p>The benefits of tidal marsh restoration, channel margin enhancement, and other natural community restoration are described in BDCP in their respective sections of Chapter 5. DWR and Reclamation are confident in the success of this restoration in the amounts included in the Proposed Action. The adaptive management and monitoring program will be designed to improve the efficiency and effectiveness of these mitigation measures. Please see Master Response 5 for more information regarding habitat restoration.</p> <p>Details of the adaptive management decision-making process, research studies, and implementation schedules will be developed with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife through the development of the Biological Opinion, and state incidental take permit. Further development and refinements to this adaptive management and monitoring</p>

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		<p>description for the new preferred alternative. See RDEIR/SDEIS at 4.1-18 to 21 (describing Collaborative Science and Adaptive Management Program component of Alternative 4A but not specifically mentioning any monitoring or adaptive management of restored or protected terrestrial habitats). And no other details regarding plans for monitoring and adaptive management of restored wetlands and other terrestrial habitats are apparent. Please clarify whether the above-referenced portions of the Draft BDCP that focus on monitoring and adaptive management for restored terrestrial habitats remain part of Alternative 4A and the other new alternatives, or whether there are other details regarding plans for monitoring and adaptive management.</p> <p>Because the benefits of the habitat restoration included in the environmental commitments remain unquantified and unclear, effective monitoring and adaptive management is crucial to ensuring that the new alternatives' impacts to terrestrial species will be fully mitigated. Details regarding how the monitoring and adaptive management programs will function must be included in the recirculated draft EIR/EIS. Without this information, the proposed environmental commitments and other mitigation measures remain insufficient to fully mitigate the admittedly significant impacts that the new alternatives will cause to terrestrial species and the sensitive habitats upon which they depend.</p>	<p>program are expected during the early years of project implementation. Such details are not required to be included in the regulatory permits, nor the EIR/EIS. For additional information please refer to the Master Response 33, Adaptive Management.</p>
2598	145	<p>The RDEIR/SDEIS Fails to Ensure Adequate Mitigation for Impacts to Waterfowl and Shorebirds</p> <p>Cultivated lands provide important food and habitat for large numbers of shorebirds and waterfowl that migrate along the Pacific Flyway. For example, “[s]hallow flooded agricultural fields and wetlands support large numbers of wintering and migrating shorebirds (Shuford et al. 1998), particularly least and western sandpipers, dunlin, greater yellowlegs and long-billed dowitcher.” RDEIR/SDEIS at 4.3.8-345.</p> <p>Rice field and other cultivated lands are also essential for waterfowl that migrate into the Central Valley each fall and winter.</p>	<p>The commenter states that the RDEIR/SDEIS fails to ensure adequate mitigation for impacts on waterfowl and shorebirds. As discussed under Impact BIO-178 under Alternative 4A, a total of 5,900 acres of suitable habitat would be permanent and temporarily impacted and a total of 15,010 acres would be restored and protected, which demonstrates that there is more than sufficient conservation to offset impacts on habitat for waterfowl and shorebirds.</p>
2598	146	<p>The RDEIR/SDEIS explains that the new alternatives will cause substantial impacts to cultivated lands. For example, under Alternative 4A, “[d]evelopment of the water conveyance facilities would result in the permanent removal of . . . 3,768 acres of suitable cultivated lands (including grain and hay crops, pasture, field 36 crops, rice, and idle lands),” and would temporarily impact 1,339 acres of suitable cultivated lands. RDEIR/SDEIS at 4.3.8-342. Additionally, “implementation of Environmental Commitments would result in the permanent loss or conversion of 2,212 acres of cultivated lands.” RDEIR/SDEIS at 4.3.8-343.</p>	<p>Please see response to comment 145 regarding effects to cultivated lands.</p>
2598	147	<p>Though this loss of cultivated lands will cause significant impacts to waterfowl and shorebirds, the RDEIR/SDEIS concludes that the impacts will not be significant because of the restoration and protection activities that will occur under the new alternatives. See, e.g., RDEIR/SDEIS at 4.3.8-343. However, cultivated lands and restored habitats may have little value to shorebirds and waterfowl if those lands are not managed to ensure the availability of food and habitat. Post-harvest practices are particularly important for determining whether cultivated lands will provide any value for shorebirds and waterfowl.</p> <p>The RDEIR/SDEIS recognizes the importance of management for waterfowl and shorebirds,</p>	<p>In regards to waterfowl and shorebirds, the commenter states their opinion that it is unclear how the protected and restored lands will actually be managed and that they believe significant and unmitigated impacts to waterfowl and shorebirds will likely remain.</p> <p>The cultivated lands affected include grain and hay crops, pasture, field crops, and idle lands. The cultivated lands to be protected and managed will include corn, rice, pasture, alfalfa, hay, sunflower, and wheat, which will be managed for special-status species (e.g., sandhill cranes, tricolored blackbird, Swainson’s hawk) but many of the management activities would also benefit shorebirds and waterfowl, such as the flooding of cultivated fields following harvest (see RRPP GSC3). Managed wetlands will be managed</p>

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		<p>and includes a long list of practices that should be implemented on managed wetlands and cultivated lands to benefit these species. RDEIR/SDEIS at 4.3.8-346 to 347. However, the document merely states that these management practices “would be considered for implementation under Environmental Commitment 11 in areas where they would not conflict with other species management.” RDEIR/SDEIS at 4.3.8-346.</p> <p>This statement is extremely vague, and it is unclear whether any of the identified practices would be implemented, by whom, and on what time frame. Because the management of the protected and restored lands is critical to their ability to effectively mitigate the project’s impacts to shorebirds and waterfowl, and it is unclear how the protected and restored lands will actually be managed, significant and unmitigated impacts to these species will likely remain.</p>	<p>for the benefit of greater sandhill crane, but that those management activities would also benefit both shorebirds and waterfowls that use shallow flooded habitat, which will include upland buffers (see RRRP GSC2).</p> <p>Furthermore, the effects to non-special status shorebirds and waterfowl do not meet the criteria for being considered significant as outlined in Section 12.3.1.2 Significance Criteria for Terrestrial Biological Resources. These effects do not substantially reduce the habitat for waterfowl and shorebirds to a point that it would cause them to drop below self-sustaining levels. As discussed under Impact BIO-178 under Alternative 4A, a total of 5,900 acres of suitable habitat would be permanent and temporarily impacted and a total of 15,010 acres would be restored and protected, which demonstrates that there is more than sufficient conservation to offset impacts on habitat for waterfowl and shorebirds.</p>
2598	148	<p>The RDEIR/SDEIS Improperly Fails to Consider Cumulative Impacts to Terrestrial Species and Natural Communities around the Clifton Court Forebay from the San Luis Transmission Project</p> <p>The RDEIR/SDEIS’s analysis of cumulative impacts is substantially flawed because it fails to consider the fact that the new alternatives and the San Luis Transmission Project will both impact sensitive natural communities and species in the vicinity of the Clifton Court Forebay. The San Luis Transmission Project includes 95 miles of new transmission lines within easements ranging from 125 to 250 feet wide along the foothills of the Diablo Range in the western San Joaquin Valley. The project also includes two new 500-kV substations, communication facilities, new permanent access roads, and temporary access roads to facilitate construction activities. A Draft Environmental Impact Statement and Environmental Impact Report for the project was issued in July 2015. [footnote#45: 45 The Draft EIS/EIR is available at: http://www.sltpeis-eir.com/draftEIS-EIRMainText.pdf.] From the Draft EIS/EIR, it is clear that the project will include construction of facilities in the vicinity of the Clifton Court Forebay. See Figure 2-1 at page 2-2 of the Draft EIS/EIR for the San Luis Transmission Project. The RDEIR/SDEIS also makes clear that some of the most substantial impacts to sensitive natural communities from the new alternatives will occur in the areas surrounding the Clifton Court Forebay. In particular, the RDEIR/SDEIS notes that implementation of Alternative 4A would harm the following habitats in the vicinity of the Clifton Court Forebay: tidal perennial aquatic community (RDEIR/SDEIS at 4.3.8-3), tidal freshwater perennial emergent wetland community (RDEIR/SDEIS at 4.3.8-29), nontidal freshwater perennial emergent wetland natural community (RDEIR/SDEIS at 4.3.8-30), alkali seasonal wetland complex natural community (RDEIR/SDEIS at 4.3.8-34), vernal pool complex natural community (RDEIR/SDEIS at 4.3.8- 40), managed wetland community (RDEIR/SDEIS at 4.3.8-45), and grassland natural community (RDEIR/SDEIS at 4.3.8-54).</p> <p>Despite the fact that both the new alternatives and the San Luis Transmission Project will harm sensitive natural communities and the species that depend on those communities in the areas surrounding the Clifton Court Forebay, the RDEIR/SDEIS does not seem to consider the San Luis Transmission Project in its cumulative impacts analysis. This omission undermines the RDEIR/SDEIS’s conclusions about the project’s impacts and must be remedied.</p>	<p>The San Luis Transmission Project was not included in the EIR/EIS analysis due to the timing of the release of that Draft EIR (July 2015), which occurred around the same time as the release of the Recirculated BDCP Draft EIR/EIS. Though this project was not included in the cumulative effects analysis in Chapter 12 of the EIR/EIS, the effects from that project together with the other projects evaluated for cumulative effects would not change any of the effects conclusions in the cumulative effects section nor require additional analysis of cumulative effects on biological resources.</p> <p>The portion of the San Luis Transmission Project that is within the Plan Area is located mostly within agricultural habitats. The analysis of effects on special-status species concludes that those effects would be less than significant with mitigation. The largest disturbance associated with the project would be the optional construction of a new substation, which would be in an area that is under cultivation. The analysis in the Draft EIR for the San Luis Transmission Project does not identify any impacts to vernal pools, tidal perennial aquatic, tidal freshwater emergent wetland, alkali seasonal wetlands, or managed wetlands in the northern segment of that project, which is the area closest to Clifton Court Forebay. The only overlap in resources affected between Clifton Court Forebay construction and the San Luis Transmission Project infrastructure in the vicinity would be to cultivated lands and grasslands. There are no species identified in this portion of the Plan area that utilize cultivated lands and grasslands that would have adverse effects that are cumulatively considerable when the San Luis Transmission Line Project is considered.</p> <p>For additional information on cumulative impacts please see Master Response 8. For additional information on terrestrial biological resources see Master Response 43.</p>
2598	149	<p>The RDEIR/SDEIS Fails to Adequately Analyze Impacts to San Francisco Bay [footnote#45: 46 Pursuant to NEPA, an EIS must contain a detailed statement of “any adverse environmental effects” of a proposed action and its alternatives, including any direct and indirect effects.</p>	<p>Downstream effects, including on San Francisco Bay, are analyzed in Impact AQUA-218. In addition, effects on non-covered aquatic species of primary management concern (Impacts AQUA-199 to AQUA-212) include consideration of effects to bay shrimp.</p>

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		<p>42 U.S.C. § 4332(C)(ii); see 40 C.F.R.</p> <p>§ 1502.16. “Indirect effects” are defined as those “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable,” and include “effects on air and water and other natural systems, including ecosystems.” 40 C.F.R. § 1508.8(b). Similarly, CEQA requires that an EIR consider “[a]ll significant effects on the environment of a proposed project,” regardless of the geographic scope of the project itself. Pub. Res. Code § 21100(b)(1); see also 14 Cal. Code Regs. § 15126.2.</p> <p>h.]] Numerous outcomes of the project alternatives can reasonably be expected to produce effects downstream of the project area. For example, the projected declines in numerous forage fish species (including anadromous fish like salmon and partially anadromous fish like Longfin Smelt) may affect productivity and inter-annual variability among mammals (e.g. Orca whales, see NMFS Biological Opinion 2009), seabirds (Cury et al. 2011), waterfowl, and predatory fish species in San Francisco Bay and the Gulf of the Farallons. Indeed, recent research indicates that fresh water flows into the San Francisco Estuary have multiple effects that reach far downstream into marine environments:</p> <p>The effects of [freshwater outflow from the watershed] propagated further down the estuary salinity gradient than [effects from the Pacific Ocean] that propagated up the estuary salinity gradient, exemplifying the role of variable freshwater outflow as an important driver of biotic communities in river-dominated estuaries.</p> <p>Feyrer et al. (2015) at 1. However, the RDEIR/SDEIS fails to adequately analyze or address the effects of changes to freshwater flow and related variables arising from project alternatives on the rest of the San Francisco Bay complex or the nearshore ocean environment.</p>	
2598	150	<p>The RDEIR/SDEIS did add a minimal “assessment of constituent effects downstream of the Plan Area (i.e., in San Francisco Bay).” See, e.g., RDEIR/SDEIS at 2-2, 2-5. For example, the analysis of water quality impacts for New Alternative 4A included a two-page section entitled, “Impact WQ-34: Effects on San Francisco Bay Water Quality Resulting from Facilities Operations and Maintenance and Environmental Commitments.” RDEIR/SDEIS at 4.3.4-70 to 4.3.4-72; see also id. Appendix A at 8-308 to 8-312 (Alternative 4). However, the overly simplistic assumptions made in this section, i.e., that the level of pollutants in Delta outflow resulting from the Project would be minimal and thus not adversely affect Bay water quality, ignore the primary concerns associated with proposed conveyance facilities on the Bay ecosystem.</p>	<p>The assessment of effects of the Alternative 4A on San Francisco Bay water quality was based on the qualitative and quantitative changes in water quality that would occur in the Delta along with modeled changes in Delta outflow. For most constituents, Alternative 4A would have a less than significant impact to water quality. Supporting tables based on modeled changes in nitrogen, phosphorus, mercury, and selenium are provided in Appendix 8O, San Francisco Bay Analysis. The analysis also considered the beneficial uses of the bay water relative to constituents of concern. Thus, the assessment of San Francisco Bay is considered complete for NEPA and CEQA.</p>
2598	150	<p>The RDEIR/SDEIS did add a minimal “assessment of constituent effects downstream of the Plan Area (i.e., in San Francisco Bay).” See, e.g., RDEIR/SDEIS at 2-2, 2-5. For example, the analysis of water quality impacts for New Alternative 4A included a two-page section entitled, “Impact WQ-34: Effects on San Francisco Bay Water Quality Resulting from Facilities Operations and Maintenance and Environmental Commitments.” RDEIR/SDEIS at 4.3.4-70 to 4.3.4-72; see also id. Appendix A at 8-308 to 8-312 (Alternative 4). However, the overly simplistic assumptions made in this section, i.e., that the level of pollutants in Delta outflow resulting from the Project would be minimal and thus not adversely affect Bay water quality, ignore the primary concerns associated with proposed conveyance facilities</p>	<p>The assessment of effects of the Alternative 4A on San Francisco Bay water quality was based on the qualitative and quantitative changes in water quality that would occur in the Delta along with modeled changes in Delta outflow. For most constituents, Alternative 4A would have a less than significant impact to water quality. Supporting tables based on modeled changes in nitrogen, phosphorus, mercury, and selenium are provided in Appendix 8O, San Francisco Bay Analysis. The analysis also considered the beneficial uses of the bay water relative to constituents of concern. Thus, the assessment of San Francisco Bay is considered complete for NEPA and CEQA.</p>

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		on the Bay ecosystem.	
2598	151	<p>Total sediment load reaching the Delta would be reduced by up to approximately 9%, on average as a result of the new diversion point in the North Delta and this would result in increased water clarity.</p> <p>RDEIR/SDEIS Appendix A at 11-184; id. at 4.3.7-29. As described supra, the potential impacts of reduced suspended sediment concentrations within the Delta include: exposure of juvenile fishes (including, but not limited to, Delta Smelt, Chinook salmon, and larval Green Sturgeon and White Sturgeon) to increased predation pressure, increased growth of certain invasive macrophyte species, which in turn further increase predation pressures; harmful algal blooms (e.g., <i>Microcystis</i>); reduced dissolved oxygen; and reduced resiliency of wetlands to erosion and sea level rise.</p> <p>These same impacts are of significant concern to downstream portions of San Francisco Bay, as documented by the Independent Science Board and comments submitted by the Bay Conservation and Development Commission. BCDC 2014. These impacts to the Bay, however, are not adequately addressed in the RDEIR/SDEIS.</p> <p>USGS researchers have observed a steep reduction in Bay suspended sediment concentrations and characterize San Pablo Bay as erosional. Barnard et al. 2014; Jaffe et al. 2007. BCDC has stated that with projected sea level rise, further reduction in Bay sediment inputs should be considered significant, given Bay wetland restoration targets, current subsided diked-baylands, and the overall Bay-Delta sediment budget. BCDC 2014; see Knowles 2010; Stralberg et al. 2011.</p>	<p>The authors do not agree with the commenter’s interpretation of the results. The text indicates that 9% is a worst case scenario for the reduction in sediment coming specifically from the Sacramento River. A 9% reduction of a 39% share of total sediment inputs to the Bay (see McKee et al. 2013, as cited in the text) amounts to a reduction of 3.5-4.5% of total sediment in the Bay, which is deemed undetectable biologically. In addition, this value would be even lower if sediment reintroduction is conducted as expected, although this was not considered in arriving at the determination.</p> <p>For responses to comments related to the Delta Independent Science Board’s letters, please refer to comment letters BDCP 1448 and/or RECIRC 2546. Please refer to Master Response 14.</p>
2598	152	<p>In addition to concerns over the loss of sediment available to supply wetlands surrounding the Bay margin and the Bay floor, suspended-sediment concentration reductions are likely to increase water clarity, thus enhancing the likelihood for traditional signs of eutrophication (e.g. harmful algal blooms, increased primary productivity, and low dissolved oxygen). The common paradigm for the San Francisco Bay’s estuary is that high SSC creates turbid conditions that limit light penetration, which inhibits primary production in nutrient rich waters that would otherwise be expected to exhibit signs of eutrophication. Senn and Novick 2014; Cloern 1987; Cole and Cloern 1984; Cloern and Jassby 2007. Recent analyses indicate, however, suspended sediment loads to the Bay have reduced significantly, with Bay-wide SSC reductions of ~35% since 1998, and up to 50% since 1975 in Suisun Bay. Schoellhamer 2011; Senn and Novick 2014. The explanation is that both external loads of suspended sediment and resuspension of material from the bed have decreased. The RDEIR/SDEIS fails to assess the effects of the projected reduction in sediment load on the northern embayments of San Francisco Bay. In the event of a 9% reduction in suspended sediment load in the Delta, San Francisco Bay would tend to increase the likelihood and magnitude of eutrophication indicators, see Cloern and Jassby 2007, including algal blooms, low dissolved oxygen, and the presence of toxins such as microcystin (see above) in the water column, sediment, and fish and wildlife species of the Bay. Current research indicates that microcystin is:</p> <ul style="list-style-type: none"> • Frequently detected in San Francisco Bay at levels beyond recommended “alert” thresholds; 	<p>Please see response to comments 85 and 87 regarding the analysis of turbidity. In addition, the effects of less sediment on downstream bays are analyzed in Impacts AQUA-218 (related to operations) and AQUA-220 (related to habitat restoration), where the effects are found to be less than significant with the implementation of sediment reintroduction. This in part is related to the existing sources of sediment to the downstream bays, which in large part are from smaller, local watersheds rather than from the Central Valley.</p>

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		<ul style="list-style-type: none"> • Found in a high proportion of mussels sampled in the Bay; and, • Often detected in the Bay though it originates in the Delta. <p>UC Santa Cruz 2015. Given the potentially severe health effects of microcystin to human, fish and wildlife populations, including those in marine environments, see, e.g., Miller et al. 2010, the RDEIR/SDEIS must be revised to adequately analyze and disclose the impacts from project alternatives on harmful algal bloom formation in the Delta and subsequent transfer of toxic substances to the Bay and beyond.</p>	
2598	153	<p>The RDEIR/SDEIS fails to meaningfully analyze the effects of reductions in freshwater inflow to San Francisco Bay. As the RDEIR/SDEIS appears to recognize, climate change, drought, and sea level rise will also result in reduced freshwater flows through the Delta and increased salinity intrusion in the coming decades. See RDEIR/SDEIS at 4.2-4. Yet the RDEIR/SDEIS fails to properly evaluate how reduced flows resulting from the Project over time will impact the designated beneficial uses of San Francisco Bay, which include commercial and sport fishing, estuarine habitat, fish migration, navigation, preservation of rare and endangered species, water contact and non-contact recreation, shellfish harvesting, fish spawning, and wildlife habitat. See RDEIR/SDEIS at 4.3.4-70 – 4.3.4-71. Nor does the RDEIR fully consider how such reduced flows will affect existing impairments in the Bay, including invasive species, mercury, and selenium, given the unsubstantiated and summary conclusion in the RDEIR/SDEIS that “changes in Delta outflow [under Preferred Alternative 4A] would be similar” to existing conditions and the No Action Alternative.” Id. at 4.3.4-71.</p>	Please see response to Comment 148 for information on the adequacy of the downstream analysis.
2599	1	<p>She is against the tunnels. They are bad for the Delta, which needs fresh water. We will wreck the Delta with the tunnels.</p>	The comment does not raise any environmental issue related to the 2015 RDEIR/SDEIS or the 2013 DEIR/EIS.