

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
1226	1	<p>ACWA [Association of California Water Agencies] is concerned that the approach taken in the draft Bay-Delta Plan amendment does not provide reasonable protection of all beneficial uses of water and fails to appropriately balance the multiple competing uses of water as required by state law. The approach is inconsistent with the coequal goals of improving water supply reliability and enhancing the Delta ecosystem established in the Delta Reform Act of 2009. The approach is also inconsistent with the Sustainable Groundwater Management Act ("SGMA") and would undermine implementation of the California Water Action Plan, particularly in the areas of improving water supply reliability, sustainably managing groundwater, and providing safe drinking water for all communities.</p> <p>On March 10, 2017, ACWA's Board of Directors unanimously adopted the attached policy statement on Bay-Delta flow requirements. In the policy statement, ACWA expresses deep concerns regarding the draft Bay-Delta Plan amendment's proposal to base flows on a percentage of unimpaired flow, and presents an alternate approach that supports the Governor's request that flow requirements be developed through a negotiated, collaborative process.</p>	<p>Please see Master Response 1.1, General Comments, and Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board consideration of beneficial uses and the Delta Reform Act. Please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act [SGMA], regarding SED consideration of SGMA. Please see Master Response 2.7, Disadvantaged Communities, regarding potential impacts of the plan amendments related to disadvantaged communities and small public water systems. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding voluntary agreements, human right to water, and public health and safety requirements.</p>
1226	2	<p>ACWA's [Association of California Water Agencies'] members overwhelmingly believe the draft Bay-Delta Plan amendment's singular focus on unimpaired flows is the wrong choice for the state's future. The proposed "percentage of unimpaired flow" approach outlined in the draft Bay-Delta Plan amendment fails to account for all beneficial uses of water, fails to consider economic impacts, contradicts existing state policy, and does not incorporate the best available science. The only way to achieve a vision for a future that includes a healthy economy as well as healthy ecosystems and fish populations is through comprehensive, collaborative approaches that include "functional" flows as well as non-flow solutions that contribute real benefits to ecosystem recovery.</p>	<p>Please see Master Response 1.1, General Comments, for responses to general comments on the plan amendments. For more detailed information please refer to the following: Master Response 1.2, Water Quality Control Planning Process, for information regarding the appropriate use of relevant authorities and regulations in the State Water Board water quality control planning process and the consideration of beneficial uses; Master Responses 8.0, Economic Analyses Framework and Assessment Tools; 8.1, Local Agricultural Economics Effects and the SWAP Model; 8.2, Regional Agricultural Economic Effects; 8.4, Non-Agricultural Economic Considerations; and 8.5, Assessment of Potential Effects on the San Francisco Bay Area Regional Water System, for more detailed information regarding the economic analyses, economic effects and other economic considerations; Master Response 3.1, Fish Protection, for a description and scientific basis of the unimpaired flows approach, in combination with adaptive implementation, as providing the benefits of functional flows; Master Response 3.2, Surface Water Analyses and Modeling for a discussion on the calculation of unimpaired flow.</p> <p>In addition to the State Water Board using an unimpaired flow approach to establishing plan amendments for the LSJR flow objectives, the program of implementation incorporates adaptive implementation to facilitate flexible regulation, including the incorporation of non-flow measures, and requires monitoring and special studies. Please refer to Appendix K, Revised Water Quality Control Plan; Chapter 16, Evaluation of Other Indirect and Additional Actions; and Master Response 5.2, Incorporation of Non-Flow Measures, for more information.</p>
1226	3	<p>The Bay-Delta Plan must provide reasonable protection for all beneficial uses of water and must factor in economic considerations.</p> <p>The current draft Bay-Delta Plan amendment fails to recognize the beneficial uses of water on affected waters outside of the Delta, does not provide reasonable protection for those beneficial uses, and fails to consider economics and other key factors in the required public interest balancing. The Water Board is responsible for amending the Bay-Delta Plan in a manner that establishes water quality objectives that ensure the reasonable protection of</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board consideration of beneficial uses within the context of the water quality control planning process and the Bay-Delta proceedings, including the State Water Board's protection of beneficial uses in the Bay-Delta and tributary watersheds through independent proceedings.</p> <p>Please see Master Response 1.1, General Comments, for responses to comments regarding the watersheds included in the SED and the resources and impacts evaluated in the SED, including economic impacts.</p>

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		<p>all beneficial uses of water, including domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources. (Wat. Code § 13050.)</p> <p>In doing so, the Water Board must consider past, present and probable future beneficial uses, environmental characteristics, water quality conditions and economic considerations, among other things. (Wat. Code § 13241.) Thus, when setting water quality objectives, the Water Board must consider "all demands being made and to be made on those waters." (Wat. Code § 13000.) In their singular focus on flows for wildlife beneficial uses, the draft amendments to the Bay-Delta Plan fail to protect other beneficial uses.</p> <p>Further, the draft amendments fail to consider the economic impacts that will occur as surface water supplies for water supply are reduced. For example, the proposal could lead to widespread fallowing of agricultural land in the region. The California Water Action Plan ("Plan") underscores the policy objective that "the Water Board's action will balance competing uses of water including municipal and agricultural supply, hydropower, fishery protection, recreation, and other uses" (Plan at p. 10). To accomplish this, the Water Board must first examine the beneficial uses of the waters of the tributaries, and then engage in the required statutory balancing.</p> <p>These procedural steps are mandatory because they reflect the State's policy determination that, in our climate where water is relatively scarce in many areas, the public interest requires balancing of the multiple competing uses for this precious resource. These important steps must be taken before the Water Board can appropriately consider the draft amendments to the Bay-Delta Plan.</p>	<p>The SED is clear and provides sufficient detail to allow for a meaningful analysis.</p> <p>For further information on the consideration of the economic effects of the plan amendments, including potential fallowing of agricultural land, please see Appendix G, Agricultural Economic Effects of the Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results; Chapter 20, Economic Analyses; and Master Response 8.2, Regional Agricultural Economic Effects.</p>
1226	4	<p>The draft Bay-Delta Plan amendment is inconsistent with the coequal goals established in the Delta Reform Act of 2009.</p> <p>Since enactment of the Delta Reform Act of 2009, state law has set forth the coequal goals of improving water supply reliability for California and protecting, restoring and enhancing the Delta ecosystem. ACWA [Association of California Water Agencies] is committed to furthering the coequal goals and has supported a comprehensive approach to ecosystem management for more than two decades. In 2014, the Brown Administration released its California Water Action Plan outlining priority actions addressing water use efficiency, groundwater sustainability, ecological restoration, Delta conveyance solutions, water storage, safe drinking water and more.</p> <p>Stated clearly in the California Water Action Plan is the Brown Administration's commitment that planned actions "will move California toward more sustainable water management by providing a more reliable water supply for our farms and communities, restoring important wildlife habitat and species, and helping the state's water systems and environment become</p>	<p>Please see Master Response 1.1, General Comments, regarding the Delta Reform Act and California Water Action Plan. Please see Master Response 1.2, Water Quality Control Planning Process, Consideration of Beneficial Uses, provides additional information on the balancing of the coequal goals.</p>

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		<p>more resilient" (Plan at p. 4).</p> <p>ACWA believes the policy of coequal goals and the commitment embedded in the California Water Action Plan have the potential to put California on a path that includes both a vibrant agricultural and urban economy on the one hand, and a healthy ecosystem on the other. ACWA is concerned that the draft Bay-Delta Plan amendment, as currently written, undercuts and threatens that potential and cannot lead us to the future we want for California.</p>	
1226	5	<p>The draft Bay-Delta Plan amendment would undercut current state policy on groundwater sustainability. The draft amendment notes that the proposed "percent of unimpaired flows" proposal will increase groundwater overdraft. Since the 2014 adoption of SGMA, the state has made clear that its goal is to achieve sustainable management of groundwater basins. Increased groundwater pumping to replace lost surface supplies in groundwater basins that are already in a condition of overdraft will undermine groundwater sustainability goals. Therefore, the outcome of reducing surface water supplies is likely to be widespread following, as noted by many commenters from the counties and irrigation districts in the affected areas.</p> <p>Increased groundwater pumping would also affect water quality in the drinking water wells in the impacted area, which includes a significant number of disadvantaged communities. The California Water Action Plan notes that "the state will identify drought-vulnerable public water systems" and "help prevent or mitigate any anticipated shortfalls in supply" when needed (at p. 18). The current draft Bay-Delta Plan amendment promotes an anticipated shortfall in supply that is flatly inconsistent with this state policy.</p>	<p>The existing groundwater overdraft conditions in the plan area are legacy issues caused by unsustainable agricultural expansion; SGMA was passed by the legislature in 2014 to address overdraft issues. The State Water Board also has a legal mandate to reasonably protect fish and wildlife beneficial uses, which the State Water Board is proposing to do with the plan amendments. The State Water Board acknowledges it will be challenging, but SGMA compliance cannot occur at the expense of reasonably protecting surface water beneficial uses; both groundwater and surface water must be protected.</p> <p>The SED and plan amendments do not require or encourage increases in groundwater pumping as a response to reductions in surface water. The SED merely reflects the historical response of water users to increase groundwater pumping when surface water availability is reduced. It will be up to local entities to determine the precise actions that would be taken in response to implementation of the plan amendments, with or without the future condition of SGMA. Comprehensively addressing both resources allows for integrated planning that does not trade impacts between surface and groundwater and ensures long-term drinking water supplies for disadvantaged communities.</p> <p>For further discussion on compliance with SGMA under the plan amendments, please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act.</p> <p>For a discussion on why pre-existing conditions related to water supply and water quality would not be exacerbated by the plan amendments, and information regarding the financial and technical assistance programs available to assist disadvantaged communities to implement new water supply projects or to comply with SGMA, please see Master Response 2.7, Disadvantaged Communities .</p> <p>Please see Master Response 3.6, Service Providers, for a discussion on the reason why the LSJR flow objectives would not jeopardize municipal water supply.</p> <p>For discussion on the impact of the plan amendments on agricultural resources, please see Master Response 3.5, Agricultural Resources.</p>
1226	6	<p>The current draft amendments to the Bay-Delta Plan do not incorporate all of the best available science. The Water Board needs to incorporate the best available science to</p>	<p>Please see Master Response 1.1, General Comments, and Master Response 3.1, Fish Protection, for responses to comments regarding the State Water Board's use of the best available science in the SED's</p>

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		<p>inform its work and assist with the development of voluntary settlement agreements. The 2012 Delta Independent Science Board peer review of the "unimpaired flows" approach states that "flow is but one of many stressors affecting fish and wildlife" and "the choice of flow criteria and metrics needs to serve the broader needs of ecosystems as well as individual species." (May 22, 2012 letter at p. 1)</p> <p>The draft Bay-Delta Plan amendment's "percent of unimpaired flows" proposal, in which flow objectives are not tied to any specific ecological outcome, fails to incorporate the best available science and will not lead to the desired improvement in fisheries. The plan amendment needs to focus on the entire life cycle of affected species and multiple stressors that affect their status, such as predation, food, and habitat availability, and incorporate all current scientific information.</p>	<p>analysis and the scientific basis for the plan amendments.</p> <p>Please also see Master Response 3.1 for responses to comments regarding the purpose of the plan amendments and Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, for a clarifying discussion of the State Water Board's consideration of feasible alternatives.</p>
1226	7	<p>ACWA's [Association of California Water Agencies'] member agencies have invested significant resources into scientific study of the fish populations that would be affected by the implementation program outlined in the Bay- Delta Plan amendments, and the science demonstrates that connecting flows to other types of activities such as habitat restoration or food production can benefit species in ways that unimpaired flow requirements cannot. Examples abound of collaborative, innovative projects currently underway by local water agencies and stakeholders that include "functional flows" and non-flow solutions that reconnect land and water to restore habitat and address the full life cycle of species needs. These efforts contribute real benefits to ecosystem recovery while maintaining water supply reliability, and can form the basis of integrated solutions that provide ecosystem benefits with far less impact on water supply, the California economy and the public interest.</p>	<p>The State Water Board recognizes that non-flow actions must be part of the overall effort to comprehensively address ecosystem needs in the Delta and tributaries, as a whole, and that results from the implementation of such actions can be used to inform adaptive implementation decisions in response to implementation of the plan amendments (see Master Response 5.2, Incorporation of Non-Flow Measures and Non-Flow Measure Analyses, for more information). For this reason, the State Water Board recommends and incorporates a range of non-flow actions complementary to the flow objectives for the reasonable protection of fish and wildlife in Appendix K, Revised Water Quality Control Plan. Among these recommendations are actions to restore physical habitat including floodplain and habitat restoration, reducing vegetation-disturbing activities in floodplains and floodways, providing gravel augmentation, and enhancing in-channel complexity. Chapter 16, Section 16.3, Lower San Joaquin River Alternatives – Non-Flow Measures, includes a description of these actions and their associated cost and potential environmental impacts.</p> <p>See Master Response 3.1, Fish Protection, regarding the comment about functional flows, which describes that this project is a functional flow project.</p> <p>Also see Master Response 3.1, Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, and Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, regarding the scientific basis for the need of improved flow conditions.</p>
1226	8	<p>The best way to achieve the desired outcomes and provide reasonable protection for all uses of water is through a collaborative, negotiated process.</p> <p>The Governor has called for work on a comprehensive agreement on environmental flows in both the San Joaquin and Sacramento River basins. He has asked that Water Board members and staff prioritize analysis and implementation of voluntary agreements. Further, the Brown Administration committed in the California Water Action Plan that the Water Board and the California Natural Resources Agency will work with stakeholders to encourage negotiated implementation of protective Delta standards. ACWA [Association of</p>	<p>Please see Master Response 1.1, General Comments, for information regarding the voluntary agreements. The State Water Board recognizes that voluntary agreements can help inform and expedite implementation of flow objectives and provide durable solutions in the Delta watershed, and the State Water Board continues to support voluntary agreements.</p> <p>Please see Master Response 3.1, Fish Protection, regarding benefits of the plan amendments, the need for increased flow, the role of non-flow measures, and consideration of stressors other than flow.</p>

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		<p>California Water Agencies] strongly supports the collaborative approach called for by the Governor because it is the least contentious, most effective way to achieve the coequal goals. Negotiated agreements have been demonstrably successful at achieving outcomes and widespread support for appropriate environmental flows; forced regulations have not yielded the same track record. The Water Board should wholly embrace this approach and allow enough time for it to work.</p> <p>A successful collaborative approach will require comprehensive solutions for both water supply and ecosystem management. Water users will need to continue and build on their commitment to integrated resources management in order to maintain reliability without undue impacts on the ecosystem. Similarly, ecosystem managers will need to focus on the entire life cycle of affected species and multiple variables, such as predation, food, and habitat availability, to develop integrated management portfolios that accomplish ecosystem goals without undue impacts on water supply. Utilizing the single variable proposed in the "percentage of unimpaired flow" approach will not achieve the desired ecological outcomes and is, by far, the most destructive policy approach from the perspective of protecting and improving water supply. ACWA firmly believes the ecological outcomes can be achieved with even better results through a comprehensive approach that considers multiple solutions and benefits.</p>	
1226	9	<p>ACWA's [Association of California Water Agencies'] Board of Directors has taken a strong policy position in support of comprehensive solutions such as those outlined in the California Water Action Plan. ACWA urges the Water Board to heed Governor Brown's call for voluntary agreements that are negotiated through a comprehensive, collaborative process. We stand ready to work with the Water Board and the Brown Administration to pursue the collaborative and comprehensive approaches needed to ensure a future for California that includes a vibrant agricultural and urban economy and a healthy ecosystem.</p>	<p>Please see Master Response 1.1, General Comments, for information regarding the voluntary agreements. The State Water Board recognizes that voluntary agreements can help inform and expedite implementation of flow objectives and provide durable solutions in the Delta watershed, and the State Water Board continues to support voluntary agreements.</p>
1226	10	<p>[From ATT1:]</p> <p>Collaborative approach is key to California's future.</p> <p>California is facing a defining moment in water policy. A staff proposal under consideration by the State Water Resources Control Board presents a decision point about the future we want for California and its communities, farms, businesses and ecosystems. The State Water Board's staff proposal to base new water quality objectives on a "percentage of unimpaired flow" would have impacts that ripple far beyond water for fish. The proposal could lead to widespread following of agricultural land, undercut the state's groundwater sustainability goals, cripple implementation of the Brown Administration's California Water Action Plan, negatively affect water reliability for much of the state's population and impact access to surface water for some disadvantaged communities that do not have safe drinking water. These effects are not in the public's interest.</p> <p>Local water managers overwhelmingly believe the proposal's singular focus on "unimpaired flow" is the wrong choice for the state's future. California's urban and agricultural water</p>	<p>Please see the response to comment 1226-8 regarding voluntary agreements.</p> <p>Please see response to comment 1226-3, regarding the resources and impacts evaluated in the SED (including economic impacts), sustainable groundwater management.</p> <p>Please see Master Response 1.1, General Comments, regarding the relationship of the plan amendments with other programs and policies, including the California Water Action plan.</p> <p>Please see response to comment 1226-1 regarding disadvantaged communities, human right to water, and public health and safety requirements.</p>

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		<p>managers are united in their vision for a future that includes a healthy economy as well as healthy ecosystems and fish populations. That vision is best achieved through comprehensive, collaborative approaches that include "functional" flows as well as non-flow solutions that contribute real benefits to ecosystem recovery.</p>	
1226	11	<p>[From ATT1:]</p> <p>Choosing our Vision for California’s Water Future</p> <p>Since 2009, state law has required water resources to be managed in a way that achieves the coequal goals of improving water supply reliability for California and protecting, restoring and enhancing the Delta ecosystem. ACWA [Association of California Water Agencies] and its public water agency members believe that policy requires a commitment from state agencies and stakeholders to advance both water supply and environmental goals together. ACWA and its members further believe that effective implementation of the coequal goals requires transparent, collaborative processes and comprehensive solutions.</p> <p>In 2014, the Brown Administration released its California Water Action Plan outlining priority actions addressing water-use efficiency, groundwater sustainability, ecological restoration, Delta conveyance solutions, water storage, safe drinking water and more. Embedded in the plan is the Brown Administration’s commitment that planned actions "will move California toward more sustainable water management by providing a more reliable water supply for our farms and communities, restoring important wildlife habitat and species, and helping the state’s water systems and environment become more resilient."</p> <p>ACWA believes the policy of coequal goals and the commitment embedded in the California Water Action Plan have the potential to put California on a path that includes a vibrant agricultural and urban economy and a healthy ecosystem. ACWA and its members believe the unimpaired flow approach proposed by State Water Board staff undercuts and threatens that potential and cannot lead us to the future we want for California. Simply put, any strategy that would result in vast amounts of agricultural land going out of production and ultimately reduce water supply reliability for the majority of Californians is irreconcilable with a policy of coequal goals and blatantly inconsistent with the water policy objectives of the Brown Administration. ACWA strongly supports the collaborative approach called for by Governor Jerry Brown to move these important decisions out of adversarial processes and into negotiated, comprehensive agreements.</p>	<p>Please see response to comment 1226-10.</p>
1226	12	<p>[From ATT1:]</p> <p>A Better Path to the Future</p> <p>The State Water Board is responsible for updating the Bay-Delta Plan in a manner that establishes water quality objectives that ensure the reasonable protection of all beneficial uses of water (including domestic, municipal, agricultural and industrial supply; power</p>	<p>Please see Master Response 1.1, General Comments, for a general discussion regarding the State Water Board’s authorities.</p>

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		<p>generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources) while considering past, present and probable future beneficial uses, environmental characteristics, water quality conditions and economic considerations, among other things. (See California Water Code Section 13241.) It also has a responsibility to update the plan in a way that is consistent with the coequal goals and respects and implements the commitments made in the California Water Action Plan.</p>	
1226	13	<p>[From ATT1:]</p> <p>ACWA [Association of California Water Agencies] and its members urge the State Water Board to set aside the unimpaired flow approach and heed Governor Brown’s call for negotiated agreements. The governor has called for work on a comprehensive agreement on environmental flows in both the San Joaquin and Sacramento River basins. He has asked that State Water Board members and staff prioritize analysis and implementation of voluntary agreements. Further, the Brown Administration committed in the California Water Action Plan that the State Water Board and the California Natural Resources Agency will work with stakeholders to encourage negotiated implementation of protective Delta standards.</p> <p>ACWA strongly supports the collaborative approach called for by the governor because it is the least contentious, most effective way to achieve the coequal goals. Negotiated agreements have been demonstrably successful at achieving outcomes and widespread support for appropriate environmental flows; forced regulations have not yielded the same track record. The State Water Board should wholly embrace this approach and allow enough time for it to work.</p>	<p>Please see Master Response 1.1, General Comments, regarding voluntary agreements and commenter suggested plans and proposals.</p>
1226	14	<p>[From ATT1:]</p> <p>A successful collaborative approach will require comprehensive solutions for both water supply and ecosystem management. Water users will need to continue and build on their commitment to integrated resources management in order to maintain reliability without undue impacts on the ecosystem. Similarly, ecosystem managers will need to focus on the entire life cycle of affected species and multiple variables, such as predation, food, and habitat availability to develop integrated management portfolios that accomplish ecosystem goals without undue impacts on water supply.</p> <p>Utilizing the single variable proposed in the "percentage of unimpaired flow" approach will not achieve the desired ecological outcomes and is, by far, the most destructive policy approach from the perspective of protecting and improving water supply. ACWA [Association of California Water Agencies] firmly believes the ecological outcomes can be achieved with even better results through a comprehensive approach that considers multiple solutions and benefits.</p>	<p>Please see response to comment 1226-8.</p>
1226	15	<p>[From ATT1:]</p> <p>The State Water Board needs to incorporate the best available science to inform its work</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments regarding the incorporation of science into the SED. Please see Master Response 1.1, General Comments, for information regarding voluntary agreements and collaboration with agencies. Voluntary agreements can be submitted</p>

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		<p>and assist with the development of voluntary settlement agreements. The unimpaired flow approach, in which flow objectives are not tied to any specific ecological outcome, fails to incorporate the best available science. The updated plan needs to focus on the entire life cycle of affected species and multiple variables, such as predation, food, and habitat availability, and incorporate relevant current scientific information. Science alone cannot identify the best policy choice, but it can inform us about the policy tradeoffs we confront and help structure integrated solutions that provide ecosystem benefits with far less impact on water supply, the California economy and the public interest.</p>	<p>to the State Water Board for consideration at any time. Additionally, the SED Executive Summary, ES 3.1, Lower San Joaquin River Flow and Southern Delta Salinity Proposals addresses the minimum standard the agreements must meet for State Water Board consideration including “measures that meet or exceed the proposed objectives and protect fish and wildlife uses.” Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the LSJR narrative objective, salmon doubling goal, and biological goals.</p>
1226	16	<p>[From ATT1:]</p> <p>Science shows that functional flows have very promising benefits for fish as well agricultural and urban water users. Timed and tailored for specific purposes, functional flows can benefit species in ways that unimpaired flow requirements cannot. Examples abound of collaborative, innovative projects currently underway by local water agencies and stakeholders that include functional flows and non-flow solutions that reconnect land and water to restore habitat and address the full life cycle of species needs. These efforts contribute real benefits to ecosystem recovery while maintaining water supply reliability.</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 3.1, Fish Protection, for more information and responses to comments regarding percent of unimpaired flow and functional flow. Please refer to Master Response 2.2, Adaptive Implementation, for additional information and responses to comments regarding the adaptive implementation elements of the flow proposal that allow for the shaping and timing of flows to provide functional flows.</p>
1226	17	<p>[From ATT1:]</p> <p>The State Water Board has a statutory obligation to consider economic impacts when establishing water quality objectives that reasonably protect all beneficial uses of water. Having a robust economic analysis is critical. The Board also has a policy obligation under the coequal goals to ensure its actions related to a revised Bay-Delta Plan increase water supply reliability and thereby allow for a healthy, growing agricultural and urban economy in California.</p>	<p>Please see Master Response 1.1, General Comments, regarding the Delta Reform Act, coequal goals, and the relationship of these to the plan amendments. Please also see Master Response 1.1 regarding the economic effects considered in the Recirculated SED (primarily Chapter 20, Economic Analyses). Please see Master Response 1.2, Water Quality Control Planning Process, regarding the consideration of beneficial uses by the State Water Board through the water quality control planning process.</p>
1226	18	<p>[From ATT1:]</p> <p>ACWA [Association of California Water Agencies] urges the State Water Board to heed the Governor’s direction and recognize that achieving the coequal goals will lead to a more reliable water supply and healthy ecosystem. Pursuing the coequal goals should be a guiding principle for the Board’s decisions related to adopting a revised Bay-Delta Plan. The State Water Board also should ensure that its decisions on the Bay-Delta Plan enable, rather than obstruct, the implementation of the California Water Action Plan.</p>	<p>Please see Master Response 1.1, General Comments, regarding the Delta Reform Act. Please see Master Response 1.2, Water Quality Control Planning Process, regarding the authorities and regulations governing the Water Quality Control planning process.</p>
1226	19	<p>[From ATT1:]</p> <p>The best policy choice will come through the give and take of the negotiating process and the enlightened leadership of the State Water Board members. Ultimately, the Board must establish water quality objectives that ensure the reasonable protection of all beneficial uses of water as it implements negotiated solutions. The State Water Board should actively engage in this work and lead in a manner that is grounded in an awareness of how its actions can affect the implementation of the California Water Action Plan and the achievement of the coequal goals.</p> <p>ACWA [Association of California Water Agencies] and its members have taken a strong policy position in support of comprehensive solutions such as those outlined in the</p>	<p>Please see responses to comments 1226-8 and 1226-10.</p>

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		<p>California Water Action Plan. We stand ready to work with the Brown Administration to pursue the collaborative and comprehensive approaches needed to ensure a future for California that includes a vibrant agricultural and urban economy and a healthy ecosystem.</p>	
1227	1	<p>Marin Audubon Society's primary interest is in ensuring that fresh water flows are sufficiently restored to support sustainable populations of salmonids and other food web species dependent on the San Francisco Estuary. Fresh water flows to the estuary and ocean have been declining for 60 years causing significant degradation of the entire ecosystem and species that depend on it. What happens in this Phase 1 will not only impact the San Joaquin River system but the entire estuary and the ocean ecosystems. The current proposal will not provide adequate protections for the estuary's fish, other natural resources and water quality. Stopping and reversing the decline of the estuary resources is critical.</p> <p>All four federal and state agencies with responsibility for fisheries resources have "identified the absence of sufficient flows at critical times as a primary driver of population declines." The proposed 40% UF does not achieve CDFW flow recommendations to protect fall-run salmon or the USFWS recommended flow targets to meet protect salmon. Many scientific studies have indicate that flows higher than 40% of UF are needed to support ecosystem species.</p> <p>The State Board must exercise its responsibility to protect the estuary resources. As recommended by responsible scientific sources: At least 50-60% of the unimpaired flow must be dedicated to the Estuary. The CDFW has commented that "Substantial scientific evidence demonstrates that 50-60% Unimpaired flow to the Estuary is "the minimum necessary to reestablish and sustain fish and wildlife beneficial uses." Narrative objectives should "protect fish and wildlife beneficial uses in all months" of the year. Proposed approach is to identify a "block of water" with adaptive management decisions made by a working group consisting of biologists, water managers, interested stakeholders, and water users. This sounds like an invitation for inefficiency and failure. Members with knowledge about and commitment to protecting natural resources have the potential to be greatly outnumbered by users with other interests. Decisions must be based on science to ensure survival of the estuary' s species. Specific criteria should be identified that would trigger management actions regarding flows. A comprehensive monitoring and assessment framework to determine the effectiveness of the new water quality standards as recommended by the USEPA</p> <p>With one-third or less of the unimpaired flow now reaching the estuary, more fresh water flowing through the estuary is clearly needed to protect its beneficial uses. The fate of the estuary and its resources rests with you. Do not let the estuary collapse.</p>	<p>Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
1228	1	<p>The Agricultural Council of California remains troubled that the SED was initially developed without input from those in the impacted region who have expertise in the management of the Merced, Stanislaus, and Tuolumne Rivers, as well as the residents who live and work in the affected areas. For example, between the 2012 version of this document and the September 2016 release of the draft revised SED, the locally affected community received scare information and engagement from the Board staff, although communication and</p>	<p>Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>

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		direction was requested from the local region.	
1228	2	The lack of early outreach and communication with local communities is both frustrating and heartbreaking because slashing the region's surface water supplies further impacts an already disadvantaged area. Unemployment is at 12.6 percent in Merced County and 8.9 percent in Stanislaus County--much higher than the statewide average of 5.1 percent. At peak implementation of the SED, a study released by Stratecon Inc. in December 2016 reveals that employment is cut by about 6,500 jobs and total economic output is reduced in the region by \$1.4 billion. The severity of this economic hit cannot be overstated because the region is currently suffering under the strain of poverty with Merced County ranked third highest in the state in child poverty at 38.1 percent and Stanislaus County ranked sixteenth at 23.7 percent, according to a January 2017 study conducted by UC Davis, California's San Joaquin Valley: A Region and Its Children Under Stress. Finally, with the loss of surface water under the SED, the plan also endangers both water quantity and quality, thereby jeopardizing drinking water in this already poverty stricken region.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1228	3	The Agricultural Council of California is concerned the analysis provided in the SED with regard to crop revenues and land fallowing does not reveal the truly crushing impact of the plan on agriculture. By focusing on average annual impacts, the plan disguises the volatility resulting from the SED. According to the Stratecon study, actual single year crop revenue losses often surpass \$200 million and could grow as high as \$455 million under both the SED and the Sustainable Groundwater Management Act (SGMA). Also, crop revenues in the area will be lowered by an average of \$101 million per year due to land fallowing, per the Stratecon study, after the SED and SGMA are implemented. This is three times the amount estimated by the Board after accounting for inflation.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1228	4	The SED states that lost surface water in the region will be countered by an increase in groundwater pumping. This is perplexing since such action would seem to be contrary to the intent of SGMA written to protect groundwater resources. In addition, since local areas are developing SGMA governance structures at this time, and implementation of the law will occur over many years, the effect of SGMA on groundwater is not yet known. Therefore, we do not know whether groundwater can supplement agricultural water lost under the SED. We respectfully request that the Board not view the SED in isolation given there are serious questions surrounding how this proposal impacts SGMA. As such, we encourage the Board staff to engage with their sister federal and state agencies to seek out information and data as to how SGMA and the SED will comport with one another.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1228	5	A recently passed federal law seeks to protect salmon, as well as study the best mechanism to protect the Delta Smelt. We ask the board to evaluate the steps proposed in the SED with the new federal law in mind and determine the best path forward with local water managers and officials.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1228	6	Above all, we encourage the Board and staff to work toward a transparent process that engages local water managers and the impacted communities in a more meaningful way prior to any final actions.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1229	1	As a wholesale customer of SFPUC that purchases 50% of its potable water supply from the San Francisco Regional Water System, water supply available to the City of San Bruno under	Please see Master Response 8.5, Assessment of Potential Effects on the San Francisco Bay Area Regional Water System, regarding the State Water Board's evaluation of potential reductions in water supply and

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		the SED proposal could be reduced up to 50% under drought conditions for multiple consecutive years.	associated economic considerations and other impacts within the SFPUC Regional Water System (RWS) service area with implementation of the plan amendments. The master response identifies the main points of disagreement or differing assumptions between the SED and the comments. As described in Master Response 8.5, the SED identified reasonably foreseeable actions that could be taken by affected entities to comply with the plan amendments and in response to reduced surface water supplies. These actions did not include the severe mandatory rationing described by SFPUC because it was not reasonably foreseeable that a water supplier would impose drastic mandatory water rationing on its customers without first attempting other actions to replace any reductions in water supplies with alternative sources of water, such as through water transfers.
1229	2	Such reductions in water supply from the SFPUC may force the City of San Bruno to use more local groundwater supplies, having unknown, and potentially significant undesirable results, such as groundwater overdraft, sea water intrusion, and land subsidence, which were not adequately analyzed in the SED.	Please see response to comment 1229-1. Please also see Master Response 8.5, Assessment of Potential Effects on the San Francisco Bay Area Regional Water System regarding groundwater use. Finally, please also see Master Response 1.1, General Comments, for a general discussion as to the approach to the analyses contained in the SED, and the programmatic nature of analysis, and Master Response 8.5, for a more specific discussion of programmatic analysis.
1229	3	The City of San Bruno has made significant strides in water conservation in the past 10 years. Residential per capita water use has decreased to 47 gallons per capita per day (gpcd) in 2017.	The State Water Board acknowledges the City of San Bruno's water conservation effort and ongoing commitment to demand management. This comment does not raise significant environmental issues or make a general comment regarding the plan amendments. Please see response to comment 525-1.
1229	4	Based on the City of San Bruno's 2015 Urban Water Management Plan, this significant cut to water supply would force the City of San Bruno to take a number of significant actions including, but not limited to, implementing a moratorium on new development in the service area, importing water, reliance on local supply, and to minimize nonessential uses of water so that water is available for human consumption, sanitation, and fire protection. The City of San Bruno would need to adjust mandatory allotments and reductions from stage 3 of our Water Shortage Contingency Plan as necessary to reach a City-wide water use reduction of 50 percent. The City may prohibit all water use except as required for public health and safety. Increased enforcement mechanisms would be instituted to enforce the stage 4 cutbacks to meet the reduction.	Please see responses to comments 1229-1. Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for additional discussion regarding health and safety and the emergency provision. Please also see Master Response 3.6, Service Providers, for a discussion of Water Code Section 106 and water for minimum health and safety needs. Please also see Master Response 8.5, Assessment of Potential Effects on the San Francisco Bay Area Regional Water System, regarding economic considerations and growth.
1229	5	Given the interconnected nature of the economy within the Bay Area and BAWSCA service area, the City of San Bruno will be impacted by water shortages on the San Francisco Regional Water System resulting in economic and environmental impacts to neighboring communities and the Bay Area as a whole.	Please see response to comments 1229-1, 1229-4. Please also see Master Response 8.5, Assessment of Potential Effects on the San Francisco Bay Area Regional Water System, for a discussion regarding economic considerations, growth effects, environmental effects based on a rationing-only approach, and demand management.
1229	6	The City of San Bruno serves water to 10,500 residential customers and over 900 businesses and other non-residential customers. Potential consequences of the SED proposal include health and safety concerns due to lack of potable supplies, major job losses, slower economic growth and delayed community development in the City of San Bruno service area. Since outdoor use represents a relatively small proportion of the City of San Bruno's commercial, industrial, and institutional account water demand, commercial, industrial, and institutional customers generally have fewer opportunities to reduce water use without changing their operations or incurring significant economic impacts.	Please see responses to comments 1229-1, 1229-4, and 1229-5.
1229	7	In the light of these aforementioned impacts as well as those articulated in the BAWSCA and SF PUC comment letters incorporated by reference, the City of San Bruno requests that environmental and economic impacts of any shortage on the San Francisco Regional Water System, and the associated lost jobs and delayed development, be fully and adequately analyzed as part of the SWRCB's proposed flow alternatives. Such full and adequate	Please see responses to comments 1229-1, 1229-4, and 1229-5. To the extent that this comment letter raises similar issues or the same issues raised by SFPUC or BAWSCA, please refer to letter 1166 or letter 1191 to review responses to those letters.

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		analysis should be given at least equal weight with all other elements of the SWRCB's subsequent deliberations and decision making.	
1229	8	The Governor has indicated his strong support for negotiated voluntary agreements to resolve these issues. The City of San Bruno requests that the SWRCB provide adequate time for a voluntary agreement to be reached amongst the stakeholders prior to any action on the SED. Please give this settlement process a chance for success instead of expediting the implementation of the current proposal. The City of San Bruno shares BAWSCA's commitment to continue working closely with the diverse interests and stakeholders to develop that shared solution.	Please see Master Response 1.1, General Comments, for information regarding voluntary agreements and collaboration with agencies.
1230	1	I am writing to express my strong and passionate opposition to the 2016 Bay Delta Plan Amendment and Supplemental Environmental Documents (SED), proposed last year, that will require the release of 30-50% of unimpaired flows into the Tuolumne River and require higher detention volumes in Don Pedro Reservoir.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1230	2	<p>As a user of the aquifer I have very serious concerns about the effect that reducing surface water allocation will have on our aquifers (Modesto and Turlock sub basins). When significant overdraft occurs, subsidence can take place, rendering the aquifer permanently unable to store water. The SED proposal will lead to serious overdraft of our aquifers. The most important recharge apparatus in these aquifers is via irrigation. The USGS GAMA Special Study titled Importance of River Water Recharge to Selected Groundwater Basins (LLNL-TR-686433) makes this point very clear:</p> <p>The importance of river water recharge in the San Joaquin valley has nearly doubled and is likely the result of a total increase of recharge caused by river water irrigation return flows. Local precipitation recharge is no longer the dominant mechanism of recharge. In fact, local precipitation only contributes 40% to the yearly inflow. The importance of river water has nearly doubled due to enhanced river water recharge through irrigation return flows. While river water recharge has increased, it has not been able to keep up with increased discharge by pumping, resulting in overdraft and groundwater level declines (Scanlon et al., 2012). Higher future temperatures will exacerbate the summer dry season and droughts, and reliance on groundwater will increase. Local precipitation and groundwater recharge fall short of groundwater pumping in many areas and overdraft of groundwater resources has led to declining groundwater levels, land subsidence, and seawater intrusion.</p> <p>The report emphasizes the importance of recharge of river water via irrigation for renewal of groundwater resources and provides proof through the use of isotope evaluation (both hydrogen and oxygen). After seeing the effect of the recent drought, which dropped the Modesto sub basin an average of more than 7 feet during 2015 in spite of diligent water conservation efforts, it is not hard to see that the changes the SED proposes will destroy the aquifer. This cannot be good for California as a whole.</p> <p>As a Water Treatment Operator I am concerned that further drawing down the aquifer will have a significant deleterious effect on water quality. Many wells had to be taken out of</p>	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.

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		<p>service during the drought due to increases in nitrate, uranium and arsenic under conditions where irrigation was cut back, recharge was diminished and groundwater pumping was increased simultaneously.</p> <p>Many of our domestic water wells are located in unconsolidated material, which keeps them very well oxygenated and free of dissolved iron and manganese. As the water table is lowered and we are forced to place the well pumps deeper we will be drawing water containing iron and manganese above the secondary standard. Our municipal wells are dispersed throughout the distribution systems, making centralized treatment very difficult and the capital cost for each well head treatment for these contaminants is approximately one-million dollars per well, with continuing operation and maintenance costs of around \$30,000 per year per well. This will drive up the cost of water for all citizens in one of the poorest counties in the State. It is impossible to see how creating the need for treatment on individual wells that have never needed treatment benefits California as a whole.</p>	
1230	3	<p>As a resident of Stanislaus County I am concerned with the quality of life effects that loss of evapotranspiration will have. The same USGS GAMA Special Study states:</p> <p>The extensive irrigation with river water also impacts regional climate and air temperatures through the irrigation cooling effect (Kueppers et al., 2007).</p> <p>The average high temperature in July is 95 degrees here and it doesn't cool off at night to safe temperatures for many hours after sunset. Heat illness is a very serious concern from April to October. With the loss of water for irrigation and the evaporative cooling that comes from plants, the temperatures will rise, making the situation worse. Higher temperatures in this agricultural valley cannot be good for California.</p>	<p>Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
1230	4	<p>As an environmentalist I am concerned that drawing down the aquifers, will lead to higher energy use due to the water-energy nexus that is well understood. When you add the increased energy that will be needed to cool homes and businesses due to higher ambient temperatures, it is impossible to see how this proposal is good for California as a whole.</p>	<p>Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>
1230	5	<p>As a resident of the Central Valley I am concerned about air quality. According to the American Lung Association's annual air pollution rankings (April 2014) the "Los Angeles Basin and California's Central Valley still have the nation's highest levels of ozone and fine particle pollution. Air pollution is not just a nuisance or the haze we see on the horizon; it's literally putting our health in danger".</p> <p>During the 2017-2015, when irrigation water allocations were dramatically cut, every vehicle driving on country roads created Dust Bowl like conditions and the dust did not settle. I literally tasted dirt every time I drove anywhere. The air quality was adversely affected by the drought and doctors have reported a dramatic increase in cases of asthma and Valley Fever due to drought conditions. The changes proposed under the SED will create</p>	<p>Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.</p>

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		a permanent drought. I cannot see how further diminishing the air quality in an area that already has the nation's worst air can possibly be good for all Californians.	
1230	6	As a consumer of fresh vegetables, fruits and nuts I am very concerned that the loss of production in our area will result in higher food costs. As a humanitarian, I am worried that people elsewhere on this planet will starve if we do not continue to produce masses of cheap food for the world. It is well understood that California rice, for example, stabilizes the cost of this commodity worldwide. Agriculture in California is one of the biggest contributors to our gross domestic product. California, as a whole, will not benefit from losses in tax revenue. We simply cannot produce food without surface water from the Tuolumne River. Every drop sent is precious.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1230	7	We built and expanded Lagrange and Don Pedro dams to allow us prevent flooding, grow food, create stable communities and generate electricity. This system has been working for a hundred years. In spite of the recent severe drought, our aquifers are relatively healthy. We have been good stewards of our resources. We have shown the foresight to plan for the future and the ability to commit resources to insure continuing growth and success of our community. Please don't punish us for doing the right thing right.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1231	1	Because the Bay-Delta is the largest estuary on the West Coast with more than 500 species' survival at stake, it seems critical that the Board's plan ensure at least one-half of the flows from the Stanislaus, Tuolumne, Merced and lower San Joaquin Rivers end up in the Bay-Delta. In addition to providing migrating birds a resting place, the Bay-Delta allows salmon, steelhead and sturgeon to travel between home streams and the Pacific Ocean.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1231	2	It isn't only wildlife and our important fishery that are at stake in your planning. Small businesses throughout the region are threatened by non-science-based management of natural resources that are the foundation of these enterprises. Making this critical connection clear to the public should be a major factor in these deliberations and rollout of the final plan. California's citizens benefit on so many levels from its waters being considered a public trust resource.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1231	3	Thank you for your efforts to balance the many competing interests for that important resource. People can speak up for their needs and wants; the wildlife and their critical habitat are counting on you to give them equal consideration though they cannot come to the microphone to make their case.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1232	1	<p>It has come to my attention that inaccurate and misleading information about the Santa Nella County Water District (District) water quality and water supply was disclosed at a State Water Board public hearing on December 19, 2016 at the Merced Theatre.</p> <p>The following will clarify, for the record, the correct and accurate information:</p> <ol style="list-style-type: none"> <li>1. The District must blend surface water and groundwater because there are approximately 63 acres of land within the District boundaries that are not within the CVP Use Area. In order to serve those lands, which consists of commercial businesses, the District must pump enough groundwater (and blend with the surface water) to substantiate water service to 	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.

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		<p>these customers, identified as the Non-CVP Use Area.</p> <p>2. The District does not have two wells. There is currently only one groundwater well. The well does not provide enough water supply to meet the demands of Santa Nella. Therefore, the District purchases raw surface water from a CVP contractor/wholesaler at the beginning of the federal water year to provide water to the community. This surface water purchase is for water supply only, not for blending to meet water quality. Without the surface water supply, the District would not be able to provide drinking water to serve the existing community.</p> <p>3. The District does not exceed the Hexavalent Chromium Maximum Contaminant Level (MCL) also referred to as Chromium 6. The District is in compliance with the Hexavalent Chromium MCL. The only MCL the District has exceeded is Total Trihalomethanes (TIHM), a secondary drinking water standard. The last exceedance occurred in the second quarter of 2014. There have been no exceedances since 2014.</p> <p>4. As of December 31, 2016, there are 722 water service connections within the District service area and 648 are active.</p> <p>5. The Volta Community Services District (Volta CSD) is not represented by the District. The District should not convey information to the public concerning the Volta CSD without written, expressed approval from the Volta CSD. The District does not have this permission.</p> <p>Members of the Board of Directors are not representatives of the District in public meetings, public hearings, speaking engagements, or other functions of this nature unless appointed by a majority of the Board of Directors. At this time, no Director is appointed to represent the District outside of the District board meetings. The District representative is the General Manager and any comments made to the public should contain verifiable information and be presented by the General Manager. The Board of Directors have been advised of this policy.</p> <p>It is my intent to ensure that accurate facts concerning the District are presented to the public and therefore, I request that this document be incorporated into the record to ensure the public is receiving correct information.</p>	
1233	1	<p>I'm writing to express the grave concerns with the State Water Resources Control Board's proposed actions on behalf of the City of Merced and our 82,000 residents in the Central Valley. It is imperative to us that our distress over your proposal is included in the official record on the Draft Revised Substitute Environmental Document (SED). We urge you once more to heed the requests of the numerous cities, school districts, and concerned residents</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>

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		<p>who have voiced their opposition to the Bay-Delta Plan.</p> <p>In an area that is largely dependent on agriculture, a proposal that increases the unimpaired flows of the Merced, Stanislaus, and Tuolumne rivers by 40% would devastate a region that has only just now begun to heal from five years of drought. The public hearings held in Merced and Modesto this past December provided ample evidence that local stakeholders have been left out of a process that will severely impact every aspect of their lives. Safe and reliable access to drinking water, our economic vitality, and our very way of life would be jeopardized by your proposed plan.</p>	
1233	2	<p>Given the serious implications of your proposal, there should have been a credible effort to involve us throughout the development phase, but this simply didn't happen. By allowing stakeholders to comment on the plan only after it was released, you have excluded our region from providing valuable local knowledge that could have been used by your scientists and technical experts to create a plan that appropriately balances the competing priorities under your consideration.</p>	<p>Please see Master Response 1.1, General Comments, for responses regarding the public outreach process and the release of the Draft 2016 Revised SED based on refinements and changes made as a result of the 2012-2013 comment period on the Draft SED.</p>
1233	3	<p>To us, "significant, but unavoidable" is more than a term of art--it is a tangible threat and a clear statement of willful disregard for our safety, sustainability, and livelihoods. By failing to include our region in the development process, you have marginalized a community that already suffers from economic challenges and is home to many minority and disadvantage communities. Simply put: we deserve better. I urge you to give consideration to the voices of our community and revise the current plan to reflect the needs of all the parties involved.</p>	<p>As described in Master Response 2.7, Disadvantaged Communities, the concerns of disadvantaged communities (DACs) and environmental justice issues are important to the State Water Board. The plan amendments in no way discriminate against people on the basis of race, culture or income.</p> <p>Consideration of DACs) is provided in Chapter 22, Integrated Discussion of Potential Municipal and Domestic Water Supply Management Options.</p> <p>Please see Master Response 2.7, Disadvantaged Communities, regarding the plan amendments as they relate to DACs, consideration of DACs in the SED, and the State Water Board's technical and financial assistance programs for DACs.</p> <p>The State Water Board values the voices of the communities in the plan area and had a series of public outreach events to hear the public's concerns and comments on the plan amendment process and the SED. Please see Master Response 1.1, General Comments, for detailed discussion regarding the adequacy of the public outreach conducted by the State Water Board.</p>
1234	1	<p>My Clients in the agriculture industry have been in the farming business for many decades and have followed in the footsteps of their parents and grandparents, working tirelessly to create stable farming operations that have the ability to provide quality crops for many generations to come. My Clients grow a variety of crops including, but not limited to, grapes, almonds, walnuts, and feed for their dairy cows. They have consciously chosen to remain in the Valley because agriculture is the foundation of our economy and they want to carry on the family traditions and solid business values instilled in them by previous generations. For decades, my Clients have worked to improve their farming operations in innovative ways to make them more efficient and economical for the benefit of their employees, the environment and the community as a whole.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that do not raise significant environmental issues or make a general comment regarding the plan amendments and general information regarding the economic analysis.</p>

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		<p>Without question, my Clients care about the environment. They believe solid planning and good stewardship of our precious resources, including water, are necessary to protect the environment and provide for sustainable agriculture in the Valley. Implementation of the SED as currently drafted will have devastating effects on the ability of my Clients to continue to do business in this community and support their families.</p>	
1234	2	<p>An increase in flows of the magnitude currently proposed will have effects that go beyond just those businesses that are actively engaged in agriculture- it will destabilize our economy as a whole. Reducing the water supply as currently proposed will force many of my Clients to reduce their operations, leading to not only the loss of crops, but also the loss of employees. Without jobs, many of my Clients' employees will not be able to support their families and they will be forced to rely upon governmental resources for survival. My Clients and their employees are hard-working, productive citizens, whose lives will be dramatically altered for the worse if the SED is implemented in its current form.</p> <p>Among other consequences, uncertainty regarding water supplies will lead to reduced property values and loss in property tax revenue. Such revenue losses will make it more difficult for our Cities and Districts to supply our citizens with essential services.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that do not raise significant environmental issues or make a general comment regarding the plan amendments and general information regarding the economic analysis.</p> <p>Potential regional economic and employment effects are presented in Appendix G, Agricultural Economic Effects of the Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results, Chapter 20, Economic Analyses, and Master Response 8.2, Regional Agricultural Economic Effects.</p> <p>Please see Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model, regarding the long term economic effects of changes in water supply availability and property values.</p>
1234	3	<p>Cities in this area largely rely on groundwater for drinking water. It is unclear how our Cities will be able to supply quality drinking water to residents, as the proposed flow increases will lead to an increase in groundwater pumping, increase in the risk of reduced water quality, and reduced potential for groundwater recharge. Given the fact that the SED will result in significant increases in groundwater pumping, yet the SED does not take into account the effects of SGMA, we strongly urge reconsideration of the SED.</p>	<p>Please see Master Response 3.6, Service Providers, for discussions regarding municipal water supply, groundwater resources and service providers, and local resiliency and drinking water quality.</p> <p>Please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, regarding SED consideration of SGMA, potential increased in groundwater pumping, and groundwater recharge.</p>
1234	4	<p>We understand that Modesto Irrigation District and Turlock Irrigation District have invested more than \$25 million to develop scientifically supported non-flow solutions. We implore you to examine their findings in comparison to the speculative and negligible results anticipated from the current version of the SED.</p>	<p>Please see Master Response 5.2, Incorporation of Non-Flow Measures, for information regarding the role of non-flow measures and consideration of non-flow measures in the plan amendments.</p>
1234	5	<p>My Clients are in favor of reasonable solutions that restore the Delta without compromising the future of our businesses and our communities. In the absence of a revised plan that includes non-flow measures and mitigation of the economic impacts for our area, I will urge my Clients to take all necessary action, including legal action, to protect their interests.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that do not raise significant environmental issues or that make a general comment regarding the plan amendments including comments that are generally in support or opposition to the plan amendments.</p>
1235	1	<p>THE SED DOES NOT IDENTIFY A NEEDED BENEFICIAL USE.</p> <p>The water quality objective being proposed include a narrative objective that requires: “the maintenance of flows sufficient to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta”. The unimpaired flow proposal is intended to implement this Narrative Objective. However, the SED itself (Table 19-32) indicates that approximately 11,373 Central Valley Fall-Run Chinook</p>	<p>The comment is not correct. The SED Executive Summary, Chapter 1, and Chapter 3, identify beneficial uses for which the LSJR flow objectives are intended to protect and clearly establish that existing flows do not protect fish and wildlife beneficial uses. It is well recognized in current scientific literature that salmonid populations in the Central Valley are in a state of decline. Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, provides a description of the population trends for fall-run Chinook salmon and Central Valley steelhead. The SED establishes that the Bay-Delta watershed is in ecological crisis and specifically identifies the lower San Joaquin River watershed as showing the largest reductions in fall-run Chinook salmon, “ “The Stanislaus, Tuolumne, and Merced Rivers (individually or combined) have had larger reductions in the natural production and returns from the</p>

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		<p>Salmon are produced annually on the three tributaries. There is no indication in the SED that the current flow regimes on the tributaries would not “support and maintain” that population. The SED seems to conclude that if the base case is continued with no changes to the system, there will continue to be 11,373 Central Valley Fall-Run Chinook Salmon annually; therefore, the current flow regimes would maintain this productivity as required by the Narrative Objective. It appears that despite the wording of the Narrative Objective, the unimpaired flow proposal is actually intended to improve, not support and maintain production on the tributaries.</p> <p>This was emphasized by one of the Peer Reviews of the 2010 Technical Review, who took issue with the conclusion in the report’s conclusion “... since 1952, the average escapement of fall-run Chinook salmon has shown a steady decline.” The peer review stated: “This statement is contradicted by the figure (3.5) associated with it. There is no obvious trend downward but rather there are a series of pronounced peaks (a pair of peaks around 1954 and 1960, then discrete ones around 1970, 1985, and 2003). Each of the peaks lasted about 8 years, with distinct ‘troughs’ in between. I think the conclusion that this was a ‘steady decline’ is not supported”. This peer review comment has not been addressed.</p> <p>The unimpaired flow proposal, therefore, is not required to meet the Narrative Objective, and would therefore appear to be an unreasonable use of water.</p>	<p>ocean of adult fall-run Chinook salmon than any of the other tributaries (or combination of tributaries) to the Sacramento River or SJR when comparing the 1967–1991 and 1992–2010 time periods.” And, “Nearly every feature of habitat that affects native fish and wildlife is, to some extent, determined by flow (e.g., temperature, water chemistry, physical habitat complexity). These habitat features, in turn, affect risk of disease, risk of predation, reproductive success, growth, smoltification, migration, feeding behavior, and other physiological, behavioral, and ecological factors that determine the viability of native fish.” SED Chapter 7, Aquatic Biological Resources, also establishes that existing flows do not protect fish and wildlife beneficial uses. Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, provides a problem statement of fish decline based on scientific evidence that indicates reductions in flows and alterations to the flow regime in the LSJR basin have negatively impacted fish and wildlife beneficial uses. Please refer to Master Response 3.1, Fish Protection, for more information regarding current fish declines and the need for increased flow. It is thus inaccurate to say that flow is not needed to meet the narrative objective, which sets forth the desired biological conditions in the LSJR and the three eastside tributaries that have yet to be achieved.</p> <p>Development of the 2010 Delta Flow Criteria report was an entirely separate process that is unrelated to the Water Quality Control Plan update: the 2010 Delta Flow Criteria Report was a unique product that was developed in response to water reform legislation. Please refer to Master Response 1.2, Water Quality Control Planning Process, and Master Response 3.1, Fish Protection, for more information regarding the Delta Flow Criteria Report.</p> <p>Please also refer Master Response 1.2, Water Quality Control Planning Process, for responses to comments regarding consideration of beneficial uses and reasonable use of water.</p>
1235	2	<p>ONLY PART OF THE SAN JOAQUIN RIVER IS BEING CONSIDERED.</p> <p>The Plan purportedly involve changes in flow objectives in the San Joaquin River (“SJR”) basin. As depicted in Figure ES-1, the SJR basin includes numerous watersheds and reservoirs, including the Friant Dam and the main stem of the river. The flow objectives included in the Plan and evaluated in the SED are based upon an August 2010 technical report on the Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem (“2010 Flow Criteria Report”). The 2010 Flow Criteria Report “concluded that 60 percent of flow should be left in the Lower San Joaquin River for the benefit of fish.” That analysis included the entire SJR. The importance of including the entire river is evident when you look at the historic percentage contribution of flow on the river.</p> <p>Yet, the Plan would impose the unimpaired flow obligation on only the three main tributaries -- completely ignoring the historical 30% contribution from the main stem. There has been no analysis of changing the parameters established in the Flow Criteria Report -- a percentage contribution from the entire watershed, to imposing unimpaired flow requirements only upon part of the river. Such a change cannot be supported without that analysis.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the exclusion of the Upper San Joaquin River from the plan amendments and the 2010 Flow Criteria Report’s recommendations. The flow objectives are not based on the 2010 Flow Criteria Report, but rather the report contained in Appendix C,</p> <p>Technical Report On The Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives. Please refer to Master Response 1.2, Water Quality Control Planning Process, for the relationship of the Delta Flow Criteria Report and the plan amendments.</p>

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		<p>Staff indicates that only the three tributaries are being included because they are the only salmon bearing rivers, and because Friant has already contributed through the San Joaquin River Restoration Plan settlement. Neither of these excuses support exclusion: first -- the flows anticipated by the settlement have not materialized. Friant is not contributing its fair share, and further, the criteria should be whether or not the stretch of the river is attaining its share of what this plan is requiring -- is it meeting the 30 to 50% proposal?</p>	
1235	3	<p>[ATT1:]</p> <p>Table 2-8. Median Annual Percent Contribution of Unimpaired Flow and Observed Flow by SJR Tributary and Upper SJR to Flow at Vernalis (1984 - 2009)</p> <p>From Appendix C -- Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, February 2012 (Updated June 2016)</p>	<p>This attachment was included with the comment letter. The attachment does not make a general comment regarding the plan amendments or raise a significant environmental issue.</p>
1235	4	<p>THE GEOGRAPHIC SCOPE OR PLAN AREA OF THE PROPOSED PLAN IS ARBITRARY.</p> <p>The stated goal of the Plan is to “Maintain inflow conditions from the San Joaquin River (SJR) Watershed sufficient to support and maintain the natural production of viable native fish populations migrating through the Delta.” [SED pg. 3-2] Yet, rather than include the entire watershed in the Project, the State Water Board defines the Project area as only “the portion of the SJR between its confluence with the Merced River and downstream to Vernalis,” a segment of the SJR that receives flow from only three of the river’s numerous tributaries.</p> <p>The Board provides a weak rationale for a Plan Area excluding the Upper SJR:</p> <p>The State Water Board identified the geographic scope of the plan amendments to protect the existing fishery in the [Lower] SJR (LSJR) Watershed--the three eastside salmon-bearing tributaries--because that portion of the watershed supports an existing fishery that can be maintained and improved. The State Water Board will consider additional measures in future Bay-Delta Plan updates to protect beneficial uses in other areas, such as the Upper SJR, when those areas are restored and can support a fishery. [SED pg. 3-4]</p> <p>This statement only reinforces the need to include the upper river in the Plan. Most importantly, it will be impossible to support the existing fishery on the three eastside tributaries without the historic flows of the entire SJR, as those fish utilize the entire SJR for most of their life stages.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the geographic scope of the plan amendments and the exclusion of the Upper San Joaquin River from the plan amendments. The SED evaluates the whole of the plan amendments that may result in physical impacts to the environment in accordance with CEQA. (Cal. Code Regs., tit. 14, § 15378, subd. (a).) The State Water Board has not piecemealed environmental review related to the Upper San Joaquin River because future Board action in this area remains uncertain. The Board always has the prerogative to make future changes to the Bay-Delta Plan, but no commitments have been made regarding the Upper San Joaquin River other than to continue to evaluate the progress of the San Joaquin River Restoration Project, which is intended to restore and maintain fish populations.</p>

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		<p>Further, the State Water Board makes unsupported and largely nonsensical statements to support its failure to include flows from the Upper SJR:</p> <p>Though these goals do not explicitly preclude consideration of alternative flow objectives upstream of the Merced River confluence, that area does not currently support viable native fish populations, and such alternatives would not reduce or avoid impacts. For example, such an alternative would not reduce the quantity of water needed from the Stanislaus, Tuolumne, and Merced Rivers to achieve the goals. Inclusion of the flow alternatives for the SJR upstream of the Merced River confluence would increase the adverse environmental effects of the LSJR alternatives in a larger geographic area by reducing the quantity of water available for other uses in areas that rely upon water supplies in the SJR upstream of Merced River confluence. For this reason, alternatives that considered establishing flow objectives in geographic areas other than the LSJR Watershed and the Stanislaus, Tuolumne, and Merced Rivers, were eliminated from further consideration. [SED pg. 3-5]</p> <p>Frankly, it appears that the Board simply chose three tributaries of the SJR, and then drew a line around the rim reservoirs on those without any support or explanation. The arbitrary designation of the plan area violates due process rights and water priority rules, and, because certain portions of the watershed are excluded, violates the California Environmental Quality Act prohibition against piecemealing.</p>	
1235	5	<p>Limiting the geographic scope of the Plan Area Violates the Rules of Water Right Priority.</p> <p>Water right priority is one of the central principles of California water law. El Dorado Irr. Dist. v. State Water Resources Control Bd. (2006) 142 Cal.App.4th 937, 938. The rules of water right priority requires curtailment of all junior use prior to reducing senior water rights. (Id. at 963-964.) The Plan’s limited geographic scope violates the rules of water right priority. The SED assumes, without adequate justification, that the water right holders within the Plan Area will exclusively be responsible for meeting the LSJR Flow Objectives. However, there are water right holders upstream of the rim reservoirs, on the tributaries of the western San Joaquin watershed, and in the upper San Joaquin, that are junior to water right holders included within the Plan Area. The proposed Project requires, without legal basis, that the senior water right holders within the Plan Area will contribute to flows to meet the flow objectives before junior water right holders outside the Plan Area. This violates California’s water right priority system. The Board is obligated to protect water right priorities; its failure to do so by limiting the scope of the Plan Area directly contravenes this obligation, and violates the law.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments claiming that the proposed plan amendments violate the water right priority system.</p>
1235	6	<p>The limited geographic scope of the Plan Area for the LSJR Flow Objective excludes the contribution of water upstream of the rim reservoirs on the San Joaquin tributaries, the west side of the San Joaquin River, and on the upper San Joaquin River. The explanation for excluding these areas and their corresponding water contributions is inadequate and not</p>	<p>The SED does consider contributions from upstream the rim reservoirs. The plan amendments are based on a percent of unimpaired flow from the three eastside tributaries (i.e., Stanislaus, Tuolumne, and Merced). The percent of unimpaired flow is defined as: the water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds. It differs from natural flow because unimpaired flow is the flow that occurs at a specific location under the current configuration of</p>

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		<p>legally supported.</p> <p>a. Contribution from Upstream of Rim Reservoirs. The SED does not consider contributions from reservoir operation and water supply upstream of the rim reservoirs on the Stanislaus, Tuolumne and Merced Rivers, and fails to explain why the State Water Board reached the conclusion that these operations and diversions are not important. The SED does not evaluate respective water right priority, nor describe the amount of water diverted. Without this information and analysis, the State Water Board’s conclusion that upstream contributions will not be considered is unsupported by reason or analysis.</p> <p>b. Contribution from the Upper San Joaquin River. The Plan fails to include the Upper San Joaquin River, both below and above Friant Dam, despite the fact that the Upper SJR represents approximately 28% of the unimpaired annual flow of the SJR. The Board’s rationale to exclude the Upper SJR is insufficient, and forcing the senior water right holders on the lower San Joaquin River to meet the fishery beneficial uses for the entire river without contribution from the junior water right holders on the Upper SJR violates water right priorities in an egregious manner.</p> <p>c. West Side Contribution. The SED fails to discuss and analyze contributions to the SJR from return flows from land to the west of the river. The SED fails to adequately identify the quantity and quality of water contribution from the west side in its baseline.</p>	<p>channels, levees, floodplains, wetlands, deforestation, and urbanization. As such, it would include the flow from the tributaries above the rim dams that is captured at the rim dams and then released to meet the unimpaired flow requirement.</p> <p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the exclusion of the Upper San Joaquin River from the plan amendments and for information on west side contributions. As described in Chapter 5, Water Resources, implementation of the San Joaquin River Restoration Program flows is not part of the alternatives described in Chapter 3, Alternatives Description. The State Water Board expects the SJR Restoration Program would increase the existing SJR flows at Stevinson (the existing flows are currently simulated in CALSIM).</p> <p>The SED addresses water quality and quantity from the west side of the San Joaquin Valley in Chapter 5, Surface Water Hydrology and Water Quality. The WSE Model spreadsheet file, tab “SJR_Flow (Final)” shows that west side return flows, diversions, and inflows from the west side of the San Joaquin Valley are included in WSE calculations and therefore in the analysis of baseline and alternatives. Please refer to Master Response 3.2, Surface Water Analyses and Modeling for further discussion of the water balance modeling in the SED.</p>
1235	7	<p>The SED Provides No Evidence that the Plan will Protect Fish and Wildlife Beneficial Uses.</p> <p>The 2010 Flow Criteria Report suggested that 60% of unimpaired inflow from the SJR from February-June would preserve the attributes of a natural variable system to which native fish species are adapted. Unlike the Plan, however, the flow recommendation in the 2010 Flow Criteria Report included the entire San Joaquin River, not merely a portion of it. The SED does not discuss this change, and does not demonstrate or even suggest that the same water quality objectives could be met by using the suggested flows in a portion, rather than the entire river; therefore, there is no demonstrated rational connection between the conclusions in the 2010 Flow Criteria Report and the Plan that proposes to rely exclusively on three of the river’s tributaries to meet the same goals.</p> <p>Logic would lead to a conclusion that it would be impossible to mimic the magnitude, duration, and timing of historic flows if one-third of the contribution to the magnitude, duration and timing of the historic flows is excluded from the analysis. The SED provides no information to the contrary. The Plan’s failure to include the Upper SJR is contrary to the state purpose of the Plan. The SED does not explain how relying exclusively on the Lower SJR will affect the analysis of unimpaired flow or protection of fish and wildlife. The SED also fails to provide sufficient explanation for excluding the Upper San Joaquin River from the</p>	<p>The commenter is incorrect regarding the scientific basis of the plan amendments and supporting environmental document. The SED provides sufficient information documenting substantial improvements in fish habitat and potential for improved protection for fish and wildlife beneficial uses. Please see response to comment 1245-1 regarding the Delta Flow Criteria Report and scientific basis for the plan amendments, including the unimpaired flow approach.</p> <p>Additionally, the 2010 Delta Flow Criteria Report did not take into account beneficial uses other than fish and wildlife. Please refer to Master Response 3.1, Fish Protection, for more information. Please also refer Master Response 1.2, Water Quality Control Planning Process, for responses to comments regarding consideration of other beneficial uses during development of the plan amendments.</p> <p>In the SED, the State Water Board provided the scientific justification that increased and more natural, variable flows are needed to protect fish and wildlife beneficial uses. Furthermore, in order to achieve a more natural flow pattern, a percentage of unimpaired flow from each of the salmon-bearing tributaries should be provided in the February through June time frame. The scientific basis to support these assertions is described in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Standards, and in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30. Please refer to Master Response 3.1, Fish Protection, for more information on justification of the plan amendments and analyses to support evaluation of the LSJR</p>

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		Plan area. For the foregoing, the SED and proposed Plan are legally deficient.	<p>alternatives.</p> <p>The Upper San Joaquin River is beyond the geographic scope of the plan amendments. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, for more information.</p>
1235	8	<p>THE NATURAL HYDROGRAPH FALACY.</p> <p>Board staff has stated that the benefits of the unimpaired flow proposal is to “restore the pattern and some limited magnitude of flow that are more closely aligned to the conditions to which native fish species are adapted.” The 2010 Flow Criteria Report on which the SED is based emphasized the importance of a natural flow regime -- noting “it is important to preserve the general attributes of the natural hydrograph to which the various salmon runs adapted to over time, including variations in flows and continuity of flows”. To “mimic the natural hydrograph during the peak emigration period of February through June”.</p> <p>Peer reviewers of the 2010 Flow Criteria Report emphasized that: “. . . a more natural flow regime is necessary if the fish are to recover. Indeed, I would further conclude that the other stressors such as contaminants and non-native fishes will be less consequential for salmon and steelhead in a more natural flow and thermal regime, so the benefits of flow enhancement will likely be both direct and indirect”. Despite the statements in the SED and the Peer review emphasis on the importance of natural flow regime, the proposed alternative would not actually implement a natural flow regime because the program of implementation instead includes:</p> <ul style="list-style-type: none"> a. “Optimized flow shaping” to improve temperature b. Flow shifting to fall c. Carryover storage guidelines d. End of September guideline e. Percent drawdown from storage f. Minimum district diversion during dry conditions g. Drought refill constraints <p>There has been no analysis of these changes, and no discussion of the impact of these manipulations in flow and timing. Such flow shaping moves away from a natural flow regime and more towards a steady state, which has created the conditions with which we are now</p>	<p>Please see Master Response 2.2, Adaptive Implementation, for response to comments regarding unimpaired flow, the natural hydrography, and flow shaping and shifting. The adaptive implementation provisions of the flow proposal do not discard the concept of mimicking the hydrograph. The proposed flow objectives both increase flows to mimic the natural hydrograph and allow for enhancement of flow benefits by shaping and shifting flows. Even with flow shaping and shifting, flows will be higher and more closely mimic natural hydrograph than under baseline. Master Response 2.2, Adaptive Implementation, provides more explanation regarding how adaptive implementation can be implemented and examples of how flow shaping and shifting can be used both to enhance the beneficial characteristics of the natural flow regime (by achieving short duration flows higher than 30 to 50 percent of unimpaired flow), and also provide functional flows.</p> <p>Master Response 2.2, Adaptive Implementation, and Master Response 3.2, Surface Water Analyses and Modeling also discuss how adaptive implementation was analyzed in the SED. The SED analyzed LSJR flow alternatives that include adaptive methods. The commenter is incorrect about analyzing these changes, disclosing impacts, and discussion regarding flow and timing in the SED. Please refer to SED Chapter 7, Aquatic Biological Resources, for the LSJR flow objective impact analysis and comparison among alternatives. Please refer to all impact categories and determinations. Please refer to SED Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, for information regarding benefits to fish that result from LSJR plan amendments.</p>

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		faced that are optimal for predation.	
1235	9	<p>THE BOARD MUST ADOPT A PLAN THAT REASONABLY PROTECTS BENEFICIAL USES.</p> <p>The Board has a statutory commitment to establish flow objectives assuring the “reasonable protection of beneficial uses.” United States v. State Water Resources Control Bd. (1986) 182 Cal. App. 3d 82, hereinafter “Racanelli”, citing Water Code § 13241. The Racanelli court notes that it is the Board’s obligation to attain the highest reasonable water quality “considering all demands being made on those waters.” Id. at 116, citing Water Code § 13000. In performing its role in developing water quality objectives, the Board is required to consider all competing demands for water in determining a reasonable level of water quality protection. Id. at 118; Water Code § 13000.</p> <p>The Plan does not achieve the reasonable protection of beneficial uses. The SED impact evaluation suggests that impact to water users will be minimal because reduction in available surface water will be replaced with groundwater pumping. There is actually no evaluation of the impacts to agriculture production in the Plan Area. In the Chapter 11--Agricultural Resources it asserts no impact to agriculture because the lack of surface water will be mitigated through groundwater substitution. While noting that groundwater pumping in most of these area is already unsustainable, the SED fails to evaluate the impact of Sustainable Groundwater Management Act (“SGMA”) on this increased and continued unsustainable use of groundwater. Reductions in pumping that will be imposed by SGMA are not even considered in the SED.</p> <p>The SED does not demonstrate how the proposed project will protect fish and wildlife beneficial uses, nor does the SED support the Board’s presumption that 30-50% unimpaired flow will provide benefit to fish and wildlife. The SED simply assumes that 30-50% unimpaired flow will increase fish populations--an assumption that does not satisfy the requirements of Water Code section 13241. If the Board has scientific evidence that demonstrates the proposed flows will benefit fish and wildlife, then the Board is required to include that evidence in the SED; instead, the Board relies exclusively upon the 2010 Flow Criteria Report as supporting its flow standards. Such reliance is neither appropriate nor sufficient for several reasons:</p> <p>* As mentioned above, the 2010 Flow Criteria Report suggested that 60% of the unimpaired flow of the entire SJR would provide benefit to fish and wildlife. The SED does not propose to require 60% of the unimpaired flow of the entire river, and yet arbitrarily concludes that requiring 30-50% flows from a portion of the river would achieve the same results.</p> <p>* As recognized by the Board when it adopted the 2010 Flow Criteria Report, the report suggests the flows that would be needed in the Delta ecosystem if fishery protection was</p>	<p>The comment is incorrect. Please see Master Response 1.1, General Comments, and Master Response 1.2, Water Quality Control Planning Process, for information on the State Water Board’s consideration of beneficial uses. The SED evaluates the impact to groundwater in SED Chapter 9, Groundwater Resources, and impacts to agriculture in SED Chapter 11, Agricultural Resources. Please refer Master Response 3.4, Sustainable Groundwater Management Act Water Quality Control Planning Process, for responses to comments groundwater pumping and SGMA. The SED and plan amendments do not require or encourage increased groundwater pumping. The SED analyses reflect that the historical local response to reduced surface water availability has been to choose to increase groundwater pumping; therefore, the SED analyzed this reasonably foreseeable action. The SED does not assume that all reductions in surface water supplies can be met with increased groundwater pumping. Rather, if local water users choose to replace reduced surface water with groundwater, maximum groundwater pumping could reach the levels associated with 2009 and 2014 infrastructure.</p> <p>SGMA was passed by the Legislature in 2014 to address overdraft issues and associated negative impacts to groundwater basins from over extraction. SGMA requires local public agencies in the plan area form groundwater sustainability agencies (GSAs) by June 30, 2017 and draft groundwater sustainability plans (GSPs) by 2020 for critically overdrafted basins and 2022 for all other basins. GSAs have 20 years to implement GSPs and achieve sustainability. GSAs are now formed in the plan area, but GSPs have yet to be drafted or implemented. The State Water Board acknowledges reaching sustainability in these overdrafted basins will be challenging, but the plan amendments do not conflict with SGMA. Instead, knowledge of the plan amendments during the GSP drafting phase allows for integrated planning of scarce water resources that does not trade impacts between surface and groundwater.</p> <p>SGMA was not included in the baseline or in the alternative analysis, because as noted above, SGMA plans are not yet written and groundwater sustainability could be implemented through projects and programs in a number of ways. For example, groundwater sustainability agencies could implement projects to increase recharge in wet years and programs to decrease groundwater extraction through conservation and other means. Therefore, any future-condition baseline “with SGMA” is purely speculative. However, SGMA was properly included in the analyses as an existing legal requirement to prevent further degradation of the groundwater basins and as a potential cumulative limit on future irrigation supplies (Chapter 9, Groundwater Resources, Section 9.4.3, Impacts and Mitigation Measures; Chapter 22, Section 22.4.1, Potential Impacts of LSJR Alternatives).</p> <p>Please see responses to comments 1235-1 and 1235-7 regarding the scientific basis of and the geographic scope of the plan amendments. Please refer to SED Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, for information regarding benefits to fish that result from LSJR plan amendments.</p> <p>Additionally, please refer to Master Response 1.2, Water Quality Control Plan Process, for information regarding State Water Board authorities including a description of compliance with California Water Code</p>

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		<p>the sole purpose for which its waters were put to beneficial use. The State Water Board recognized that many other factors must be considered before flow objectives could be adopted. However, the Plan appears to randomly select numbers from the 2010 Flow Criteria Report, and then compare them to a faulty evaluation of potential impacts to other beneficial uses.</p> <p>* At no time does the SED evaluate the specific benefit to fishery from a 30% or 50% flow, and compare that demonstrated benefit to the potential impact to other beneficial uses. Such balancing is required to legally update the Plan.</p>	<p>Section 13241.</p>
1235	10	<p>THE PROPOSED UNIMPAIRED FLOW OBJECTIVES EXCEED THE STATE WATER BOARD'S JURISDICTION TO PROTECT "BENEFICIAL USES," AND IS ARBITRARY, CAPRICIOUS, AND LACKING IN EVIDENTIARY SUPPORT.</p> <p>The State Water Board is required to balance several factors identified in Water Code §13241 when developing water quality objectives, including:</p> <ul style="list-style-type: none"> (a) Past, present, and probable future beneficial uses of water. (b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto. (c) Water quality conditions that could reasonably be achieved through the coordinated control factors which affect water quality in the area. (d) Economic considerations. (e) The need for developing housing within the region. (f) The need to develop and use recycled water. <p>All of these factors must be identified and the Board must thereafter demonstrate a rational connection between those factors and the proposed regulation. <i>Racanelli</i>, at 182; <i>California Hotel & Motel Assn. v. Industrial Welfare Com.</i> (1979) 25 Cal.3d 200, 212. The SED discloses that the Board has failed to adequately consider these factors, and the Plan does not demonstrate a rational connection, or nexus, between the factors and the proposed flow objectives for the Lower SJR.</p>	<p>Please refer Master Response 1.2, Water Quality Control Planning Process, for responses to comments regarding consideration of beneficial uses, reasonable use of water, and the 13241 factors. Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding justification of the plan amendments.</p>
1235	11	<p>The SED Does Not Confirm that the Plan Would Reasonably Protect All Beneficial Uses.</p> <p>In order to increase water dedicated to fish and wildlife beneficial uses the Plan decreases beneficial uses of water for agriculture, domestic, municipal and industrial uses. Before taking this action, the Board is legally required to determine whether the proposed flow</p>	<p>Please see Master Response 1.1, General Comments, and Master Response 1.2, Water Quality Control Planning Process, for a discussion of the water quality control planning processing, including the State Water Board's consideration of beneficial uses. The SED evaluates the environmental impacts of the LSJR alternatives, including the 30 to 50 percent unimpaired flow alternative (LSJR Alternative 3), as envisioned in the 2010 Flow Criteria Report. The SED also includes, in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, an analysis of the benefits to native fish</p>

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		<p>objectives provide reasonable protection of all beneficial uses. This determination requires the State Water Board to weigh and balance all beneficial uses and then demonstrate a rational, causal connection and nexus between the Project and the benefit to fish and wildlife beneficial use. The SED fails to include such an analysis. The Board acknowledged this requirement when it adopted the 2010 Flow Criteria Report, stating: “The State Water Board’s evaluation will include an analysis of the effect of any changed flow objectives on the environment in the watersheds in which Delta flows originate, the Delta, and the areas in which Delta water is used.” 2010 Flow Criteria Report at p. 3. Nowhere in the SED does the Board undertake such an analysis of the 30-50% proposed flow criteria.</p>	<p>populations from increased flows, including providing 30 to 50 Percent unimpaired flows, between February 1 and June 30. For additional clarifying discussion regarding the flow needs related to salmonids, please see Master Response 3.1, Fish Protection. Please also see Master Responses 1.2 and 3.1 for information regarding the Delta Flow Criteria Report and how it relates to the plan amendments.</p>
1235	12	<p>The Plan Of Implementation For Carryover Storage Is Also Not Supported By Substantial Evidence.</p> <p>In order to adequately satisfy the balancing requirement for beneficial uses, the SED must understand and demonstrate the level of protection or extent of the benefit the Plan will provide to fish and wildlife. This level of protection must then be weighed against the adverse impacts to all other beneficial uses, including agriculture, hydropower, municipal use, etc. that the proposed Plan will adversely impact. This essential balancing of competing interests is fundamental to the development of water quality objectives. The proposed flow objectives would drain most of the reservoirs in the SJR basin, resulting in no water available for fish and wildlife, or any other beneficial uses in following years. In an attempt to prevent such a catastrophe, the Board proposes in its plan of implementation a requirement for minimum carry-over storage in the three tributary reservoirs. Such requirements drastically change operations of the reservoirs in the SJR basin, as well as drastically reducing the quantity of water available for beneficial uses. Despite this, the SED does not include any analysis of the potential impacts or benefits of this proposed action. Because the SED fails to include this analysis, the carryover storage requirements are not supported by substantial evidence and cannot be approved by the Board as part of the plan of implementation.</p>	<p>Please see Master Response 1.1, General Comments regarding the programmatic scope of the SED, use of best available science, and how the substantial evidence standard does not apply to the State Water board’s quasi-legislative action to amend the Bay-delta Plan. Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board implementation of the LSJR flow requirements through independent water rights proceedings, and State Water Board consideration of beneficial uses in the context of the water quality control planning process. Please see Master Response 2.1, Amendments to the Water Quality Control Plan for clarification on the LSJR Flow Program of Implementation, including carryover storage. Please see Master Response 3.2, Surface Water Analyses and Modeling, for information on the carryover storage assumptions used in the WSE model. Carryover storage parameters are included in the WSE model which estimates surface water supply effects for deliveries and river flows. Please refer to SED Chapters 5, 7, 9, 11, 13, 19, and Appendix F.1.</p>
1235	13	<p>REQUIRING THE BYPASS OF 30-60 PERCENT OF UNIMPAIRED FLOW WITHOUT DOCUMENTED BENEFITS TO FISH AND WILDLIFE IS AN UNREASONABLE USE OF WATER.</p> <p>Article X, Section 2 of the California Constitution prohibits the “waste or unreasonable method of use or unreasonable method of diversion of water.” The Board is required to “take all appropriate proceedings or actions before executive, legislative, or judicial agencies to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion in this state.” Water Code § 275; 23 CCR § 764. Besides preventing the unreasonable use of water, the Board is prohibited from compelling the unreasonable use of water. State Water Board Cases, at 762; Baldwin v. County of Tehama (1994) 31 Cal.App. 4th 166, 183. Whether a use is “reasonable” is a question of fact to be determined by the facts and circumstances of each case. Joslin v. Marin Municipal Water Dist. (1967) 67 Cal.2d 132, 139; Environmental Defense Fund, Inc. v. East Bay Mun. Utility Dist. (1980) 26 Cal.3d 183, 194; Jordan v. City of Santa Barbara (1996) 46 Cal.App.4th 1245, 1268. To determine whether any particular use is “reasonable,” the Board must evaluate: (a) the quantity of water needed for the beneficial use served (City of Barstow v. Mojave Water Agency (2000) 23 Cal.4th 1224, 1241); (b) a comparison of other potential uses (Imperial Irrigation Dist. v. State Water Resources Control Bd. (1990) 225 Cal.App.3d 548, 570-571); and (c) local</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding the authorities of the State Water Board as part of the water quality control planning process, including discussions on public trust resources and Article X, Section 2 of the California Constitution. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding a description of the plan amendments and the justification to reasonably protect the beneficial use of fish and wildlife. The State Water Board provides various descriptions of the expected benefits of the plan amendments throughout the SED. For example, please see Master Response 3.1, Fish Protection, regarding the scientific basis for the plan amendments and the expected benefits associated with the plan amendments. In addition, please see Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, Section 19.2.3, Results of Temperature Evaluation, for comparisons of modeled water temperature results under baseline and 30, 40 and 50 percent unimpaired flow as they relate to adult migration, reproduction, and late summer rearing. Similarly, please see Section 19.3.3, Results of Floodplain Inundation Evaluation, for information regarding the frequency of floodplain inundation events under 30, 40, and 50 percent unimpaired flow on the three eastside tributaries. The plan amendments will reasonably protect fish and wildlife beneficial uses as demonstrated in the SED and as such are not an unreasonable use of water.</p>

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		<p>environmental conditions (Tulare Irr. Dist. v. Lindsay-Strathmore Irr. Dist. (1935) 3 Cal.2d 489, 567), among others.</p> <p>The SED does not even attempt to estimate or analyze the level of benefit the proposed Plan will provide to viable fish populations. In addition, no scientific or other evidence supports the assumption that the proposed flow objectives alone will provide reasonable protection to fish. Conversely, even though the impacts to agriculture and other consumptive beneficial uses are drastically underestimated in the SED, the SED nevertheless demonstrates adverse impacts. When unsupported benefits to fish and wildlife are compared to documented adverse impacts to agriculture, it becomes clear that the contribution of the recommended 30-60% unimpaired flow to fish and wildlife is unreasonable. Without specifically documenting that the Plan will protect beneficial uses, and comparing those specific benefits against the documented injuries, the proposed Plan cannot be deemed a reasonable and beneficial use of water.</p>	
1235	14	<p>THE STATE WATER BOARD’S PLAN AND PLAN OF IMPLEMENTATION VIOLATE THE PUBLIC TRUST DOCTRINE.</p> <p>The Public Trust Doctrine Requires the State Water Board Ensure Water be Placed to Beneficial Use to the Fullest Extent.</p> <p>The overarching principle of the public trust doctrine is “the general welfare requires that the water resources of the state be put to beneficial use to the fullest extent to which they are capable, and that the waste or unreasonable use of water must be prevented.” Siskiyou at 423-424, citing People v. Weaver (1983) 147 Cal.App.3d Supp. 23, 28-29. Because the proposed Plan fails to adequately analyze and balance the reasonable and beneficial uses of water, the Board has failed to fulfill its fundamental duty under the public trust. In particular, the Board does not indicate how the dedication of a randomly selected percentage unimpaired flow to the benefit of fish and wildlife, to the documented detriment of other trust uses, is consistent with the purposes of the trust. Although the Board attempts to protect an important state interest by providing flow to fish and wildlife, the reasonableness of these flows cannot be determined in vacuum, isolated from other statewide interests, and without considering the effect of these unimpaired flows on all of the needs of those in the stream system. Siskiyou at 424; In re Waters of Long Valley Creek Stream System (1979) 25 Cal.3d 339, 354 (Long Valley).</p> <p>Failure to adequately analyze the effect of the unimpaired flows on other important needs on the stream system is inconsistent with the Board’s duty under the Public Trust Doctrine. In addition, this failure lends additional support that the unimpaired flow objectives constitute an unreasonable use of water, because the Board fails to demonstrate that through the unimpaired flows that “‘limited water resources be put only to those beneficial uses ‘to the fullest extent of which they are capable,’ that ‘waste or unreasonable use’ be prevented, and that conservation be exercised ‘in the interest of the people and for the</p>	Please see response to comment 1235-13.

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		<p>public welfare.” Cal. Const. art. X, § 2; Long Valley at 354; Light v. State Water Resources Control Bd. (2014) 226 Cal.App.4th 1463, 1479-1480.</p>	
1235	15	<p>THE STATE WATER BOARD’S PLAN AND PLAN OF IMPLEMENTATION VIOLATE THE PUBLIC TRUST DOCTRINE.</p> <p>The Board cannot rely on its authority under the Public Trust as support for its decision to impose the unimpaired flow criteria.</p> <p>Under the Public Trust doctrine, the Board may curtail water rights in certain narrow circumstances. State Water Board Cases, 149-150; 23 CCR, § 780(a). However, this authority does not justify curtailing water rights to implement the LSJR Flow Objectives for several reasons. First, the Board may only utilize the Public Trust Doctrine to curtail vested water rights when it “is necessary” to protect the public trust interest. 23 CCR, § 780(a). This is a stringent standard that exceeds the standard required for the Board to set water quality objectives; that standard requires that the Board “establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection” of the beneficial use. Water Code § 13241. Even assuming, arguendo, that the Board’s analysis for the establishment of the flow objectives were sufficient, it may not rely on that analysis to implement the flow objectives under its public trust authority. Instead, the Board needs to notice and perform separate Public Trust proceedings to determine whether the objectives are necessary to protect the public trust:</p> <p>The continuing authority of the board also may be exercised by imposing further limitations on the diversion and use of water by the permittee in order to protect public trust uses. No action will be taken pursuant to this paragraph unless the board determines, after notice to affected parties and opportunity for hearing, that such action is consistent with California Constitution Article X, Sec. 2; is consistent with the public interest and is necessary to preserve or restore the uses protected by the public trust. 23 CCR 780(a)</p> <p>To curtail a vested appropriative right under the Public Trust Doctrine, the State Water Board must first affirmatively find based on substantial evidence, that the particular diversion is “harmful to the interests protected by the public trust.” State Water Board Cases at 151. Essentially, the Board may not justify the exercise of its public trust authority to curtail a particular vested appropriative right simply because fish and wildlife are specifically harmed by the particular diversion at issue. This severely limits the Board’s ability to exercise its public trust authority to implement in the unimpaired flow objective.</p> <p>Even if the Board demonstrated the flow necessary to protect public trust resources, it must also find that the proposed curtailment of the targeted vested water right(s) is in the “public interest.” Id.; Water Code § 1253; 23 CCR § 780(a). The public interest consideration requires that the Board “consider and protect all of the other beneficial uses. . . including</p>	<p>Please see response to comment 1235-13. Arguments regarding the curtailment of vested water rights are premature since implementation of the plan amendments through water right and water quality proceedings has yet to occur. Please see Master Response 1.2, Water Quality Control Planning Process, regarding implementation of the flow objectives through future proceedings.</p>

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		<p>municipal, industrial, and agricultural uses.” State Water Board Cases at 778. The great majority of the beneficial uses the flow objective supports are municipal and agricultural uses, which many people rely on for their livelihood and health and safety. The SED fails to establish the level of protection, if any, the proposed Plan will provide to fish and wildlife. The established benefit of existing uses, combined with the undefined benefit of the Plan, reveals that it’s unlikely that an appropriate balancing of the public interest would result in the curtailment of these vested rights pursuant to the public trust.</p>	
1235	16	<p>Requiring the Bypass of 30-60 Percent of Unimpaired Flow without Implementing Other Physical Solutions is an Unreasonable Use of Water.</p> <p>When it adopted the 2010 Flow Criteria Report, the State Water Board acknowledged the need for an integrated approach to management of the Delta:</p> <p>Best available science supports that it is important to directly address the negative effects of other stressors, including habitat, water quality, and invasive species, that contribute to higher demands for water to protect public trust resources. The flow criteria highlight the continued need. . . to develop an integrated set of solutions and to implement non flow measures to protect public trust resources. 2010 Delta Criteria Report.</p> <p>Yet the SED fails to adequately address other local environmental conditions that limit the survival of fish, and thus cannot support unimpaired flow as a reasonable use of water. Predation is one example of the local environmental conditions that pose a significant threat to the survival of native anadromous fish. Other examples include fish mortality caused by dewatering, lack of velocity, impaired water quality, or local hatchery practices. Requiring increased flow without addressing these other factors impacting fish populations is a legal flaw in the SED and proposed flow objectives. The SED’s failure to properly account for and evaluate these other local environmental conditions demonstrates that the proposed flow objectives are an unreasonable use of water.</p> <p>Predation is probably the biggest barriers to increasing fish populations. The National Marine Fisheries Service’s 2009 Draft Recovery Plan for salmon and steelhead found predation to be one of the most important stressors. A 2014 study by Department of Water Resources found that “predation plays a large role in the survival rates of out-migrating salmon.” This Board has identified non-native species as one of the water quality impairments in the Bay-Delta. Water quality laws require that before flow is used, this Board must control all factors that can reasonably be controlled through non-flow measures.</p> <p>The facts on predation are simply illustrated by the following:</p>	<p>The premise of the comment is that non-flow measures, not flow, “drive fish populations.” That is incorrect. The scientific basis for the LSJR flow objectives to protect fish and wildlife beneficial uses is documented in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives. Best available science has shown that non-flow factors, such as predation, are affected by flow, because a reduced, flattened flow regime favors nonnative species. Increasing flow in the river will enhance the effect of predator removal. Please see Master Response 3.1, Fish Protection, which further explains the scientific justification for flow in protecting fish and wildlife and the expected benefits of the unimpaired flow approach, including increased emigration survival and decreased predation under higher flow conditions during the outmigration period. It also provides additional discussion of other stressors. As discussed in Master Response 3.1, reducing predator populations without addressing habitat alterations that provide non-native predators favorable conditions is unlikely to be successful for predator control. A combined effort of habitat improvement to less-favor predators (through implementation of a more natural flow regime) and predator reduction efforts is needed.</p> <p>The State Water Board recognizes the importance of complementary non-flow measures, such as predator removal and local hatchery practices, for protection and recovery of the salmon population. As stated in Appendix K, Revised Water Quality Control Plan, the recommended non-flow measures are complementary to the LSJR flow objectives for the protection of fish and wildlife.</p> <p>Non-flow measures were identified and their environmental impacts were evaluated in Chapter 16, Evaluation of Other Indirect and Additional Actions, Section 16.3, Lower San Joaquin River Alternatives – Non-Flow Measures. However, the plan amendments are fundamentally about addressing water quality by providing more flows necessary to reasonably to protect fish and wildlife. Flow, is a critical water quality parameter that the State Water Board has the obligation and responsibility to address under the Porter-Cologne Water Quality Control Act. For more information on the consideration of non-flow measures in the plan amendments, please see Master Response 5.2, Incorporation of Non-Flow Measures.</p> <p>Since more flow is necessary to reasonably protect fish and wildlife beneficial uses and the commenter’s premise that non-flow measures drive fish populations is incorrect, the required LSJR flow objectives do not constitute an unreasonable use of water. Moreover, the program of implementation allows for non-flow measures to support reduced flows within the prescribed range, as long as the criteria for the adjustments are met, thereby maximizing the beneficial uses of water. Future water right proceedings may support the imposition of non-flow measures as a physical solution on a particular party and waterbody.</p> <p>Please see Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, for</p>

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		<p>* Research on the Tuolumne River shows 95% to 98% of salmon and steelhead--which are protected under the federal Endangered Species Act--are lost to predation before they even leave that river (attempts to collect similar data on the Stanislaus River have been blocked by government red tape).</p> <p>* There are 300 bass per kilometer in the San Joaquin River--this is not hot spots, this is the entire river.</p> <p>* It is estimated that 800,000 to 1.5 million adult striped bass live in the Delta, with a total (all age groups) predator population of 6 million to 8 million.</p> <p>* In Clifton Court Forebay we have from 80 to 100% loss to predation with no fix being planned.</p> <p>Until predation is addressed, native salmon and steelhead populations may never increase in the river, no matter how much water is released.</p> <p>The recent actions with hatchery fish in the SJR watershed raises more issues with the unimpaired flow proposal--and provides a perfect illustration of the reasons that flow will not provide the result sought by the Plan. The Stanislaus River has already met the doubling goal for salmon:</p> <p>* Spawning adult salmon in the Stanislaus have increased by a factor of five since 2007</p> <p>* Numbers in 2015 were the 12th highest since 1950.</p> <p>However, flow is not responsible for this success. Study of the fish returning to the Stanislaus River show that they are all hatchery fish. In 2013 California Fish and Wildlife increased hatchery production on the Merced River to 1.5 million fish. These fish are spawned and reared in the hatchery, but they are not then released into the Merced River; rather, they are trucked to the Bay and released. As a result, these fish do not face the gauntlet of predation that is described above resulting in 98-100% predation rates. Rather, they are escorted past the predators, and released into the ocean where they must face only an ocean harvest of 60%. Therefore, up to 40% of these hatchery fish are returning to the tributaries to spawn. Under Department of Fish and Wildlife regulations, when these hatchery fish spawn in the Stanislaus River, they are no longer hatchery fish, but are considered natural. Despite reports to the contrary, because of this combination of</p>	<p>information regarding a reasonable range of alternatives and the need for the alternatives to meet the objectives of the plan amendments, as well as why non-flow measures are not alternatives to the proposed LSJR flow objectives.</p>

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		<p>predation and increased hatchery production, there is no natural production of Central Valley Fall- Run Chinook Salmon on the tributaries; they have been overrun by hatchery practices.</p> <p>The non-flow issues currently drive fish populations in the tributaries--not flow. Yet again, the SED focuses strictly on flow--which is irresponsible, and an unreasonable use of water under the circumstances. Again, even the 2010 Flow Criteria Report acknowledged that issues other than flow must be considered, stating: "it is highly unlikely that any fixed or predetermined prescription will be a 'silver bullet'. The performance of native and desirable fish populations in the Delta requires much more than fresh water flows." They also need "habitat having a particular range of physical characteristics, appropriate variability, adequate food supply and a diminished set of invasive species."</p> <p>While folks ask "How much water do fish need?" they might well also ask, "How much habitat of different types and locations, suitable water quality, improved food supply and fewer invasive species that is maintained by better governance institutions, competent implementation and directed research do fish need?" The answers to these questions are interdependent.</p> <p>The Recirculated Draft SED indicates that "non-flow measures can also be important, but State Water Board has limited authority to require non-flow measures." This is simply not the case.</p> <p>The State Water Board has consistently acknowledged that flow alone is insufficient to meet the beneficial uses for fish and wildlife.</p> <p>Successful implementation of nonflow measures may support adaptive adjustments to the required flow within the adaptive range of 30 to 50 percent of unimpaired flow, as long as the criteria for such adjustments are met. Summary of Proposed Updates to the Bay-Delta Water Quality Control Plan (September 15, 2016).</p> <p>. . . a key element of successful adaptive management is the implementation of non- flow measures that could reduce the flows needed, within the adaptive range, to achieve reasonable fish and wildlife protection goals, such as restoration of gravel spawning beds, suppression of habitat beneficial to predatory fish, and enhancement of habitat beneficial to native species". Summary of Proposed Updates to the Bay-Delta Water Quality Control Plan (September 15, 2016).</p>	

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		<p>The State Water Board recognizes the importance of habitat restoration and direct control of other stressors, and that non-flow actions could reduce the flows needed to achieve reasonable fish and wildlife protection goals. These factors also interact with flow; therefore some level of increased flows will be needed even with non- flow actions, but non-flow actions can also mitigate the need for increased flows. Fact Sheet: Working Draft Scientific Basis Report for Flow Requirements on the Sacramento River, its Tributaries, Eastside Tributaries to the Delta, Delta Outflow, and Interior Delta Flows Oct. 19, 2016</p> <p>While flow is one of the primary factors affecting fish and wildlife, the Report also describes other stressors, such as pollutants, predation by non-native species, and habitat alteration, and how stressors interact in the ecosystem. Non-flow measures will be addressed in the Bay-Delta Plan program of implementation, including actions the State Water Board may take related to those issues. Fact Sheet: Working Draft Scientific Basis Report for Flow Requirements on the Sacramento River, its Tributaries, Eastside Tributaries to the Delta, Delta Outflow, and Interior Delta Flows Oct. 19, 2016 FN 2</p> <p>Despite these acknowledgements, the SED neither includes nor implements identified non-flow actions beneficial to fish and wildlife that would reduce the need for flow in the SED. This failure to analyze impacts to and solutions to address water quality issues through non-flow measures is unreasonable, and the Plan’s reliance on flows exclusively when the Board acknowledges that adoption of non-flow factors would require less water violates Article X Section 2 of the California Constitution and the Public Trust.</p>	
1235	17	<p>The Plan’s exclusive reliance on unimpaired flows to address fish and wildlife beneficial uses violates Water Code section 13241.</p> <p>When establishing its Plan, the Board must “ensure the reasonable protection of beneficial uses” and in doing so must consider “[w]ater quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area”. Clearly in order to remain consistent with the Board’s emphasis on the reasonable use of water, controlling water quality conditions through the coordinated control of all factors” that affect water quality rather than relying exclusively on flow measures is required. Failure to do so violates Water Code</p> <p>§13241.</p> <p>When establishing its Plan, the Board must “ensure the reasonable protection of beneficial uses” and in doing so must consider “[w]ater quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area”. The Plan fails to do so. California law prohibits the Board from adopting a plan requiring more flow be released from reservoirs on the SJR than is required for the beneficial use to be served: “[t]he right to water or to the use or flow of water in or from any natural stream or watercourse in this State is and shall be limited to such water as shall</p>	<p>Please refer Master Response 1.2, Water Quality Control Planning Process, for responses to comments regarding consideration of beneficial uses, reasonable use of water, and 13241 factors.</p> <p>The plan amendments in Appendix K include recommendations to other agencies for non-flow actions (for example, habitat improvement) that are complementary to the flow objectives for the protection of fish and wildlife. These actions may support a change in the required amount of flow, within the range specified by the flow objectives, if certain criteria are met. Please see Master Response 5.2, Incorporation of Non-Flow Measures, regarding implementation of non-flow measures. These considerations, together with the evaluation of impacts on other beneficial uses, are explained in the SED and provides a factual basis for the State Water Board’s ultimate determination.</p>

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		<p>be reasonably required for the beneficial use to be served. . .” Water Code §100. The Board acknowledges that implementing non-flow measures would reduce the amount of flow needed to meet the beneficial uses; therefore, California law requires those actions be required as part of the Plan.</p>	
1235	18	<p>The Board’s Assertion That It Has No Authority to Require Non-Flow Factors Is Absurd.</p> <p>The law clearly requires the Board to consider control of all factors, including non-flow actions, when protecting beneficial uses. Water Code section 13241. In fact, the constitution and the public trust would require that non-flow factors be looked to first in order to protect flows, and ensure that water is being placed to its highest and best use.</p> <p>The Board recommends, but does not require, non-flow actions be undertaken by regulated parties as part of the implementation plan:</p> <p>While flow remains a key factor, the State Water Board also recognizes that a number of other factors, such as nonnative species, predation, high water temperatures, barriers to fish passage, and habitat loss contribute to the degradation of fish and wildlife beneficial uses in the LSJR. Direct actions to address these other stressors would complement LSJR flows to protect fish and wildlife. The State Water Board, therefore, recommends certain actions in the program of implementation. These recommended actions, together with the coordinated monitoring and adaptive implementation described above, are expected to improve habitat conditions that benefit native fish and wildlife or are expected to improve related science and management within the LSJR Watershed, and could reduce the flows needed, within the adaptive range, to achieve reasonable fish and wildlife protection goals. ES-19.</p> <p>The SED does not explain why essential non-flow measures are not imposed as part of the plan of implementation, to be implemented as conditions to water right permits. In oral statements, not included in the SED, Board members have stated that it does not have the legal authority to impose non-flow conditions--nothing could be further from the truth. The instances of the Board’s imposition of non-flow requirements as conditions on water right permits are too numerous to mention; the State Water Board has required permit holders to perform fishery studies (D 1616), groundwater studies (D 869), studies for mitigation of streamflow reductions and sediment buildup (D 1582), to consult with other regulatory agencies to develop plans to reduce fish losses resulting from diversion of water, and to identify proposed sources of funding to implement projects (D 1644), to fund a study to be performed by the Department of Fish and Game of the steelhead resource potential and flow requirements necessary for the transport of adult and juvenile steelhead to and from spawning and rearing areas to gather data and make recommendations as to feasible alternatives for the improvement and perpetuation of a steelhead resource that may reasonably be undertaken using water appropriated pursuant to a permit (D 1586), to conduct a study to determine the permitted project’s impacts on fishery habitat and fish</p>	<p>Please refer to Master Response 5.2, Incorporation of Non-Flow Measures, for responses to comments regarding the State Water Board’s authority to Impose Non-Flow measures. Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the integration of non-flow measures and modifications to the plan amendments.</p>

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		<p>populations. (D 1609), to install physical barriers in the river (D 1641) to study recirculation, and hundreds of other examples. In addition, to demonstrate that the Board itself believes it has authority to impose non-flow conditions on water right permits, one need look no further than the carryover storage requirements its Plan of Implementation proposes to impose on all SJR water right holders.</p>	
1235	19	<p>THE RECIRCULATED DRAFT SED IS LEGALLY DEFICIENT FOR PURPOSES OF COMPLYING WITH THE REQUIREMENTS OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT.</p> <p>The failure of a CEQA document to fulfill its informational duty is prejudicial to the decision makers and public. Rather than certify the SED, the Board must produce a sufficient evaluation of the potential environmental effects and thereafter provide a new public review draft SED and comment period. The Legislature declares that environmental quality is a statewide concern and requires public agencies to exercise regulatory authority “so that major consideration is given to preventing environmental damage.” Pub.Res.C. §21000(g); Title 14 California Code of Regulation §15002(a)(2)-(3) (hereinafter unidentified reference refer to the CEQA Guidelines). [Footnote 1: We acknowledge the citations presented herein involve challenges to EIRs rather than to a SED. Nevertheless, substantial overlapping legal requirements applicable to each type of document make these important citations directly applicable here. Throughout this comment letter we rely on statutory, administrative guidelines and decisional law statements that apply with equal dignity to the legal sufficiency of either an EIR or a SED. Hence, the term “EIR” and the term “SED” may be used interchangeably in this comment.] Ignoring direct and cumulative impacts defeats an overriding policy as articulated by the Supreme Court that CEQA is “to be interpreted...to afford the fullest possible protection to the environment within the reasonable scope of the statute language.” <i>Friends of Mammoth v. Board of Supervisors</i> (1972) 8 Cal.3d 247, 259. “The EIR requirement is the heart of CEQA.” §15003(a). A legally adequate SED demonstrates “to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its actions” (§15003(d)); and “enable[s] the public to determine the environmental and economic values of their elected and appointed officials thus allowing for appropriate action come election day.” <i>People v. County of Kern</i> (1976) 39 Cal.App.3d 830, 842. The Supreme Court succinctly observes, “The EIR process protects not only the environment but also informed self government.” <i>Laurel Heights Improvement Association v. Regents of the University of California</i> (1988) 47 Cal.3d 376, 392 (“<i>Laurel Heights</i>”).</p> <p>If the SED is adopted without sufficiently discussing and mitigating environmental effects, the Board has not proceeded in a manner required by law. <i>TRIP v. City Council</i> (1988) 200 Cal.App.3d 671, 679. The Fifth District underscores the EIR’s information disclosure feature: “A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process.” <i>Dry Creek Citizens Coalition v. County of Tulare</i> (1999) 70 Cal.App.4th 20, 26 (“<i>Dry Creek</i>”); <i>Kings County Farm Bureau v. City of Hanford</i> (1990) 221 Cal.App.3d 692, 712 (“<i>Kings County</i>”).</p>	<p>Please see Master Response 1.1, General Comments, regarding the regarding the programmatic analysis in the SED and the difference between programmatic and project-level analyses and for information regarding the impacts evaluated in the SED. The plan amendments are not a development project and are not a project-specific action. They are amendments to an existing water quality control plan. As identified by the Certified Regulatory Program, the State Water Board is not required to conduct a site-specific project-level analysis, which CEQA may otherwise require of those agencies who are responsible for complying with the plan or policy when they determine the manner in which they will comply (Title 23 Division 3, Chapter 27, Article 1, Section 3777). Furthermore, the degree of specificity in an environmental document corresponds to the degree of specificity involved in the underlying activity which is described in the environmental document (State CEQA Guidelines, Section 15146). As acknowledged by the State CEQA Guidelines, an environmental document disclosing the impacts of a construction project will necessarily be more detailed than those evaluating a plan because the effects of the construction can be predicted with much greater accuracy (State CEQA Guidelines, Section 15146(a)). An environmental document analyzing a plan need not be as detailed as an environmental document on a specific construction project ((State CEQA Guidelines, Section 15146(b)). The fact that the analyses is programmatic in the SED does not negate the ability of commenters to provide comments on the analysis. As identified in the State CEQA Guidelines: an EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences (State CEQA Guidelines, Section 15151). An evaluation need not be exhaustive for commenters to provide comments or for decision makers to make a decision. In addition, as identified by the State CEQA Guidelines, persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. The adequacy of an environmental document is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project (State CEQA Guidelines, Section 15024(a)).</p> <p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding a description of the plan amendments (i.e., the project description) and Master Response 2.5, Baseline and No Project, regarding the baseline. The SED includes an analysis of agricultural operations relying more heavily on groundwater as a potential substitute for reduced surface water in Chapter 9, Groundwater Resources, and other potential groundwater-related actions in Chapter 16, Evaluation of Other Indirect and Additional Actions. The SED includes analyses of the potential for air pollution to be generated with additional groundwater pumping in Chapter 14, Energy and Greenhouse Gases, Chapter 16, Evaluation of Other Indirect and Additional Actions, and Appendix B, State Water Board’s Environmental Checklist.</p>

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		<p>Thus, an “adequate EIR must be ‘prepared with a sufficient degree of analysis to provide decision- makers with information which enables them to make a decision which intelligently takes account of environmental consequences.’ (Citation) 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.’” Kings County at 712 citing Laurel Heights at 405. See, also Dry Creek at 26. Omitting relevant information itself “is prejudicial if the failure to include relevant information precludes informed decision making and informed public participation.” San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus (1994) 27 Cal.App.4th 713, 722.”).</p> <p>The SED’s legal sufficiency is determined by Code of Civil Procedure (C.C.P.) §1094.5 and Pub.Res.C. §21168. An abuse of discretion occurs if an agency does not proceed in a manner required by law or if the decision is not supported by substantial evidence. “Failure to provide enough information to permit informed decision making is fatal.” Napa Citizens for Honest Government v. Napa County (2001) 91 Cal.App.4th 342, 361. To put a finer point on it, certifying “an EIR which is legally deficient because it fails to adequately address an issue constitutes a prejudicial abuse of discretion regardless of whether compliance would have resulted in a different outcome.” Citizens to Preserve Ojai v. County of Ventura (1985) 176 Cal.App.3d 421, 428.</p> <p>The applicable two prong standard presented by C.C.P § 1094.5 compels a trial court to take a hard and demanding evaluation of the evidence and the agency’s treatment of this evidence. In sum, a reviewing court ascertains whether a challenged EIR or SED was prepared “with a sufficient degree of analysis” to allow “a decision which intelligently takes account of environmental consequences.” Dry Creek at 26. This means the SED “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.” Laurel Heights at 405. Therefore, “where the failure to comply with the law results in a subversion of the purpose of CEQA by omitting information from the environmental review process, the error is prejudicial.” Rural Landowners v. City Council (1983) 143 Cal.App.3d 1013, 1023</p> <p>The SED acts as an informational document identifying potentially significant impacts of a project, as well as alternatives and mitigation measures necessary for informed decision-making (Pub.Res.C. §21002.1), and substantial evidence must support the SED’s findings and conclusions. Laurel Heights 47 Cal.3d 376. An adequate SED “must be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences” and “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.” Id. The SED does not meet this threshold; accordingly, it is not adequate for certification, and the Plan cannot be approved until a legally sufficient SED is prepared.</p> <p>The Board must proceed in a manner required by law, failure to do so represents an</p>	

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		<p>independent and separate prong of abusing discretion as identified in C.C.P. § 1094.5. Omitting relevant data or failing to conduct environmental studies or analysis based on a legally sufficient project description or baseline amounts to a failure to proceed in a manner required by law. Rural Landowners v. City Council (1983) 143 Cal.App.3d 1013, 1023. This is because CEQA is to be expansively interpreted in order to provide maximum evaluation and consideration of potential direct and indirect environmental effects. § 15003(f); Friends of Mammoth v. Board of Supervisors (1972) 8 Cal.3d 247,</p> <p>259. Cohering to this expansive statutory mandate the “EIR requirement is the heart of CEQA.” § 15003(a); County of Inyo v. Yorty (1973) 32 Cal.App.3d 795. More specifically, a SED must consider both direct and indirect environmental effects (§ 15064(e)). The expansive interpretation of this rule was presented in Bakersfield Citizens for Local Control v. City of Bakersfield (2004) 124 Cal.App.4th 1184, 1205-1206 and illustrates the meaningful relationship between socio-economic direct effects to secondary or indirect environmental effects:</p> <p>Guidelines section 15131, subdivision (a) provides, “An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes in turn caused by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.”</p> <p>Case law already has established that in appropriate circumstances CEQA requires urban decay or deterioration to be considered as an indirect environmental effect of a proposed project. The relevant line of authority begins with Citizens Assn. for Sensible Development of Bishop Area v. County of Inyo (1985) 172 Cal.App.3d 151, 217 Cal.Rptr. 893 (Bishop). There, the appellate court held that adoption of multiple negative declarations for different aspects of the same large regional shopping center violated CEQA. (Id. at p. 167, 217 Cal.Rptr. 893.) The court also agreed with appellant that on remand “the lead agency must consider whether the proposed shopping center will take business away from the downtown shopping area and thereby cause business closures and eventual physical deterioration of downtown Bishop.” (Id. at p. 169, 217 Cal.Rptr. 893.) Citing Guidelines section 15064, the court found that the lead agency had an affirmative duty to consider whether the new shopping center would start an economic chain reaction that would lead to physical deterioration of the downtown area. (Id. at p. 170, 217 Cal.Rptr. 893.) Therefore, “[o]n remand the lead agency should consider physical deterioration of the downtown area to the extent that potential is demonstrated to be an indirect environmental effect of the proposed shopping center.” (Id. at p. 171, 217 Cal.Rptr. 893.)</p> <p>Accordingly, in Bakersfield Citizens the socio-economic impact of store closures required the two EIRs to study in depth the potential that this non-environmental effect could start a “chain of events” leading to urban decay, a recognized environmental effect. To the same</p>	

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		<p>extent, the SED fails to identify and omits significant secondary effects of the proposal. For instance, as explained later, the Plan will induce agricultural operations to rely more heavily on groundwater as a substitute for reduced surface water deliveries. This in turn means that more air pollution will be emitted as agricultural operations increasingly use diesel engines to pump groundwater for application to crops. Against the Bakersfield Citizens standard of legal sufficiency the SED is legally deficient and approval of the SED as currently presented amounts to a prejudicial abuse of discretion.</p>	
1235	20	<p>THE RECIRCULATED DRAFT SED'S PROJECT ENVIRONMENTAL SETTING AND BASELINE IS LEGALLY DEFICIENT.</p> <p>Evaluating a project's potential to cause individual and/or cumulative impacts requires identifying an accurate environmental setting/baseline. See §15130(b) (1). Indeed, "[t]he purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind. (Bozung v. LAFCO (1975) 172 Cal.App.3d 151)," §15003(g)), and an analysis relying on a factually inaccurate environmental setting/baseline reflects an exercise in paper pushing rather than good-faith information disclosure. Accordingly, incorrectly including certain features or omitting relevant features of the baseline or environmental setting is inherently prejudicial, for a "[p]roper cumulative impacts analysis is absolutely critical to meaningful environmental review." Bakersfield at 1217.</p> <p>The environmental setting and baseline consists of "the physical environmental conditions in the vicinity of the project" viewed from "local and regional perspective(s)." §15125(a) and (c). It should be sufficiently comprehensive to allow a project's significant impacts "to be considered in the full environmental context." §15125(c). It should also be sufficiently clear and accurate to allow informed comparisons of the pre-project and post-project conditions. County of Amador v. El Dorado County Water Agency (1999) 76 Cal.App.4th 931, 955. The SED's assessment of a project's environmental impacts must examine changes to existing physical conditions expected to result from the Plan's implementation. §15126.2(a). It must focus on the project's impacts to the environment, not its impacts on hypothetical situations. County of Amador v. El Dorado County Water Agency (1999) 76 Cal.App. 4th 931, 952.</p> <p>The SED's baseline is legally deficient, rendering the SED inadequate as a CEQA compliance document. The SED contains multiple baseline deficiencies:</p> <ol style="list-style-type: none"> 1. The baseline incorrectly assumes implementation of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan (VAMP) flows which expired in 2011. 2. The baseline include the June 2009 National Marine Fisheries Service's Biological Opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and 	<p>Please see Master Response 2.5, Baseline and No Project, for general information on the baseline, inclusion of VAMP flows and the NMFS Biological Opinion, why the No Project assumes full compliance with D1641, and information about the SJRRP. Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the modeling approach used in the Recirculated SED. Chapter 17, Cumulative Impacts, Growth Inducing Effects, and Irreversible Commitment of Resources, includes a qualitative evaluation of flows expected from the Upper San Joaquin River and potential cumulative effects on fisheries and water quality.</p>

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		<p>State Water Project (NMFS BiOp) when the Notice of Preparation (NOP) for the SED was published (February 3, 2009) [SED pg. 1-6].</p> <p>3. The baseline omits flows from the San Joaquin River Restoration Program stemming from the settlement reached in 2006.</p> <p>4. Finally, the baseline improperly assumes Reclamation making releases to meet the existing February through June flow objectives assigned to Reclamation as part of D1641. Reclamation has informed the Board that it is not making these releases, as such, it is improper to include them in the baseline.</p> <p>Including features not reasonably part of the environmental setting/baseline while unreasonably excluding features of the existing environmental setting/baseline is incoherent in the extreme. These materially defective errors results in the SED inaccurately analyzing significant impacts from implementing alternatives and grossly underestimate impacts to water diversions. The understated environmental effect also results in inadequate analysis and a failure to consider mitigation measures to minimize this more significant environmental effect.</p> <p>A project’s environmental effects must be measured against actual physical conditions on the ground as opposed to hypothetical uses. City of Carmel-by-the-Sea v. Board of Supervisors (1986) 183 Cal.App.3d 180, 186-187. “[T]he environmental baseline is the basis on which the environmental impacts of the project are to be measured normally is the physical condition of the project site at the time the notice of preparation of the EIR is published.” Woodward Park Homeowners Assoc., Inc. v. City of Fresno, (2007) 150 Cal.App.4th 683 (citing to §15125(a)). There the court determined an EIR for a shopping center that used operation of an authorized but non- existent office building as its baseline was “legally inadequate as an informational document because it failed to analyze consistently and coherently the impacts of the project relative to leaving the land in its existing physical condition.” Id. at 710. The court ultimately held the EIR was deficient because it “failed to use the existing physical environment as the environmental baseline” and inappropriately compared the project’s environmental effects to a hypothetical project and not the existing conditions on the ground. Id. at 711.</p>	
1235	21	<p>THE SED LACKS AN ADEQUATE PROJECT DESCRIPTION.</p> <p>A Project Description is a mandatory element of a legally sufficient SED. §15124. At a minimum the SED’s Project Description must include four elements: (1) “The precise location and boundaries of the proposed project”; (2) “A statement of the objectives sought by the proposed project”; (3) “A general description of the project’s technical, economic and environmental characteristics”; and (4) “A statement briefly describing the intended uses of</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the project description.</p> <p>A “finite project description is indispensable to an informative, legally adequate” environmental document (County of Inyo v. City of Los Angeles (1977) 71 Cal.App.3d 185, 192). Without an accurate project description on which to base the SED’s analysis, the goals of CEQA to further public disclosure and informed decision making are stymied. (See, e.g., San Joaquin Raptor/Wildlife Rescue Ctr. V. County of Stanislaus (1994), 27 Cal.App.4th 713, 730.) Contrary to commenters’ claims, however, the SED provides a clear, accurate and finite project description in order to adequately analyze and disclose environmental impacts in</p>

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		<p>the EIR.” §15124(a) through (d).</p> <p>The SED’s Project Description plainly does not meet minimum legal requirements and this deficiency is fatal. This is because a “finite project description is indispensable to an informative, legally adequate EIR.” County of Inyo v. City of Los Angeles (1977) 71 Cal.3d 185,199. Thus a project description omitting integral components of the project may result in a SED that fails to disclose all relevant impacts of the project. Santiago County Water District v. County of Orange (1994) 118 Cal.App.3d 818, 829. Simply stated, “an accurate project description is necessary for an intelligent evaluation of the potential environmental effects of the proposed activity.” San Joaquin Raptors/Wildlife Rescue Center v. County of Stanislaus (1994) 27 Cal.App.4th 713, 730.</p> <p>The Supreme Court has concluded that if the description is inadequate because it fails to discuss the complete project, the environmental analysis will probably reflect the same mistake. Laurel Heights Improvement Association v. Regents (1988) 47 Cal 3d 376. There is a general mention of the consideration of amendments to the 2006 Bay-Delta Plan to change flow requirements in the San Joaquin River basin and changes to water quality objectives in the Southern Delta, but nowhere in the body of the SED is there a clear concise description which sets forth the objectives of the propose Project and measurable benefits that will be achieved by implementation of the proposed Project.</p> <p>Appendix K of the SED contains the program of implementation that fails to set forth in sufficient detail the suite of actions that will be undertaken to implement the Plan. Instead, there are many references to actions to be developed by federal and state agencies with participation by stakeholders and delegation of actions to the Executive Director of the Board. The SED fails to describe the proposed Project, improperly excludes mandatory areas and fails to describe the program of implementation in sufficient detail to conduct a legally adequate evaluation of the environmental impacts associated with the proposed project including the program of implementation. This lack of a sufficient project description renders the SED fatally flawed. A revised SED must include a clear concise project description and well-articulated program of implementation from which there can be a thorough analysis of the environmental impacts of implementation of the proposed project.</p>	<p>Chapters 3 through 23.</p> <p>Refer to SED Chapter 1, Introduction, which provides the basic project description and refers to Appendix K, which contains the entirety of the proposed amendments to the Bay-Delta Plan, and Chapter 3, Description of Alternatives, for details of the plan amendments. The Executive Summary also provides a summary of the plan amendments. Demonstrating the benefits of a project is not a project description issue under CEQA. The benefits to fish and wildlife from the plan amendments are set forth in the SED (see, e.g., Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30) and summarized in the Executive Summary.</p>
1235	22	<p>THE SED FAILED TO IDENTIFY AND CONSIDER A REASONABLE RANGE OF ALTERNATIVES AND FAILED TO EXPLAIN WHY FEASIBLE ALTERNATIVES WERE REJECTED FROM THE REASONABLE RANGE OF ALTERNATIVES.</p> <p>CEQA requires an EIR or SED to describe a range of reasonable alternatives to a proposed project, or to the location of a proposed project, which feasibly obtain most of the basic objectives of the proposed project, but would avoid or substantially lessen any of the significant effects of the proposed project, and evaluate the comparative merits of the alternatives. §15126.6(a). “The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and</p>	<p>Please refer to Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, regarding the reasonable range of feasible alternatives and the Water Board’s discretion, as CEQA lead agency, to establish purposes and goals for the plan amendments. In particular, please refer to Table 2.4-1. Summary of Inability of Non-Flow Measures to Achieve the Goals of the Plan Amendments, of Master Response 2.4., which summarizes the infeasibility of non-flow-only alternatives.</p> <p>Please see Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin river Flow and Southern Delta Salinity Objectives; Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30; and Master Response 3.1, Fish Protection, regarding information about beneficial effects of the plan amendments on salmon, other native fish species, and habitat.</p>

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		<p>could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects.” §15126.6(c). Indeed, an alternatives analysis is “the core of an EIR.” Citizens for Goleta Valley v. Board of Supervisors (1990) 52 Cal.3d 553, 564. A SED must describe a reasonable range of alternatives. It must evaluate the comparative merits of those alternatives. §15126.6(a). A SED must explain how project alternatives were selected for analysis. It should also identify alternatives rejected as infeasible and explain why they were rejected. §15126.6(c).</p> <p>The SED statement of the Project Purposes and Goals is ill defined and singularly focused in order to result in the Board’s desired outcome: more flow for fish. The eight goals set forth by the Board are solely focused on flow so that the Board may achieve its desired outcome of implementation of a percentage of unimpaired flow. Virtually no other action could achieve the desired goals except more flow. The Purposes and Goals section must be modified so that a broad range of alternatives could achieve the desired goals. The goal should be expressed as “establish water quality objectives and a program of implementation for the reasonable protection of fish and wildlife beneficial uses in the LSJR Watershed.” Other feasible alternatives exist that do not require the draconian harm inflicted by the percentage of unimpaired flow paradigm. Alternatives do exist that would avoid or substantially lessen potentially significant impacts of the Plan. As such the proposed Project must be rejected. For example, the primary goal should be to increase the survival of juvenile outmigrants through the LSJR watershed and Delta. This can be done by implementation of a predator suppression program; creation of greater habitat and gravel augmentation for spawning and rearing in LSJR. Ensure adequate conditions for emigration including implement ocean harvest practices that maximize returns of adult salmon to the LSJR tributaries.</p> <p>With respect to LSJR flow objectives, the only alternatives considered were based on dedication of a percentage of unimpaired flow. The purported purpose of the LSJR flow objective is the reasonable protection of fish and wildlife and to support and maintain the natural production of native fish populations. However, there are other feasible alternatives including targeted short duration pulse flows during the time period needed for emigrating juvenile fish. These feasible alternatives were rejected without sufficient explanation by the SED or the Board. Choosing an alternative that uses more water than reasonably necessary to meet the purpose of the water quality objective certainly constitutes an unreasonable use of water violating the California Constitution, as discussed above.</p> <p>There are other feasible non-flow alternatives that will reasonably protect the fishery including, but not limited to, improving riparian habitat, gravel enhancement and augmentation, and reduced ocean harvest are present. Most importantly excluded from consideration is a predator suppression program. Extensive information was submitted to the Board regarding the significant effects of predation both in the tributaries and in the Delta. For instance on the Stanislaus River, 95% of the juvenile fish population is lost to predation in the river, that is, fish are caught at an upstream rotary screw trap and then 95% are not captured at the lower trap--lost to predation. It is essential that the Board consider non-flow measures to lessen the environmental effects of implementing only flow based</p>	

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		alternatives. A failure to consider such an alternative renders this SED legally deficient.	
1235	23	<p>THE RECIRCULATED DRAFT SED FAILS TO ACCURATELY DISCLOSE ENVIRONMENTAL EFFECTS OF THE IMPLEMENTATION OF THE PROJECT.</p> <p>The Water Board created the Water Supply Effects (WSE) model to evaluate the environmental effects of implementation of the proposed Project. In addition to the errors in the baseline, the WSE Model contains a series of operational parameters that are unreasonable, illegal, and not within the Board’s authority, including minimum carryover requirements, restriction on storage drawdown, drought reservoir refill requirements, flow shifting to fall, and restricting diversions in dry years. The WSE Model assumes that New Melones Reservoir would have a minimum carryover storage requirement of 700,000 acre feet. However, nowhere in the Project Description of the LSJR Flow Objectives is this requirement included as part of the Project or any of the other operational parameters.</p> <p>The modeling assumptions that form the basis of the WSE Model and the entire SED effects analysis is flawed, inaccurate and misrepresents impacts associated with implementing any of the Alternatives. Instead of identifying impacts from Plan implementation, the WSE Model analysis in the SED includes mitigating factors in an attempt to make the analysis work. As a result it is impossible to evaluate the environmental effects to groundwater resources, agricultural resources, municipal service providers, as well as all of the other resources. The SED must correctly quantify reduction in surface water available to water users, and then correctly analyze the impacts. The SED purports to show the impacts to water users from the implementation of the LSJR Flow and Salinity Objectives, but these modeled results are neither reliable nor realistic. First, the Recirculated Draft SED minimizes the actual impacts to water right holders by collectively calculating reductions and shortages by tributary, and using annual averages among all year types. The result of this is that the Recirculated Draft SED concludes that the long-term reduction in surface water supplies resulting from the Plan is a mere 14% reduction from the current condition. That result simply defies reality. While the SED shows an overall 14% reduction in supply, it also states that reductions will take place in accordance with water right priorities. This means that those with junior water rights would bear the brunt of the reductions, while others will suffer no impacts. The SED does not identify these very real ramifications anywhere in its graphs or summary of water supply effects.</p> <p>The most insulting aspect of the impact evaluation is the suggestion by the staff that impact to water users will be minimal because reduction of available surface water will be replaced with groundwater pumping. The SED estimates that the proposal could result in an average annual increase in groundwater pumping of 105,000 acre feet. The SED acknowledges that there is already a 45,000 acre feet annual deficit in current groundwater supplies. While noting that groundwater pumping in most of these areas is already unsustainable, the SED fails to evaluate the impact of SGMA on this increased and continued unsustainable use of groundwater. Reductions in pumping that will be imposed by SGMA are not even considered in the SED.</p>	<p>Please see Master Response 1.1, General Comments, regarding a general discussion of the overall approach to the analyses contained in the SED and the programmatic nature of the analyses. Please see Master Response 3.2, Surface Water Analyses and Modeling el, regarding the WSE as an appropriate tool to evaluate water supply effects and potential environmental impacts for the programmatic analyses contained in the SED and a discussion of carryover storage as represented by the model. The carryover storage provision in the program of implementation is not a form of mitigation, but part of the plan amendments to achieve its stated goals and objectives.</p> <p>Please see Master Response 2.3, Presentation of Data and Results in SED and Response to Comments, for information regarding the use of annual averages in the SED. Please see Chapter 13, Service Providers, for a qualitative discussion of potential effects on service providers under Impacts SP-1, SP-2a and SP-2b. Please see Master Response 3.6, Service Providers, for clarifying information regarding service providers and potential effects.</p> <p>Please see response to comment 1235-9 and Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, on the issue of replacing surface water with groundwater and evaluating the impacts of SGMA.</p>

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1235	24	<p>THE SED FAILS TO IDENTIFY AND EVALUATE ALL FEASIBLE MITIGATION MEASURES.</p> <p>In the SED the Board has a duty to “set forth” (P.R.C. §21100), “identify” and “describe” (§15126.4(a)(1)) proposed feasible mitigation measures. “A gloomy forecast of environmental degradation is of little or no value without pragmatic, concrete means to minimize the impacts and restore ecological equilibrium.” Environmental Council of Sacramento v. City of Sacramento (2006) 142 Cal.App.4th 1018, 1039. Thus the SED must describe feasible mitigation measures that could minimize the preferred project’s adverse environmental effects. §15126.4(a)(1). Omitting feasible mitigation measures undermines the minimum requirements of a SED. This is because “[w]here several measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified.” §15126.4(a)(1)(B). By omitting feasible mitigation measures the SED cannot comply with the requirement to discuss each feasible mitigation measure and provide guidance to decision-makers and the public about the relative merits of selecting one measure over another measure. Specifically, the SED states:</p> <p>“The LSJR alternatives could require higher river flows in the three eastside tributaries and would potentially result in a change in surface water diversions. The runoff to the eastside tributary reservoirs is determined by rainfall and snowmelt conditions and the reservoir storage capacity is fixed. Accordingly, there is no possibility of increasing the total surface water supply to provide more water for surface water diversions. More water released to the rivers would leave less water available for water supply diversions. The WSE model was used to predict the change in annual surface water diversions expected under each LSJR alternative...”</p> <p>SED at p. 5-73.</p> <p>The SED introduces the fatally flawed WSE Model as the tool to evaluate the impacts of the LSJR Alternatives which completely masks the impacts on water diversion. As described above, the WSE model utilizes an inaccurate baseline and unreasonable and/or unlawful operational assumption. Inclusion of these unreasonable and/or unlawful operational assumptions thwarts any ability to develop feasible mitigation measures for the severe impacts to water diversions. The SED concludes based on the flawed modeling that a 14% reduction in water diversion is less than significant. Where is the evaluation of the feasible mitigation measures to mitigate the actual 100% reduction in supply to a junior diverter? Or a similar 100% reduction to water users in dry years and critically dry years?</p> <p>For each significant impact, the SED must identify specific mitigation measures. Where several potential mitigation measures are available, each should be discussed separately, and the reasons for choosing one over the other should be stated. Id. If the inclusion of a mitigation measure would itself create new significant effects, these too, must be discussed, though in less detail than that required for those caused by the project itself. (Sacramento</p>	<p>Please see Master Response 2.5, Baseline and No Project, regarding the baseline. Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the Water Supply Effects model and appropriate use of the model as a reasonable representation of baseline and conditions on the three-eastside tributaries and the LSJR.</p> <p>Please see Master Response 1.1, General Comments, regarding proposed mitigation measures. As described in Master Response 1.1, the reduction of a surface water supply to an irrigation district or other entity, in and of itself, does not represent a significant effect on the physical environmental impact. As such, the fact that there may be a potential reduction in surface water supplies in response to implementation of the plan amendments does not require mitigation. The State Water Board properly evaluates actions irrigation districts or others may take (e.g., municipalities) as a result of potential reductions in surface water supplies throughout the entire SED and the potential significant physical environmental impacts that may then result. The SED does not conclude that a 14% reduction in water diversion is less than significant. Specifically, in Chapter 13, Service Providers, the State Water Board determined that in response to implementation of LSJR Alternative 2, with adaptive implementation and in response to implementation of LSJR Alternative 3, with or without adaptive implementation, that service providers (including irrigation districts and municipalities that may have contracts or other relationships with irrigation districts) could experience an annual average surface water supply reduction (shown in Table 13-14) that would potentially result in the need to construct or operate new or expanded water treatment or water supply facilities, which may result in significant impacts to the environment (Impact SP-1).</p>

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		<p>Old City Assn. v. City Council (1991) 229 Cal.App.3d 1011, 1027; Mount Shasta, at 439; 23 CCR, § 3777(b)(3); Pub. Resources Code, § 21002.) The SED has not provided the requisite mitigation analysis. Instead of proposing feasible mitigation measures for the impacts to groundwater basins, the SED defers to the yet to be formed Groundwater Sustainability Agencies. This deferral violates CEQA and is not supported by substantial evidence rendering the SED legally deficient. Moreover, the SED does not consider the feasibility of non-flow mitigation measures in any of its analysis rendering the SED legally deficient.</p>	
1235	25	<p>THE SED’S TREATMENT OF THE GREEN HOUSE GAS ENVIRONMENTAL IMPACT IS LEGALLY DEFICIENT.</p> <p>The SED dispensed with the direct impact of the proposed project’s on the environmental condition of global warming (referred to as “climate change” in the SED) by asserting without evidence that the impact was too remote to be studied. See SED page 14-1 at footnote 1. Failing to address the global warming issue is a serious deficiency. Such an omission as found here results in the failure to proceed in the manner required by law and an agency must explain in at least minimum detail the “compelling, countervailing considerations”. Citizens to Preserve the Ojai v. County of Ventura (1985) 176 Cal.App.3d 421, 430. [“The EIR does not explain in even minimum detail the basis for the omission and provides no reasoned analysis clarifying why complete reliance on the AQNP is justified when this major omission exists.”] The error is at least three-fold. First, the SED fails to adopt a legally sufficient threshold of significance for purposes of evaluating the significance of the potential environmental impact. Second, the SED omitted clearly understood potential environmental impacts flowing from the preferred project. Third, the SED did not evaluate feasible mitigation measures that could lessen the impact of global warming caused by the preferred project.</p> <p>This failure is exacerbated by the fact the State of California has aggressively promoted a policy requiring government agencies to consider and mitigate cumulative global warming impacts and yet here a state agency sidesteps this obligation. Without referencing or applying any threshold of significance the SED nakedly concludes that an individual project cannot have a direct environmental effect. This conclusion is reached without any analysis or any effort to compare some type of analysis to the applicable threshold of significance. This poses two problems. First, it truncates the analysis required by CEQA and collapses intermediate procedures required by CEQA before a public agency can conclude that a direct impact is not significant. Second, the approach conflicts with various state policies regarding climate change.</p> <p>The SED is inherently contradictory. At footnote one at page 14-1 it announces that climate change is too regional or global for an individual project to have a direct effect. However, at page 14-14 it provides a generalized threshold that apparently concludes that “climate change impacts were determined to be potentially significant (citation) and therefore are discussed in the analysis.” The two statements are contradictory and promote confusion. Indeed the so-called threshold of significance for climate change is no criteria at all but instead a tautological mixed word salad. According to the SED, “climate change would be</p>	<p>Please see Master Response 3.7, Greenhouse Gas Emissions and Analysis, for information regarding the GHG analysis contained in Chapter 14, Energy and Greenhouse Gases, including the scope, approach, thresholds, and criteria used to evaluate impacts. Please refer Master Response 1.1, General Comments, regarding the programmatic nature of the analysis in the SED.</p> <p>The State Water Board identifies and analyzes potential air quality impacts in a number of locations in the SED with respect to the plan amendments. These discussions expressly consider the issue of diesel-related air quality impacts. Air quality impacts are analyzed in Appendix B, State Water Board’s Environmental Checklist, and impacts on air quality were determined to be less than significant. In addition, the State Water Board identifies and analyzes air quality impacts in Chapter 16, Evaluation of Other Indirect and Additional Actions, with respect to the following: the construction and operation of seven indirect actions that could occur under the flow requirements, including groundwater wells; the construction and operation of 10 non-flow measures that could occur under the flow requirements; and the construction and operation of six methods of compliance that could occur under the salinity requirements. Impacts disclosed in Chapter 16 range from no impact to significant and unavoidable impacts depending on the action evaluated and the potential mitigation measures that third parties could implement. Mitigation measures related to air quality are in Chapter 16 in Table 16-38, Potential Mitigation Measures for Construction and Operation Activities Related to Other Indirect and Additional Actions, and Table 16-39, Potential Mitigation Measures for Construction and Operation Activities Related to Non-Flow Measures, and are referenced in Chapter 13, Service Providers, Impact SP-1 if an action resulted in construction or operation of a water supply or wastewater treatment project. Finally, air quality is included in the cumulative impact analysis in Chapter 16 with respect to the evaluation of other indirect and additional actions and in Chapter 17, Cumulative Impacts, Growth Inducing Effects, and Irreversible Commitment of Resources.</p> <p>Diesel pumping is specifically addressed in Appendix B, which indicated that although it is unknown what proportion of groundwater pumping would use electric- or diesel-powered pumps, the compliance with air district rules and requirements would help to reduce the possibility of significant air quality and health risk impacts. Similarly, the SED indicates on page 14-34 of Chapter 14 that it “is currently unknown what proportion of ground water pumping at deep wells would use electric- or diesel-powered pumps because it is unknown exactly which existing wells would pump more under the LSJR alternatives.” (See also Chapter 16 (Section 16.2.2, Substitution of Surface Water with Groundwater and Table 16-7, Potential Environmental Effects Associated with Substituting Surface Water with Groundwater).) Sufficient detail (e.g., precise locations of diesel pumps and sensitive receptors, types of and amount of diesel pumps, activities and emissions associated with diesel pumps, etc.) is not available at this programmatic-level of analysis to allow for the characterization of emissions and associated health risks from increased diesel pump activities associated with the plan amendments. This is because health risk assessments from exposure to emissions from these types or sources are typically only conducted when these project-specific information is available to accurately and adequately evaluate the localized effects associated with diesel emission sources. As noted by the U.S. Department of Agriculture, most deep water wells throughout California are powered by electric pumps (USDA 2014). Nonetheless, the State Water Board does not have direct control over pump activities</p>

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		<p>significant if the LSJR alternatives result in any of the following conditions. Generate GHG emission, either directly or indirectly, that have a significant impact on the environment.” SED at 14-15. The abject defectiveness of this abbreviated threshold of significance is explained by the CEQA Guideline definition of a threshold of significance:</p> <p>“A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined as less than significant.”</p> <p>§15064.7(a). The SED’s embryonic threshold of significance lacks “an identifiable quantitative, qualitative or performance level” and therefore is insufficient for CEQA purposes.</p> <p>Public agencies are encouraged to adopt thresholds of significance. §15064.7. For evaluating individual projects the State of California and regional state agencies offered multiple thresholds of significance for global warming. For instance, the South Coast Air District believes a project emitting three tons of GHG a year is significant. South Coast Air Quality Management District, Draft Guidance Document--Interim CEQA Greenhouse Gas (GHG) Significance Threshold (October 2008). AB 32 establishes a state goal of reducing GHG emissions to 1990 levels by 2020 (a reduction of approximately 25 percent from forecast emission levels).</p> <p>Recently the State Air Resources Board concluded that the threshold should either be a zero threshold or, if a non-zero threshold is employed it “must be sufficiently stringent to make substantial contributions to reducing the State’s GHG emission peak, to causing that peak to occur sooner or to putting California on the right track to meet its interim (2020) and long term (2050) emissions reduction targets.” California Air Resources Board. Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significant Thresholds for Greenhouse Gases under the California Environmental Quality Act (October 24, 2008). In any event, the threshold is either a net no increase in emitting GHG or “stringent” steps to foster attaining the 2020 and 2050 goals.</p> <p>Since this public agency is acting as an agency of the State of California, it is bound by Executive Order Number 3-05 (June 1, 2005) calling for a reduction in GHG emissions to 1990 levels by 2020 and for an 80 percent reduction in GHG emissions to 1990 levels by 2050. This Executive Order constitutes a mandatory duty to all state agencies and constitutes a threshold of significance whenever a state agency is reviewing a proposal.</p> <p>At least two fatal flaws are embedded in the SED concerning GHG. First, the section lacks a</p>	<p>and it is not obligated, nor required, to speculate on the number of diesel groundwater wells that may increase their pumping or their location adjacent to potentially sensitive receptors within the plan area or the number of new groundwater wells that may be constructed within the plan area as a result of actions taken by others. It should be noted, however, that it is anticipated that any potential emissions associated with increases in diesel agricultural pump activities could be somewhat offset as older, more heavily polluting engines are replaced by new, less-polluting diesel (or even electric) pumps through normal equipment turnover. In addition, programs, such as the San Joaquin Valley Air Pollution Control District’s Voluntary Emission Reduction Agreement and Indirect Source Review Rule and ARB’s Carl Moyer program, incentivize the replacement of these types of diesel engines through the use of grants and subsidies.</p>

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		<p>threshold of significance involving “an identifiable quantitative, qualitative or performance level”. Instead the threshold of significance has as the threshold “significance”. This tautological threshold prevents the reader from determining whether the impact is significant or not. Instead, the section, without any evidentiary support, concludes the emissions of a lone single project will not cause global climate change. Yet the various thresholds of significance discussed earlier, and ignored by the SED, do not focus on this question. Instead, the thresholds of significance focus on whether the proposal helps or hurts efforts to meet the 2020 and 2050 goals. Without a threshold of significance statement the entire analysis lacks an intellectual context and results in omitting relevant information.</p> <p>Indeed, a SED’s sketchy treatment of the threshold or method to conclude whether an environmental effect is significant renders such a SED legal deficient. In <i>Protect the Historic Amador Waterways v. Amador Water Agency</i> (2004) 116 Cal.App.4th 1099. The court discussed the use of thresholds in determining (1) whether to prepare an EIR and (2) whether any of the possible significant environmental effects of the project will, in fact, be significant. Id. at 1106-09. The court held that “the fact that a particular environmental effect meets a particular threshold cannot be used as an automatic determinant that the effect is or is not significant...a threshold of significance cannot be applied in a way that would foreclose the consideration of other substantial evidence tending to show the environmental effect to which the threshold relates might be significant.” Id. at 1109.</p> <p>In the EIR, the Amador Water Agency set forth various standards of significance, which mirrored Appendix G sample questions. The agency determined the reduced stream flows “are insignificant since the thresholds developed from the standardized Appendix G checklist make it so.” Id. at 1111. Petitioner asserted the agency abused its discretion by adopting narrow and irrelevant thresholds of significance which did not address the particular physical change the project would have on the seasonal reduction of surface flow in local streams.</p> <p>The court did not even address petitioner’s claim because “contrary to CEQA requirements, the EIR fails to explain the reasons why the Agency found the reduction in stream flow would not be significant.” Id. at 1111. The court held the EIR provided nothing but a “bare conclusion” because it simply explained how construction would affect existing local hydrology by reducing surface flow and then baldly concluded the impact would not be significant. Id. Because the EIR lacked a “statement of reasons”, the court was unable to determine whether the agency reached its “less than significant” conclusion based on substantial evidence in the record or because it applied standards of significance that did not address reduction in stream flow as a potential environmental effect of the project. Id. at 1112. Either way, the agency abused its discretion by omitting the required statement of reasons. Id.</p> <p>Second, the SED does not provide information about the amount of GHG produced by the</p>	

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		<p>Project and whether the amount emitted facilitates meeting the 2020 and 2050 goals. In short, rather than contribute to reducing GHG emissions to 1990 standard this project has the individual characteristic of making the GHG situation substantially worse. This means, according to the Governor’s Executive Order, the Project has a direct significant environmental effect to GHG. Accordingly, under any of the proposed and adopted thresholds of significance discussed earlier, the Project’s individual impact on GHG is significant. The SED omits relevant information and data and reaches the wrong conclusion about whether the impact is significant or not.</p> <p>Besides presenting a flawed analysis due to the lack of a legally sufficient threshold to evaluate the potential impact, the SED also fails to address at least one potentially significant environmental effect. The preferred proposal will induce agricultural operations to rely more on groundwater to make up for the loss of surface water lost as surface water is diverted to environmental purposes. This means agriculture will rely more heavily on gas diesel pumps to obtain the groundwater that is being substituted for surface water. The SED fails to make any effort to quantify the significance of this material change in agricultural practices induced by the preferred alternative. Certainly the amount of additional pumping could be quantified and the amount of additional gas diesel emitted as a result of this new policy could be quantified and evaluated against existing air pollution standards. In addition, the SED could correlate the increased emission of diesel pollution to increase incidents of health ailments.</p> <p>Failing to correlate the Project’s adverse air quality impacts to increased incidents of health ailments constitutes a prejudicial abuse of discretion. Health problems caused by a project must be addressed in an EIR, including health effects caused by increases in air pollution. Bakersfield at 1220. Specifically, CEQA requires an EIR to discuss “health and safety problems caused by the physical changes” by the proposal. §15126.2 (a). In order to meet CEQA’s disclosure requirement, an EIR must “correlate the identified adverse air quality impacts to resultant adverse health effects.” Bakersfield at 1219. “Correlate” is defined as: “to bring (a thing) into mutual relation (with another thing); calculate or show the reciprocal relation between; specif., to bring (one or two related or interdependent quantities, sets of statistics, etc.) into contrast (with the other).” Webster’s New World Dictionary 319 (2d College ed. 1985)</p> <p>Thus, the court in Bakersfield used “correlate” to mean a SED must disclose the proportional relationship between increased tonnages in air pollution and increased incidents of health ailments. This SED fails to comply with this necessary informational disclosure requirement. Indeed, Bakersfield teaches us a truncated analysis involving a bare statement that increased air pollution tonnages means more people get ill fails to satisfy CEQA’s information disclosure requirement. In Bakersfield, the two EIRs at issue calculated the approximate increased tonnage of air pollution and then baldly concluded that more air pollution means more health and respiratory ailments. Id. at 1220. According to Bakersfield, this embryonic level of detail is insufficient and resulted in the Appellate Court rejecting the air quality analyses for failing to quantify or correlate the relationship between increased health ailments and increased air pollution. Id. at 1220-1221. Accordingly, it is not enough</p>	

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		<p>for a SED to simplistically conclude air pollution will increase and then supply a laundry list of pollutants and related health effects. Rather, CEQA is satisfied only when a SED discloses and quantifies anticipated increases of health ailment events resulting from a project's increases in air pollution tonnages.</p> <p>As Bakersfield holds, brief references to, or the listing of, potential respiratory illnesses do not satisfy CEQA. Bakersfield at 1220. It is only when correct and feasible scientific analysis is conducted and the SED calculates the significance of the impact in terms of increased events of disease and suffering, are the public and decision makers notified of a project's true impacts. This correlation information is scientifically possible and legally required (Bakersfield at 1220), and the omission amounts to a prejudicial failure to proceed in the manner required by law.</p> <p>Moreover, the SED fails to discuss the feasibility of multiple mitigation measures that could be imposed to reduce this significant effect. CEQA requires all feasible mitigation measures to be incorporated into a project, even if the environmental effect remains significant. The State of California, Office of the Governor, Office of Planning and Research, has identified thirty-three (33) feasible mitigation measures to reduce GHG and attain the 2020 and 2050 goals. See State of California, Office of Planning & Research. CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review (June 19, 2008). Each mitigation measure is feasible for the proposal and the SED has a duty to identify and discuss each proposed measure. Failing to perform this task results in an omission of information and failure to proceed in a manner required by law.</p>	
1235	26	<p>The SED is fatally flawed and must be redone again. The SED must utilize a model and assumptions that accurately represents baseline and water supply operations. We appreciate the opportunity to comment and look forward to working with your staff on an additional revised and recirculated SED.</p>	<p>Please see Master Response 1.1, General Comments, regarding recirculation. Please see Master Response 2.5, Baseline and No Project, regarding the characterization of the baseline in the SED. Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the modeled baseline and assumptions incorporated into the model.</p>
1236	1	<p>As an overarching point, ELC [Earth Law Center] has significant concern over the inability of the Draft Revised SED to protect Sacramento-San Joaquin Bay Delta ("Bay-Delta") water quality, particularly as it pertains to the protection of aquatic species and habitats. The importance of the extant effort, particularly in light of the multiple stressors already plaguing Delta health and the threats still to come, demand careful attention to full and accurate application of the law and facts in the decisionmaking task before us. Unfortunately, the Draft Revised SED fails to meet that challenge.</p>	<p>Please see Master Response 1.1, General Comments, for responses to general comments regarding the plan amendments. Please see Master Response 3.1, Fish Protection, regarding the scientific justification of the plan amendments for the reasonable protection of the beneficial use of fish.</p>
1236	2	<p>ELC [Earth Law Center] believes that the Draft Revised SED must be revised and recirculated for additional public review for the following reasons:</p> <ul style="list-style-type: none"> - California has a federal mandate under the Clean Water Act (CWA) to protect waterway beneficial uses, particularly "protection and propagation of fish, shellfish, and wildlife" (CWA Section 101(a)(2)). This mandate may properly impact individual water rights as needed to address "legitimate and necessary water quality considerations." Accordingly, the Draft Revised SED must specifically consider CWA compliance in developing and assessing alternative flow scenarios. 	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding the Clean Water Act and the California Porter-Cologne Water Quality Control Act. The State Water Board is required to "establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses" (Wat. Code, § 13241). Beneficial uses of water that may be protected against degradation include "domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Id., § 13050, subd. (f)). The State Water Board establishes water quality objectives at a level that will reasonably protect the beneficial uses, after considering a number of societal, economic, and environmental</p>

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		<ul style="list-style-type: none"> - State flow (and salinity) objectives must meet CWA requirements to fully protect – not “reasonably” protect – beneficial uses. If there are multiple use designations, the level of quality necessary to support the most sensitive uses must be maintained. Uses cannot be balanced away, and application of the Section 13241 factors cannot result in beneficial use protection that is less than that mandated by the CWA. - As a result of its flawed application of the law and facts, the Draft Revised SED includes a flow proposal (30 to 50% of unimpaired flow, with a starting flow of 40% of unimpaired flow, for February through June for the San Joaquin River and its tributaries) that will fail to protect existing beneficial uses. Indeed, the state by its own data is in danger of acting to eliminate existing beneficial use(s), in direct violation of the CWA. - The CWA specifically allows for incidental impacts on water rights to occur as a result of actions necessary to address water quality concerns, a point decisively upheld by the U.S. Supreme Court. The state cannot avoid CWA based on a misunderstanding of the relationship between water quality and quantity under the law. The CWA must guide the state’s development of criteria to protect beneficial uses impacted by flow. - The Draft Revised SED also includes an overly broad “state of emergency change provision,” which would likely be used to further weaken already inadequate flow requirements. This provision is contrary to the CWA, which does not appear to contain an emergency exception for a state to waive its duty to implement and enforce water quality standards. Additionally, with regards to droughts, we can no longer call them “emergencies” and then significantly weaken our ecosystem protections. Droughts have always occurred with regularity in California, and they will continue to increase in frequency and severity as climate change impacts worsen. 	<p>factors.</p> <p>Please also see Master Response 1.2, and Master Response 1.1, General Comments, for information regarding the separate process of developing the Delta Flow Criteria Report and the plan amendments, and the consideration of beneficial uses and the public trust when establishing objectives for the protection of competing uses. The Delta Flow Criteria Report determined, among other things, that 60 percent of unimpaired SJR inflow from February to June was necessary to preserve the attributes of a natural, variable system to which native fish species are adapted. This report only presented a technical assessment of flow and operational requirements to provide fishery protection under existing conditions. In setting flow objectives with regulatory effect, the State Water Board evaluates the effects of objectives through a broad evaluation of public trust and public interest concerns including, but not limited to, aquatic resources, economics, reservoir storage, power production, and groundwater.</p> <p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for discussions on the science and policy justification for the LSJR Alternative 3 (40 percent unimpaired flow proposal) and the emergency provision.</p>
1236	3	<p>Ultimately, to be effective, the decisions of the SWRCB to protect aquatic life and habitats through improved flows should be enshrined in law through water rights for waterways, prioritized to ensure that flows are available when needed. [Footnote 2: See Stanford Law School Environmental Law Clinic & Earth Law Center, California Water Governance for the 21st Century (2017), available at: http://www.earthlawcenter.org/s/California-Water-Governance-for-the-21st-Century-2017.pdf.] We must care for the waters that support us in order to ensure our collective, long-term well-being.</p>	<p>Please refer to response to comments 1236-1 and 1236-2.</p>
1236	4	<p>The Clean Water Act Requires Protection of Beneficial Uses through Science-Based Criteria that Address the Most Sensitive Uses.</p> <p>The Draft Revised SED’s analysis avoids direct interaction with the Clean Water Act, choosing instead to rely on Porter-Cologne provisions such as Sections 13000 and 13241, which call only for the highest water quality that is “reasonable” in light of competing uses and other factors. However, as noted by the state Supreme Court, Porter-Cologne “cannot authorize what federal law forbids.” [Footnote 3: City of Burbank v. State Water Resources Control Bd., 35 Cal.4th 613, 626, 108 P.3d 862 (2005).] Under the federal Constitution’s Supremacy Clause (Art. VI), a state law that conflicts with federal law, as the weaker Porter-Cologne provisions clash with CWA requirements, is “without effect.” [Footnote 4: Id.]</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, for a description of the Porter-Cologne Water Quality Control Act and the Clean Water Act and compliance by the State Water Board with both acts throughout the water quality control planning process. The proposed water quality objectives are consistent with the Clean Water Act. Section 303 of the Act requires the adoption of standards which “protect the public health or welfare, enhance the quality of water and serve the purposes of [the Clean Water Act].” The purposes of the Act are defined in Sections 101(a)(2) and 303(c). Section 101(a)(2) establishes a national goal, wherever attainable, of water quality “which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water....” Section 303(c) requires that water quality standards be established “taking into consideration [the] use and value [of navigable waters] for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial and other purposes, and also taking into consideration their use and value for navigation.” The Clean Water Act regulations require the states to adopt “those water quality criteria that protect the designated use.” 40 C.F.R. § 131.11. Water quality criteria (akin to water quality objectives under state law) are “constituent concentrations, levels, narrative statements, representing a quality of water that supports a particular use. 40 C.F.R. § 131.3(b). The criteria must be based on “sound scientific rationale and</p>

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		<p>The CWA was established to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” [Footnote 5: CWA § 101(a); PUD No. 1 of Jefferson County v. Washington Department of Ecology, 511 U.S. 700, 704 (1994) (PUD No. 1). For most of the CWA’s implementation history, regulatory attention has been primarily focused on the chemical integrity of waterways, even though the letter of the law demonstrates that it was also written to address other elements of waterway health. Regulatory agencies have significantly increased their attention on biological integrity over the last 5-10 years. Physical integrity is now starting to reach the regulatory docket, particularly since the PUD No. 1 Supreme Court decision, with more states adopting narrative flow criteria and taking other actions under the CWA to create more flows in waterways.] To ensure that water quality improves, rather than degrades, the CWA requires state adoption of water quality standards that “shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses.” [Footnote 6: CWA § 303(c)(2)(A); PUD No. 1 at 704.] The use of waterways for the “protection and propagation of fish, shellfish, and wildlife” was given special attention through the “fishable/swimmable” provision in CWA 101(a)(2). This provision effectively creates a rebuttable presumption that these uses are attainable unless a state or tribe “affirmatively demonstrates, with appropriate documentation, that such uses are not attainable” [Footnote 7: See, e.g., U.S. EPA, “Water Quality Standards Academy, Key Concepts (Module 2.c),” available at: http://water.epa.gov/learn/training/standardsacademy/mod2/page4.cfm.] (though “existing uses” cannot be eliminated). [Footnote 8: 40 CFR §§ 131.10(g), (h)(1)]</p> <p>In setting criteria to protect the beneficial uses, U.S. EPA regulations [Footnote 9: 40 CFR § 131.11; see also 40 CFR § 131.6.] require states to “protect [not ‘reasonably’ protect] the designated use.” The EPA regulations add that: [s]uch criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use. (Emphasis added.) The regulations conclude that criteria may be based on U.S. EPA Guidance developed pursuant to CWA Section 304(a) or “[o]ther scientifically defensible methods,” including biomonitoring. In other words, criteria must protect the most sensitive beneficial use and must be based on science. Other considerations (such as cost) do not factor into the development of criteria.</p>	<p>must contain sufficient parameters or constituents to protect the designated use.” 40 C.F.R. § 131.11. For waters with multiple use designations, the criteria must support the most sensitive use.” Id.</p> <p>The proposed objectives are based on sound scientific rationale (see Appendices C and E) and contain sufficient parameters (e.g., numeric flow requirements and salinity levels) to protect fish and wildlife and agricultural uses. For more information on how the flow objectives protect fish and wildlife beneficial uses, please see Master Response 3.1, Fish Protection, and Chapters 7 and 19. Please see Master Response 3.3, Southern Delta Water Quality, and Appendix E for more information on how the proposed salinity objective protect agricultural beneficial uses. The objectives also support the most sensitive beneficial uses. For example, the plan amendments focus on flow to protect sensitive fish and wildlife that have been adversely affected by reduced flows. They also focus on and protect the most sensitive beneficial use affected by salinity, agriculture.</p> <p>The fact that the State Water Board is required to consider the factors in Water Code section 13241, such as economics, is immaterial given that the proposed objectives will protect fish and wildlife and agricultural beneficial uses, in accordance with the Clean Water Act.</p>
1236	5	<p>The San Joaquin River Flow Objectives in the Draft SED Do Not Protect Fish and Aquatic Life as Required by the Clean Water Act.</p> <p>In its August 2010 flow criteria report, the Water Board found that “[t]he best available science suggests that current flows are insufficient to protect public trust resources,” [Footnote 10: SWRCB, “Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem,” p. 2 (Aug. 3, 2010) (2010 Flow Report) available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf.] and that “[r]ecent Delta flows are insufficient to support native Delta fishes for today’s habitats.” [Footnote 11: Id. at p. 5.] The Board concluded that:</p> <p>In order to preserve the attributes of a natural variable system to which native fish species</p>	<p>As described in the SED, Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, and in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, the State Water Board recognizes that reductions in flows and alterations to the flow regime in the SJR Basin have negatively impacted fish and wildlife beneficial uses. A goal of the plan amendments for the LSJR flow objectives is to restore more natural habitat conditions for native fish species to address key factors that have contributed to historic declines and currently act to limit the success of these species. Please refer to Master Response 3.1, Fish Protection, for more information regarding the adequacy of the plan amendments for providing fish protection.</p> <p>The 2010 Delta Flow Criteria Report was a separate and unique document that only considered fish and wildlife beneficial uses, whereas a Water Quality Control Plan needs to consider all beneficial uses including, but not limited to fish and wildlife, municipal and domestic supply, agricultural supply, groundwater recharge, and recreation. Please refer to the following master responses for additional information</p>

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		<p>are adapted, many of the criteria developed by the State Water Board are crafted as percentages of natural or unimpaired flows. These criteria include... 60% of unimpaired San Joaquin River inflow from February through June.[Footnote 12: Id. (emphasis added).]</p> <p>By contrast with the scientifically-supported flow criteria that would protect the well-being of sensitive fish and other aquatic life, the Draft Revised SED recommends a flow objective for the San Joaquin River and its tributaries of 30 to 50% unimpaired flow, with a starting point of 40% unimpaired flow from February to June.[Footnote 13: The vague nature of the narrative standard further facilitates this lack of attention to the flows needed to protect beneficial uses. In particular, the narrative objective calls on the state to “[m]aintain flow conditions from the San Joaquin River Watershed to the Delta at Vernalis, together with other reasonably controllable measures in the San Joaquin River Watershed, sufficient to support and maintain” beneficial uses, focusing on flows that “reasonably contribute” to maintaining beneficial uses. Draft Revised SED, Executive Summary, p. ES-11. The continued, inappropriate focus on “reasonably” attainable flows will not support beneficial uses. By contrast, Tennessee’s narrative</p> <p>flow standard to protect fish and aquatic life is direct: “Stream or other waterbody flows shall support the fish and aquatic life criteria.” Tennessee Rule 1200-04-03-.03 – Criteria for Water Uses, available at:</p> <p>http://tn.gov/sos/rules/1200/1200-04/1200-04-03.20110531.pdf.] The lower end of this range barely skirts current flows,[Footnote 14: See, e.g., Draft Revised SED, Executive Summary, p. ES-12. (“[H]istorical median February– June flows from 1984–2009 in the Stanislaus, Tuolumne, and Merced Rivers were, respectively, 40, 21, and 26% of unimpaired flow.”)] which the Draft Revised SED acknowledges have been contributing to the overall decline in salmon and other fish populations.[Footnote 15: See e.g., Draft Revised SED, p. ES-10 (“[t]he flow changes and physical habitat modification activities (e.g., gravel</p> <p>mining) have resulted in poor habitat conditions for native fishes and native LSJR fish populations (e.g., Chinook salmon and Central Valley steelhead) have declined.”)]. And the upper end of this range still falls well short of the 60% unimpaired San Joaquin River inflow recommended in the August 2010 flow criteria report.</p> <p>The Water Board attempted to justify this figure its Executive Summary of the Draft Revised SED, stating that “[e]stablishing the percent of unimpaired flow reflects the SWRCB’s explicit balancing of competing beneficial uses—the allocation of water to environmental uses relative to other, primarily agricultural, uses.”[Footnote 16: Draft Revised SED, Executive Summary, p. ES-13 (emphasis added).] As we have just seen, the CWA does not provide for “balancing” beneficial uses; instead, it mandates adoption of criteria that “support the most sensitive use” – in this case, the protection of fish and aquatic life. Rather than the 60% demanded by science, the Draft Revised SED’s inattention to CWA requirements has produced criteria far below that needed to protect sensitive beneficial uses, and so runs afoul of the CWA.</p>	<p>regarding the 2010 Delta Flow Criteria Report:</p> <ul style="list-style-type: none"> • Master Response 1.2, Water Quality Control Planning Process; and • Master Response 3.1, Fish Protection. <p>Development of the plan amendments has proceeded in accordance with relevant state and federal requirements governing water supply, surface hydrology, and water quality. Chapter 5, Surface Hydrology and Water Quality, provides a description of the various requirements, which include, but are not limited to, the Clean Water Act, antidegradation policies, and the Porter-Cologne Act. Please refer to the following master responses for additional information regarding the above requirements:</p> <ul style="list-style-type: none"> • Master Response 1.1, General Comments; and • Master Response 1.2, Water Quality Control Planning Process. <p>Chapter 23, Antidegradation Analysis, also provides a description of antidegradation policies. A lowering of water quality in the Stanislaus, Tuolumne, and Merced Rivers, the LSJR, and the southern Delta would not result from the plan amendments for the LSJR flow objectives; as such, an antidegradation analysis was not performed.</p> <p>The State Water Board recognizes that water is a limited resource that needs to be protected for various uses and public trust considerations that are often at odds with each other. The State Water Board balanced these competing demands while developing the plan amendments for the LSJR flow objectives. Please also refer to the following master responses for additional information regarding the public trust and consideration of competing uses of water:</p> <ul style="list-style-type: none"> • Master Response 1.1, General Comments; and • Master Response 1.2, Water Quality Control Planning Process. <p>Please also refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for additional descriptions and clarifications regarding the plan amendments, including the narrative objective, and discussion of the relationship between the salmon doubling objective and the LSJR flow objectives.</p>

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Ltr#	Cmt#	Comment	Response
		<p>In addition to its inappropriate “balancing” of beneficial uses, the SWRCB appears to have also shaved the science-based 60% flow figure down to the flawed 30 to 50% flow range (with a starting point of 40%) through a misplaced reliance on Porter-Cologne and its Section 13241 factors,[Footnote 17: See e.g. Draft Revised SED, pp. ES-64, 5-52.] rather than protecting the most sensitive beneficial use as required by the CWA. As the Draft Revised SED states in the Executive Summary, “[t]he flow proposal would provide the flow conditions necessary to reasonably protect fish and wildlife beneficial uses.” [Footnote 18: Draft Revised SED, p. ES-4.] This deference to “reasonable” protection presumably arises from the following statement of policy under Porter-Cologne:</p> <p>The Legislature further finds and declares that activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.[Footnote 19: Calif. Water Code § 13000 (emphasis added).]</p> <p>This provision, while modern at its adoption in 1969, falls short of the mandates of the CWA, adopted three years later. Water Code Section 13241 similarly requires the adoption of objectives that will only ensure the “reasonable protection of beneficial uses.” The proof of the impacts is in the flow figures – 60% when consistent with the CWA (i.e., based on science rather than also on economics and other factors), [Footnote 20: 2010 Flow Report, p. 2] and 30 to 50% (with a starting point of 40%) when the “balancing” and Section 13241 factors are applied.</p> <p>As noted above, the state Supreme Court has found that Porter-Cologne “cannot authorize what federal law forbids.” The federal CWA dictates that criteria must be based on science, and that criteria must protect the most sensitive beneficial use. The state may consider other factors if it so chooses, but that analysis cannot result in criteria less protective than dictated by the CWA. [Footnote 21: City of Burbank, 35 Cal.4th at 627-28] If the state desires to take action that would impact such uses, [Footnote 22: Existing, “Tier 1” uses, however, cannot be degraded further. 40 CFR § 131.12(a)(1)] it must complete an antidegradation analysis that clearly demonstrates the need for the change and justifies it with data. Pre-empting this process with state factors that throw in the towel on fish and wildlife protection before effort has even begun cannot be construed as consonant with the CWA.[Footnote 23: It bears noting that this, of course, is true for the salinity objectives as well.]</p> <p>Significant work remains for the state to craft a solution to the disappearance of fish populations and healthy aquatic habitat in the Lower San Joaquin River.</p>	
1236	6	The Clean Water Act encompasses the use of flow modifications to protect beneficial uses.	Please see Master Response 1.2, Water Quality Control Planning Process, for more information regarding the relationship between Porter-Cologne and the Clean Water Act, the separate process of developing the Delta Flow Criteria Report, and the consideration of beneficial uses and the public trust when establishing

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		<p>The Draft Revised SED’s reliance on Porter-Cologne over the stricter requirements of the CWA perhaps can be attributed to a mistaken perception that the CWA does not address flows. This issue was decided to the contrary, however, by the U.S. Supreme Court in PUD No. 1 of Jefferson County v. Washington Department of Ecology, 511 U.S. 700 (1994) (PUD No. 1), which found the distinction between water quality and quantity under the CWA to be “artificial.”</p> <p>In PUD No. 1, Supreme Court took up the question of whether Washington state had properly issued a CWA Section 401 certification imposing a minimum stream flow requirement to protect fish populations. The Supreme Court held that conditioning the certification on minimum stream flows was proper, as it was needed to enforce a designated use contained in a state water quality standard. [Footnote 24: PUD No. 1, 511 U.S. at 723] In reaching this decision, the court noted that “a project that does not comply with a designated use of the water does not comply with the applicable water quality standards,” and that Washington had properly determined that the project as proposed (i.e., without the minimum flow conditions) would have been inconsistent with the applicable designated use of “[s]almonid [and other fish] migration, rearing, spawning, and harvesting.” [Footnote 25: Id. at 714]</p> <p>In responding to project proponents’ argument that the CWA only addresses water “quality” and excludes regulation of water “quantity,” the Supreme Court held that:</p> <p>[t]his is an artificial distinction. In many cases, water quantity is closely related to water quality; a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery. [Footnote 26: Id. at 719]</p> <p>The Supreme Court specifically took note of CWA Sections 101(g) and 510(2), which address state authority over the allocation of water as between users. The Court found that these provisions “do not limit the scope of water pollution controls that may be imposed on users who have obtained, pursuant to state law, a water allocation.” This conclusion is supported by the “except as expressly provided in this Act” language of Section 510(2), which conditions state water authority; and by the legislative history of Section 101(g), which allows for impacts to individual water rights as a result of state action under the CWA when “prompted by legitimate and necessary water quality considerations.” [Footnote 27: Id. at 720 (“See 3 Legislative History of the Clean Water Act of 1977 (Committee Print compiled for the Committee on Environment and Public Works by the Library of Congress), Ser. No. 95–14, p. 532 (1978) (“The requirements [of the Act] may incidentally affect individual water rights. . . . It is not the purpose of this amendment to prohibit those incidental effects. It is the purpose of this amendment to insure that State allocation systems are not subverted, and that effects on individual rights, if any, are prompted by legitimate and necessary water quality considerations”).” See also Memorandum from U.S. EPA Water and Waste Management and General Counsel to U.S. EPA Regional Administrators, “State Authority to</p>	<p>water quality objectives for the reasonable protection of different beneficial uses. Please also see Master Response 2.1, Amendments to the Water Quality Control Plan, for the science and policy justification of the plan amendments. Finally, please 3.1, Fish Protection, regarding more data and information about the expected benefits in response to implementation of the plan amendments. Please also see response to comment 1236-4.</p>

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		<p>Allocate Water Quantities – Section 101(g) of the Clean Water Act” (Nov. 7, 1978), available at: http://water.epa.gov/scitech/swguidance/standards/upload/1999_11_03_standards_water_quantities.pdf.]</p> <p>Other states and U.S. EPA Regions have already embraced this direction and protected aquatic beneficial uses through actions that impact flows. For example, numerous states [Footnote 28: At a minimum, the following states have adopted flow criteria: Tennessee, Kentucky, Vermont, New Hampshire, Rhode Island, New York, Virginia, and Missouri. Letter from U.S. EPA Region to Alabama Department of Environmental Management, pp. 10-12 (Nov. 19, 2012) (U.S. EPA Reg. 4 Letter) (attached).] have already adopted “instream flow water quality standards,” with Texas and New Mexico (among potentially others) examining them as well. In a letter to the state of Alabama, U.S. EPA Region 4 recommended that Alabama “utilize the ... CWA to develop instream flow water quality standards (WQS) for the protection of all designated uses and for application in all other purposes under the CWA.” [Footnote 29: Id., p. 9] U.S. EPA Region 4 then concluded that “Alabama should not set conditions which would be less stringent than or in conflict with the state WQSs under the CWA.” [Footnote 30: At a minimum, the following states have adopted flow criteria: Tennessee, Kentucky, Vermont, New Hampshire, Rhode Island, New York, Virginia, and Missouri. Letter from U.S. EPA Region to Alabama Department of Environmental Management, pp. 10-12 (Nov. 19, 2012) (U.S. EPA Reg. 4 Letter) (emphasis in original)] Additionally, shortly after the PUD No. 1 decision, U.S. EPA Region 1 issued a letter to the Rhode Island Department of Environmental Management reiterating the findings of PUD No. 1 and recommending numerous option for the state to address flow issues through the CWA, including pointing out that “[f]ishery restoration/management plans can also be integrated into water quality standards.” [Footnote 31: Letter from U.S. EPA Region 1 to Rhode Island Department of Environmental Management (June 25, 1996) (U.S. EPA Region 1 Letter) (attached).]</p> <p>In summary, the CWA Act demands the protection of beneficial uses through science-based criteria that protect the most sensitive uses fully. Flow criteria cannot be less stringent than or in conflict with state water quality standards under the CWA. The Draft Revised SED’s recommendation of 35 to 50% unimpaired flow will fail to reverse the longstanding degradation of fish and aquatic life and habitat uses, and is far less than the science-based 60% flow properly focused on protection of these sensitive uses. The state cannot avoid its responsibilities under the CWA by relying on state factors that balance away these beneficial uses.</p>	
1236	7	<p>The Bay-Delta Plan’s state of emergency change provision is illegally broad.</p> <p>The Draft Revised SED attempts to weaken the obligation of the SWRCB to protect flows by including a “state of emergency change provision” that would permit the waiver of water quality standards under certain circumstances. The Draft Revised SED describes the state of emergency change provision as follows:</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the emergency provision in the plan amendments, including how the emergency provision relates to droughts and how it is not intended to be routinely used. The provision includes a requirement that measures will be taken to reasonably protect fish and wildlife beneficial uses in light of the circumstances of the emergency.</p>

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		<p>The current drought has highlighted the need for flexibility to adjust requirements in water rights that implement the current 2006 Bay-Delta Plan objectives during emergencies. [...] Under this emergency provision, the State Water Board, at its discretion or at the request of any affected responsible agency or person, may authorize a temporary change to the implementation of the LSJR flow objectives in a water right proceeding if the State Water Board determines that either (1) there is an emergency as defined by CEQA (Pub. Resources Code, § 21060.3), or (2) the Governor of the State of California or a local governing body has declared a state or local emergency pursuant to the California Emergency Services Act (Gov. Code, § 8550 et seq.). Before authorizing any temporary change, the State Water Board must find that measures will be taken to reasonably protect the beneficial use in light of the circumstances of the emergency. [Footnote 32: Draft Revised SED, Executive Summary, p. ES-19.]</p> <p>This provision is concerning in that it seemingly disregards the state’s legal obligation to enforce adopted water quality standards – including flow standards – consistent with CWA mandates to fully protect aquatic life. The CWA does not itself appear to contain an emergency exception for a state to waive its duty to implement and enforce water quality standards, whether during a drought or similar circumstances. Additionally, the SWRCB’s proposed power to self-declare a state of emergency under CEQA in order to suspend Lower San Joaquin River flow objectives appears to be an attempt to circumvent the science-based process that determines water quality standards in the first place.</p> <p>The CWA arose out of massive fish kills and other impacts of human misuse that afflicted our nation’s waterways in the late 1960s. Paradoxically, the SWRCB is attempting to ignore the CWA’s protections when they are needed most. Without full protection of the CWA, Delta fish populations face imminent extinction.</p> <p>Even if the CWA did allow for such broad exceptions, ELC does not believe that a drought rises to the level of an “emergency” supporting waiver of CWA standards (as suggested by the Revised Draft SED). First, Government Code § 8558(b) defines “state of emergency” as:</p> <p>the duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the state caused by such conditions as ... drought ... which, by reason of their magnitude, are or are likely to be beyond the control of the services, personnel, equipment, and facilities of any single county, city and county, or city and require the combined forces of a mutual aid region or regions to combat. [Footnote 33: Government Code § 8558(b) (emphasis added)]</p> <p>Semi-arid California is accustomed to regular “drought” conditions, having experienced 10 multiyear drought sequences extending 41 total years over the last 100. [Footnote 34: See</p>	

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		<p>http://mavensnotebook.com/2015/06/04/this-just-in-groups-sue-department-of-interior-bureau-of-reclamationstate-water-board-and-dwr-to-prevent-fishery-extinctions/] Further, Delta outflow has reached the equivalent of "super-critical dry" runoff conditions in 19 of 40 years since 1975 – i.e, almost half of the last 40 years. [Footnote 35: See Gary Bobker, Protest Petition: Environmental and Public Interest Considerations Re The Bay Institute’s Protest of January 23, 2015 TUCP and Objections to February 3, 2015 SWRCB Executive Director’s Order (Feb. 13, 2015), p. 9, at:</p> <p>www.waterboards.ca.gov/waterrights/water_issues/programs/drought/comments_tucp2015/docs/tbi_bobker021315.pdf] Thus, it seems unreasonable for California to indefinitely liken drought conditions, even outlier droughts, that go on for years and occur repeatedly to an “emergency” in general, or to conditions of “disaster” or “extreme peril” more specifically.</p> <p>An additional issue is whether an “emergency” can duly be declared when it is in large part human-caused. For example, of those 19 years in which Delta outflow reached the “super-critical dry” threshold, only one year – 1977 – would have reached this extremely low level of flow without diversions exacerbating water shortages. [Footnote 36: Id.] Were it not for over-diversion and water mismanagement in the Delta, it would be much harder to argue that a state of “emergency” exists.</p> <p>Nor does drought seem to constitute an “emergency” as defined under the California Environmental Quality Act (CEQA). CEQA’s definition of “emergency” is distinct from Government Code § 8558. Under CEQA, an "emergency" is defined as:</p> <p>a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. “Emergency” includes such occurrences as fire, flood, earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage. [Footnote 37: California Public Resources Code § 21060.3]</p> <p>A drought by definition is not a “sudden, unexpected occurrence,” particularly one that lasts multiple years. Additionally, such droughts may possibly become the “new normal” with climate change. Rather than being targeted towards protecting ecosystems – the entities in the greatest need of support during droughts – a temporary change to water quality standards due to a perceived “emergency” under CEQA during years-long droughts is largely targeted at economic consequences (such as support of large agricultural businesses) rather than actual, time-critical emergency needs.</p> <p>In summary, the inclusion of the state of emergency change provision within the Draft Revised SED threatens numerous aquatic species with significant injury, including actual, imminent extinction if used improperly. The CWA does not include an applicable emergency</p>	

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		<p>exception for droughts, nor does state law allow for non-compliance with water quality control plans unless by statute, supported in writing (the legality of this is questionable, however, where it conflicts with CWA mandates to fully protect beneficial uses). This is particularly true in light of the years-long nature of California droughts over the last several decades.</p>	
1236	8	<p>The role and import of the federal Clean Water Act is noticeably muted in the Draft Revised SED. Instead of developing science-based criteria to protect sensitive aquatic life and habitat beneficial uses, the Draft Revised SED inappropriately relies on an array of weaker state law factors to water down the science-based criteria to recommendations that could worsen, rather than improve, the current, tenuous environmental health of the Delta. The state must redraft and recirculate an SED that fully complies with the clear CWA mandate to protect beneficial uses fully. It also must revise the state of emergency change provision to ensure that flow objectives are enforced when aquatic life and habitat needs them most – such as during regular periods of drought and other periods of water shortages.</p> <p>The state cannot simply stand by while Delta health continues to spiral downward. The CWA provides the tools to begin to reverse this slide and must be used by the SWRCB. In addition, the Board should begin examination of the active use of water rights for waterways to ensure final flow commitments are met. The Delta’s aquatic life and habitats “should not be destroyed because the state mistakenly thought itself powerless to protect them.”[Footnote 38: National Audubon Society v. Superior Court, 33 Cal.3d 419, 452 (1983)] We urge the SWRCB to incorporate these comments into a revised project and SED that will advance the letter and intent of the CWA to ensure a thriving, biodiverse, flowing Delta.</p>	<p>Please see responses to comments 1236-4. The State Water Board is fully aware of the ecological crisis in the Delta and its authorities to regulate flow. That is why it is proposing the plan amendments to protect fish and wildlife and agricultural beneficial uses that meet both the requirements of the Clean Water Act and the Porter-Cologne Water Quality Control Act.</p>
1237	1	<p>I'm writing to express grave concerns with the State Water Resources Control Board's proposed actions on behalf of the City of Newman, a community of 11,000 residents in the Central Valley.</p> <p>As we near the public comment deadline, it is imperative to us that our concerns with your proposal are included in the official record. The City urges you to acknowledge the requests of the numerous cities, school districts, and concerned residents who have voiced their opposition to the Bay-Delta Plan. In an area that is largely dependent on agriculture, a proposal that increases the unimpaired flows of the Merced, Stanislaus, and Tuolumne rivers by 35% would devastate a region that has only just now begun to heal from five years of drought.</p> <p>The public hearings held in Merced and Modesto this past December provided ample evidence that local stakeholders have been left out of a process that will severely impact every aspect of their lives. Safe and reliable access to drinking water, our economic vitality, and our very way of life would all be jeopardized by your proposed plan.</p>	<p>Please see Master Response 1.1, General Comments, acknowledging the concerns of elected representatives and other community members and a discussion regarding the public outreach process for the plan amendments.</p> <p>Please see Master Response 3.6, Service Providers, regarding water for health and safety.</p>
1237	2	<p>Given the serious implications of your proposal, there should have been a credible effort to involve us throughout the development phase, but this simply didn't happen. By allowing stakeholders to comment on the plan only after it was released, you have excluded our</p>	<p>Please see Master Response 1.1, General Comments, regarding the public input process and the release of the Draft 2016 Revised SED based on refinements and changes made as a result of the 2012-2013 comment</p>

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		region from providing valuable local knowledge that could have been used by your scientists and technical experts to create a plan that appropriately balances the competing priorities under your consideration.	period on the Draft SED.
1237	3	<p>To us, "significant, but unavoidable" is more than a phrase - it is a tangible threat and a clear statement of willful disregard for our safety, sustainability, and livelihoods. By failing to include our region in the development process, you have marginalized a community that already suffers from economic challenges and is home to many disadvantage communities primarily comprised of low-income residents.</p> <p>The City of Newman urges you to give consideration to the voices of our community and revise the current plan to reflect the needs of all the parties involved.</p>	<p>The City of Newman is not located in the plan area or the extended plan area, and it is not located above any the four groundwater subbasins in the study area considered in the groundwater impact analysis in Chapter 9, Groundwater Resources. Please see Figure 2-1b, Vicinity Map of Plan Area and Extended Plan Area, and Figure 9-1, Vicinity Map of Groundwater Subbasins, for the boundaries of the plan area, extended plan area and the four groundwater subbasins.</p> <p>Please see Master Response 1.1, General Comments, for detailed discussion regarding the adequacy of the public outreach conducted by the State Water Board.</p>
1238	1	I depend on irrigation water from the Merced River and Lake McClure. As a starting farmer I have used all my family's financial resources to purchase and plant my farm, I don't have the money to drill a well. If I did drill a well my small farm could not cover the capital costs of the well. Without Merced River water there will be a huge financial cost to my family. Without Merced River water my orchard will fail, and we will have to sell our property. While we know the advantages of having a functional business to the people and community, I would like to address the environmental impacts of diverting irrigation water to the delta.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1238	2	I always consider the land use effects of issues. If I were not farming my 16 acre property it would become a ranchette. A domestic well would be drilled, and significant groundwater would be pumped for landscaping and household use. There would be a significant increase in the use of public facilities (roads, schools, etc.) because housing is more intensive use than farming. There would be a significant degradation to the wildlife habitat. Between my farm and the surrounding irrigation canals there are a variety of Birds and Mammals using the property. My small farm hosts Gamebirds, Songbirds, Shorebirds, Raptors, and Foxes. If a house replaced my orchard the biological diversity would be greatly reduced, as the presence of people harassed away the wildlife.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1238	3	I would be put out of farming. I have invested most of my life into becoming a competent farmer. But I don't have inherited capital. If you divert the water I depend on, farming will become out of reach for even more people. Not only is this a cultural cost, it's also an environmental cost. You will be replacing people with skills to improve our food supply with people who just have money.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1238	4	Removing Merced River water from the people who depend on it, will increase groundwater pumping. The overdraft of groundwater in the central valley is a well-documented environmental catastrophe.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1238	5	I am writing this letter to you as Sacramento Valley authorities are dealing with recent storms raising streams and rivers threatening the life and safety of people living in low lying areas, that water will flush trough the Delta. There is already considerable more water moving though the delta that until recently went of the Delta-Mendota Canal and the California Aqueduct. Taking water to increase already increased flows does not make intuitive sense, and it seems like there is also a lack of scientific evidence.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.

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1238	6	As a Bass fisherman, I know that non-native black and striped bass are voracious predators. To devastate the impoverished communities of the central valley while black and striped bass are managed as a trophy fishery is immoral.	Please see Master Response 1.1, General Comments for responses to comments that either make a general comment on the plan amendments or do not raise significant environmental issues.
1239	1	<p>Fish and Aquatic Habitat Flow-related Needs.</p> <p>Salmonids: Limited total in-river flow and significantly altered annual hydrographs have long been identified by Federal and State agencies and others as a primary contributor to the significant declines in Chinook salmon and steelhead populations throughout the San Joaquin River watershed and southern Delta. Based on our review of the draft revised SED and previous analyses, the [Fish and Wildlife] Service believes the proposed unimpaired flow (UF) standards (30-50% UF range, with a starting point of 40%) will provide an overall modest improvement from current conditions for salmonid populations the San Joaquin River and tributaries.</p> <p>However, previous estimates suggest that UF percentages on the higher end of that range in many years, and above 50% in some years are needed to make significant progress toward the SED Salmon Protection Objective (which is based on the CVPIA Doubling Goal). The Service recommends that additional guidance be provided in the draft revised SED to the Stanislaus-Tuolumne-Merced (STM) working group that speaks to these concerns and emphasizes the need for strong consideration of potential negative impacts to fish populations related to any UF proposals below 40% of significant duration during time periods when large numbers of juveniles are present in the system. The Service also recommends that the draft revised SED contain additional detail and emphasis related to coordination with the San Joaquin River Restoration Program (SJRRP).</p> <p>Additional flows from the upper San Joaquin River, increased diversions of those flows in the lower San Joaquin River and the reintroduction of spring-run Chinook Salmon, as part of SJRRP, will certainly have an impact on future conditions and species needs in the lower river and tributaries and consideration of these changes in the larger system in the future are imperative to future decision making and assessments. The Service is not recommending that current or future SJRRP restoration flow and fish reintroduction plans be directly included in the revised draft SED, rather that they are acknowledged more directly and guidance be provided that they must be considered in future planning efforts and UF proposals to achieve success throughout the San Joaquin Basin.</p>	<p>The unimpaired flow approach is intended to capture the natural pattern of variability and retain the attributes of the natural flow regime to which native LSJR basin fish and wildlife adapted, and that is important to support key ecosystem processes. As described in the SED, Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, and Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, higher and more variable flows are anticipated to provide protection for native fish, and improve a number of ecosystem attributes including, but not limited to: (1) native fish communities; (2) food web; (3) habitat availability; (4) geomorphic processes; (5) temperature; and (6) water quality. Please refer to Master Response 3.1, Fish Protection, for more information regarding Appendix C, the unimpaired flow approach and benefits thereof, and flow as a limiting factor for fish decline and the need for higher and more variable flows.</p> <p>Please also refer to Master Response 1.1, General Comments, and Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the need for flow requirements that are higher than those identified in the plan amendments.</p> <p>As described in Appendix K, Revised Water Quality Control Plan, the State Water Board recommends DFW, USBR, NMFS, and USFWS coordinate with the IEP, STM Working Group, and other interested parties to evaluate San Joaquin River Restoration Program flow contributions to flow and water quality requirements at Vernalis. The State Water Board will consider water quality objectives for the stream system above the San Joaquin River’s confluence with the Merced River in future updates to this Plan. Please refer to Master Response 2.1 regarding consideration of the upper SJR, and modifications made to the element of the plan amendments that considers the San Joaquin Restoration Program.</p> <p>Please also refer to Master Response 2.1 regarding the salmon doubling objective. Please see Master Response 2.1 and Master Response 2.2, Adaptive Implementations, for clarification regarding the STM Working Group.</p>
1239	2	White Sturgeon: The [Fish and Wildlife] Service has been a leading force in recent collaborative efforts to locate and track White Sturgeon in the San Joaquin River and south Delta, document and characterize migration patterns and spawning behavior and identify current and potential future sturgeon habitat within the system. This work had resulted in fundamental changes to the understanding of sturgeon presence and activity in the San Joaquin River. Our work has shown that White Sturgeon not only commonly occur in the San Joaquin River in all water year types but may actively spawn in wet years and drier years when cued by relatively modest and short-duration flow increases. The Service recommends that summaries and consideration of these recent findings be added to the draft revised	Please see Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives. Please also review Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, which describes how the LSJR flow objectives will benefit native fish species, including lower temperature and increased flow, which would benefit spawning white sturgeon.

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Ltr#	Cmt#	Comment	Response
		<p>SED along with improved guidance related to the consideration of additional fish species that may be impacted by UF proposals.</p>	
1239	3	<p>Impacts of Flow-shaping: As part of the [Fish and Wildlife] Service review of the draft revised SED, we compared historical hydrographs to 40% of UF (1-day and 7-day average) for the Stanislaus, Tuolumne, and Merced rivers where daily data was available for UF (start of period by tributary: 1998-Tuolumne, 2000-Merced and 2002 Stanislaus) in the January to June period (enclosure 1 [ATT1]). We developed a spreadsheet tool that we will share with the Board and stakeholders if desired for viewing individual years of data in each tributary. For all three tributaries, the shape and volume of available water appeared to be slightly (Stanislaus) or much (Tuolumne and Merced) better under a 40% UF condition than under the current hydrograph.</p> <p>We found several issues worth identifying to the Board. 1) Desirable variability (pulse magnitude) in many years was substantially reduced when a 7-day average was applied and this averaging is also likely to disconnect the releases from other environmental factors (e.g. cloud cover, turbidity, barometric pressure) that are known to influence fish behavior. 2) Averaging over 7 days can also greatly reduce the occurrence of fluvial flows which are important in mobilizing gravel and keeping spawning and macroinvertebrate producing substrates free of fine sediments. 3) According to CDEC, there are many days (and even sustained periods) where the calculated Full Natural Flow from CDEC is zero or negative, especially in January and sometimes February and mostly in the Tuolumne and Merced rivers. Any % UF schedule based on these values will result in no water in the river during a time when fall-run Chinook salmon eggs are incubating and fry are beginning to emerge.</p> <p>A simple solution is to implement a minimum flow threshold rather than trying to forecast precipitation and allocation in real-time, since operational constraints and flood capacity will already dictate maximum flow thresholds. The Service recognizes the significant positive change from a 14-day running average in the initial draft SED to a 7-day running average in the revised draft SED. However, we recommend that guidance emphasizing the strong desire and potential benefits of attempting to achieve even shorter delays in releasing flows during and immediately following storm events that more closely mimic a natural hydrograph be included in the revised draft SED.</p>	<p>The comment described a spreadsheet tool that could be used to view individual years of data in each tributary. These types of tools can be used to identify positive methods to adaptively implement the LSJR flow requirements described in Appendix K, Revised Water Quality Control Plan.</p> <p>The averaging period for the unimpaired flow percent was changed from a 14-day to a 7-day running average based on comments received on the 2012 SED. As this comment indicates, there are biological reasons to increase the magnitude of peak flows achieved on a shorter duration unimpaired flow, however, it becomes more difficult to calculate shorter duration flows. As described in master Response 2.2, Adaptive Implementation, inability to calculate daily, or even 7-day running average flows, will not impede successful implementation because all available information can be used to guide adaptive implementation. This means, for example, that during short duration flow events, flows can be managed based on the expected magnitude of peak flows, using monthly unimpaired flows, combined with information about shorter duration rainfall/runoff. The 7-day average flow provides the accounting timeframe, whenever that information becomes available, over which flows must be provided unless adaptively implemented per the program of implementation.</p> <p>Establishment of a minimum flow threshold within the 7-day averaging period is not needed because the narrative objective already accounts for maintaining inflow conditions that protect fish.</p> <p>Master Response 2.2, Adaptive Implementation, provides additional description and examples of how adaptive implementation may proceed, and the bounds under which it may do so, and also on the issue of averaging period.</p>
1239	4	<p>Adaptive Management</p> <p>General: The [Fish and Wildlife] Service values the desire to adaptively manage flows and the flexibility that is provided to the STM working group in the revised draft SED. However, relying on the STM working group to further develop specific goals and measureable objectives related to flow management is a concern. The Service recommends additional development of the adaptive management process and the inclusion of a more detailed adaptive management framework in the revised draft SED.</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding biological goals, salmon doubling and the salmon protection objective, and the STM Working Group. Please see Master Response 2.2, Adaptive Implementation, for responses to comments regarding adaptive methods, biological goals, and examples of adaptive operations plans. All of the suggestions in this comment can be included in the development of biological goals and other metrics upon which attainment of the narrative fish and wildlife protection goals will be assessed.</p>

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Ltr#	Cmt#	Comment	Response
		<p>Goals and Objectives: Well-defined and measureable goals and objectives are the foundation upon which any successful adaptive management effort relies. Describing and modeling current condition, identifying stressors and potential management actions, predicting outcomes of alternative actions or impacts, developing robust and meaningful monitoring plans, analyzing and synthesizing results, iterative and informed decision making and ultimately tracking success all rely on the ability to define and measure goals and objectives. The Service recommends developing a numeric Salmon Protective Objective, which can be achieved by utilizing the numeric CVPIA doubling goal for each of the San Joaquin River tributaries (USFWS 2001).</p> <p>The CVPIA doubling goal as described in the Final Restoration Plan for the Anadromous Fish Restoration Program (2001) provides numeric goals for fall-run Chinook Salmon for each of the San Joaquin tributaries. To better support these goals, the Service recommends developing objectives for intermediate life stages (e.g. egg, fry, smolt) that fall under the jurisdiction of the Board’s regulatory authority. The Scientific Evaluation Process (SEP) Group formed from the early San Joaquin Accord meetings has developed a comprehensive report (Conservation Planning Foundation for Restoring Chinook and O. mykiss in the Stanislaus River) documenting both the physical characteristics necessary to support recovered salmonid populations, and interim life-stage biological objectives necessary to achieve the doubling goal.</p> <p>Without these objectives, it is nearly impossible to evaluate progress under an adaptive management framework due to the delay in results from the time necessary for outmigrating salmon to return as adults. In addition, the Board should develop (with appropriate partners) similar objectives for the suite of native aquatic species affected by the SED, especially those that state or federally listed, proposed for listing, or are highly invasive (e.g. Asian clams, Egeria).</p> <p>Resources: The Service strongly supports the reliance on adaptive management, including the formation of the STM working group found in the revised draft SED. Our staff looks forward to being active in, and supporting this process. Our greatest concern related to implementation via adaptive management as it is currently described in the revised draft SED relates to the limited amount of guidance and structure that is provided. To be successful, this process will require a significant commitment of resources. The Service recommends a more robust and complete adaptive management framework is included in the revised draft SED. The framework should include more detail regarding the roles and responsibilities of working group representatives, governance and the decision-making processes the working group will operate under, finite biological goals that the working group should prioritize and specific areas of limitation that the working-group will need to consider in crafting flow proposals.</p> <p>The revised draft SED sets a 180-day target for the STM working group to develop, and the Board to consider approval of biological objectives. The Service feels this is an ambitious, yet</p>	

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Ltr#	Cmt#	Comment	Response
		<p>likely unachievable timeline. Working with Reclamation and other partners, the Service has been involved in a similar effort to set biological goals and objectives related to our implementation of the fisheries and water provisions of CVPIA.</p> <p>Also similar to what is described in the revised draft SED, partners in the CVPIA process have been working to define a robust adaptive management framework and simultaneously develop biological goals and objectives. This process has taken well over 2 years and required substantially more directed resources and funding from the Service and Reclamation that anticipated, as well as commitment and in-kind resources from our partners. Based on these efforts, the Service recommends inclusion of a more detailed adaptive management framework in the revised draft SED and less reliance on the STM working group to develop the general structure and process they will operate under.</p> <p>A substantial amount of real-time and long-term monitoring will also be required to successfully implement via adaptive management. A substantial amount of historic data and ongoing additional data collection already exist that will likely be useful for these efforts, but it is collected by multiple entities for various different reasons and accessibility to the data varies widely. Additional monitoring needs will undoubtedly be identified during the formation and ongoing activities of the STM working group as well.</p> <p>The Service recommends the development and inclusion of a monitoring and assessment plan in the revised draft SED. This plan should identify how existing data sources will be leveraged and obtained, how additional monitoring needs will be developed and prioritized, how information will be utilized and how these efforts will be coordinated and funded. [Footnote 1: US Fish and Wildlife Service (USFWS). 2001, Final Restoration Plan for the Anadromous Fish Restoration Program: A Plan to Increase Natural Production of Anadromous Fish in the Central Valley of California.]</p>	
1239	5	<p>[From ATT1:] Background: As part of the US Fish and Wildlife Service’s (Service) review of the draft revised SED, we compared historical hydrographs to 40% of UF (at 1-day and 7-day averaging periods) for the Stanislaus, Tuolumne, and Merced rivers where daily data was available for UF (start of period by tributary: 1998-Tuolumne, 2000-Merced and 2002 Stanislaus) in the January to June period. We developed a spreadsheet tool that we will share with the Board, STM working group and stakeholders if desired for viewing individual years of data in each tributary. The following is a summary of some of the general findings by Service staff based on initial review and assessment of recent conditions and several potential flow scenarios for the 1998-2016 period.</p> <p>-Release volumes would be higher in many years with a 40% UF volume released (Table 1 [ATT1:ATT1]). [Footnote 1: The %UF rates included in Figures 1-4 are provided for example purposes only. The Service is not attempting to propose or recommend any specific %UF rates by including these example figures in this submission.]</p>	<p>Please see response to comment 1239-3 regarding the spreadsheet tool, the averaging period, and the use of adaptive implementation.</p> <p>Please see Master Response 2.2, Adaptive Implementation, for responses to comments regarding adaptive implementation of the proposed plan amendments. The flow range, and the ability to adaptively implement within the range, is the flow requirement. Flow changes within the adaptive range of 30 to 50 percent range must be designed to achieve the narrative fish and wildlife flow objective.</p>

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Ltr#	Cmt#	Comment	Response
		<p>-In many years with large amounts of precipitation (measured in total volume, number of events, or both) there have been substantial reductions in the overall flow released and the number of precipitation events that show a response in downstream releases. Further, the longer the UF averaging period, the more decoupled managed releases become from natural storm events (Figure 1 [ATT1:ATT2]).</p> <p>-There have been several instances where large-scale flow events have not yielded any significant change in releases during the Feb-Jun time period and in some cases may be artificially truncating the season during which river conditions are conducive to native fish (Figure 2 [ATT1:ATT3]).</p> <p>-Conversely, there are instances where strictly following an UF schedule would yields lower flows than what was actually released, and those may be at levels that would be catastrophic to fish and aquatic resources (Figure 3 [ATT1:ATT4]).</p> <p>-Finally, shorter-time scale ability to release flows aligned with natural storm events can have significant impacts related to the timing and spatial extent of desirable floodplain habitat activation and the duration of inundation (Figure 4 [ATT1:ATT5]).</p>	
1239	6	[ATT1:ATT1: Table 1. Summary of 40% UF volumes compared to actual volumes released from 2002-2016, February through June. (*)Volume = 40%UF volume/actual release volume.]	The commenter is providing this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to comments; therefore, no additional response is required.
1239	7	[ATT1:ATT2: Figure 1. Graph. Actual and modeled releases during January-June 2008, Stanislaus River.]	The commenter is providing this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to comments; therefore, no additional response is required.
1239	8	[ATT1:ATT3: Figure 2. Graph. Actual and modeled releases during January-June 2002, Tuolumne River. Red line depicts actual flow below La Grange Dam, orange line represents instantaneous 40% UF releases.]	The commenter is providing this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to comments; therefore, no additional response is required.
1239	9	[ATT1:ATT4: Figure 3. Graph. Actual and modeled releases during January-June 2014, Merced River. Red line depicts actual flow below measured at Snelling, CA, blue line represents instantaneous 40% UF releases.]	The commenter is providing this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to comments; therefore, no additional response is required.
1239	10	[ATT1:ATT5: Figure 4. Graph. Modeled releases from mid-February through March 2009, Stanislaus River.]	The commenter is providing this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to comments; therefore, no additional response is required.
1239	11	[ATT2: Enclosure 2. White Sturgeon documented spawning events related to San Joaquin River flow.]	The commenter provided this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to comments; therefore, no additional response is required.
1239	12	[From ATT2:] Background: The [Fish and Wildlife] Service has been conducting research and assessments on White Sturgeon occupancy, behavior, habitat use and habitat prevalence in the mainstem San Joaquin River and the lower sections of the associated tributaries since 2011. We have successfully documented occupancy, migration, spawning and juvenile	Please see Master Response 1.1, General Comments, for responses to comments that do not raise significant environmental issues associated with the analysis contained within the SED or request a modification to the plan amendments.

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Ltr#	Cmt#	Comment	Response
		<p>recruitment on multiple occasions in the last 5 years of sampling.</p> <p>Notably we have found that:</p> <ol style="list-style-type: none"> 1. White Sturgeon adults occur in the mainstem San Joaquin every year, 2. Successful spawning may be cued with modest flow increases, even in relatively dry years (Figures 5, 6 [ATT2:ATT1, ATT2:ATT2]), 3. Higher overall spring flow levels in the San Joaquin, Stanislaus, Tuolumne and Merced rivers are likely to equate to more successful years of White Sturgeon spawning and juvenile recruitment. 	
1239	13	[ATT2:ATT1: Figure 5. Graph. Documented White Sturgeon spawning events in the mainstem San Joaquin River (SJR), 2012.]	The commenter is providing this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to comments; therefore, no additional response is required.
1239	14	[ATT2:ATT2: Figure 6. Graph. Documented White Sturgeon spawning events in the mainstem SJR, 2016.]	The commenter is providing this attachment for reference purposes in support of their comments. Those comments are addressed in these responses to comments; therefore, no additional response is required.
1239	15	<p>[From ATT3:]</p> <p>[Subject:] Modeling Approach</p> <p>The SED is intended to document the potential effects of proposed actions. Many benefits are ascribed to using a percentage of a 7-day running average of unimpaired flow into a tributary’s major reservoir (e.g., New Melones) to set minimum instream flow requirements at the mouth of the tributary (e.g., DWR’s Koetitz Ranch gage). What is proposed could have been more directly modeled. Most of the effects (redd scour, redd dewatering, stranding, floodplain utilization, pushing out of salmonid fry and smolts, etc.) are clearly sub-monthly phenomena which occasionally extend past a month in duration. The effects analyses (and therefore the modeling) would more appropriately be done on a shorter time scale, e.g., daily or weekly, not on a monthly time scale.</p>	Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the use of the WSE model in providing an appropriate level of analysis to support the programmatic evaluation of the plan amendments. Please also see Master Response 3.1, Fish Protection, regarding the adequacy of modeling to support the evaluation of potential environmental effects of the LSJR alternatives on aquatic biological resources.
1239	16	<p>[From ATT3:]</p> <p>[Subject:] Modeling Approach</p> <p>The modeling uses perfect foresight of reservoir inflow from March through September which is clearly at odds with the real world practice (at least on the Stanislaus) of using very dry (90 pct. exceedance) estimates of coming hydrology. The modeling uses perfect foresight of Feb-Jun unimpaired flow. SED Appendix F.1 atop page F.1-4 suggests the modeling allocation logic uses that perfect foresight (in the form of corresponding minimum springtime flow requirements). Consequently, actual allocations should not be expected to be as high as modelled allocations. The potentially significant impact of uncertainty and its interplay with the timing of securing loans/planting, etc. appears to be significantly flawed in the SED’s water modeling. The modeling argument that misrepresentations are okay if</p>	Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the credibility of the WSE model assumptions used to model the baseline and the LSJR alternatives and modeling foresight.

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Ltr#	Cmt#	Comment	Response
		<p>they're in both simulations being compared is being applied incorrectly here because the level of uncertainty differs with each alternative. The modeled approach likely leads to overly optimistic allocations to water districts in early spring.</p>	
1239	17	<p>[From ATT3:]</p> <p>[Page:] ES-1</p> <p>[Subject:] 4th paragraph</p> <p>How was "unreasonable negative effects on water supply for agriculture, drinking water, hydropower and other competing beneficial uses" determined? Is it possible to be protective enough of the fish and wildlife resources, without causing "unreasonable negative effects" on water supply? Perhaps not, but this assumption/assertion needs to be quantified and spelled out here.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the science and policy justification for the LSJR plan amendments. Please see Master Response 1.2, Water Quality Control Planning Process, for information regarding consideration of beneficial uses.</p>
1239	18	<p>[From ATT3:]</p> <p>[Page:] ES-2</p> <p>[Subject:] 2nd bullet</p> <p>Not clear what "increase salinity objectives" means--does that mean higher salinity standards or lower salinity standards, "while generally maintaining existing conditions"? How can salinity objectives be increased, but existing conditions are maintained? The statement is confusing as written.</p>	<p>As described in Section 6 of the Executive Summary, the salinity objectives are the numeric target value at the compliance locations. Therefore, an increase in the objectives means higher target values. Though the salinity objective is being amended, existing water quality conditions would be maintained because USBR's water rights on New Melones reservoir would be conditioned to require them to meet a 0.7 EC standard at Vernalis. Please see Master Response 3.3, Southern Delta Water Quality, for responses to comments regarding why the southern Delta salinity objectives are being updated.</p>
1239	19	<p>[From ATT3:]</p> <p>[Page:] ES-4</p> <p>[Subject:] 1st paragraph</p> <p>How was it determined what was reasonable for the protection of fish and wildlife beneficial uses? Even though the proposed flows are higher than the existing flow requirement in some cases, how would one know that its protective level is reasonable (high enough) to meet the goals (on page ES-9; bullet 1) of maintaining inflow conditions from the SJR Watershed sufficient to support and maintain the natural production of viable native fish populations migrating through the Delta and to provide flows in quantity necessary to achieve functions essential to native fishes (on page ES-9; bullet 3)?</p>	<p>Please refer to Master Response 1.1, General Comments, regarding the State Water Board's authorities and consideration of beneficial uses. See Master Response 1.2, Water Quality Control Planning Process, for additional details on the authorities and regulations governing the water quality control planning process and consideration of beneficial uses.</p> <p>Appendix C, Scientific Basis Report, Chapter 3, Scientific Basis for Developing Alternative San Joaquin River Flow Objectives, provides the scientific justification that higher and more naturally variable flows are needed to protect fish and wildlife beneficial uses. Refer to Master Response 3.1, Fish Protection, for additional discussion of the justification and description of the plan amendments for protecting fish.</p>
1239	20	<p>[From ATT3:]</p> <p>[Page:] ES-8</p> <p>[Subject:] Section ES4.1, 2nd bullet</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either do not make a general comment regarding the plan amendments or raise significant environmental issues. No further response is required.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>Many wouldn't see that "providing a more reliable water supply for California" is the same as avoiding "unreasonable negative effects." Perhaps much less water for agriculture is necessary for assuring a more reliable supply. Possibly change wording here to be more reflective of the need to balance water supply needs with negative effects to other beneficial uses.</p>	
1239	21	<p>[From ATT3:]</p> <p>[Page:] ES-8</p> <p>[Subject:] Section ES-4.1, 3rd bullet</p> <p>If the 2010 report determined that 60 percent of unimpaired SJR inflow from February-June would preserve the attributes of a natural variable system and that flow requirements should reflect the frequency, duration, timing and rate of change of flows, how can something lower be proposed (30 to 50 percent of unimpaired flows) and expect to protect the fish at a reasonable level? If the fish and wildlife beneficial uses need these values of flow to reach threshold effects, it is unclear how they would be impacted from providing less than what was determined they fully need.</p>	<p>Please refer to Master Response 1.1, General Comments, Master Response 1.2, Water Quality Control Planning Process, Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 3.1, Fish Protection, for responses to comments regarding the Delta Flow Criteria Report. Chapter 7, Aquatic Biological Resources, and Chapter 8, Terrestrial Biological Resources, evaluate environmental impacts on fish and wildlife beneficial uses that could result from the LSJR flow objectives.</p> <p>Please also see Master Response 2.2, Adaptive Implementation, for responses to comments regarding how adaptive implementation will be used to achieve the goals of reasonable fish and wildlife protection. Please also see Master Response 1.2 regarding the relationship of the plan amendments to other programs and policies, including the 2010 Flow Criteria Report.</p>
1239	22	<p>[From ATT3:]</p> <p>[Page:] ES-9</p> <p>[Subject:] 2nd bullet</p> <p>Other stresses of nonnative species, predation, and high water temperatures are all related to flow which was discussed in the previous paragraph. This paragraph implies that these other stressors are independent of flows, which they are not.</p>	<p>This comment does not make a general comment regarding the plan amendments or raise significant environmental issues. The State Water Board identifies throughout the SED that these stressors are not independent of flow, including, but not limited to the following locations: Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives; Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30; Master Response 3.1, Fish Protection; and Master Response 5.2, Incorporation of Non-Flow Measures. No further response is required.</p>
1239	23	<p>[From ATT3:]</p> <p>[Page:] ES-10</p> <p>[Subject:] Section ES-4.2, 3rd bullet</p> <p>We do not believe that it is clear that the operational barriers likely won't be built because of the endangered species concerns. Is this an assumption rather than a forgone conclusion? If so, please clarify the language.</p>	<p>Due to concern regarding the impact that the permanent Operable Barriers project may have on migratory fish, additional studies are being conducted prior to the re-initiation of consultation for Endangered Species Act permits required for the project. It is the State Water Board's understanding that DWR has indefinitely postponed implementation of the project.</p>
1239	24	<p>[From ATT3:]</p> <p>[Page:] ES-11</p>	<p>Please see Master Response 1.1, General Comments, for additional information about the plan amendments. Please see Master Response 3.1, Fish Protection, for information regarding ecological benefits of the plan amendments. Please see SED Chapter 18, Summary of Impacts and Comparison of Alternatives, for a discussion about the environmentally superior alternative. LSJR Alternative 3, with adaptive</p>

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Ltr#	Cmt#	Comment	Response
		<p>[Subject:] Section ES5.1, 1st paragraph</p> <p>It is not clear how it was determined that an unimpaired flow of 30 to 50 percent is sufficient to reasonably protect fish and wildlife beneficial uses. It is stated that the numeric range provides maximum flexibility to achieve the narrative element of the flow objective of "sufficiently supporting and maintaining viable native migratory San Joaquin River fish populations." It is not clear that is does and we recommend including a summary of how that conclusion was reached in the executive summary.</p>	<p>implementation, meets more of the purposes and goals of the plan amendments more fully than the other LSJR alternatives.</p>
1239	25	<p>[From ATT3:]</p> <p>[Page:] ES-12</p> <p>[Subject:] 2nd paragraph</p> <p>Minimum base flows of between 800-1200 cfs at Vernalis from February- June does not appear to be fully protective. Only when the base flows would exceed 100% of the unimpaired flow would it be intuitively protective.</p>	<p>Please see Master Response 3.1, Fish Protection, for information regarding ecological benefits of the plan amendments. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for a description of modifications to the plan amendments, including the Vernalis base flow objective.</p>
1239	26	<p>[From ATT3:]</p> <p>[Page:] ES-12</p> <p>[Subject:] 1st bullet</p> <p>It is not intuitive that expressing the objective as a number range achieves the goal in the first bullet. It is not clear that 30 to 50 percent of inflow is adequate to support and maintain the natural production of viable native SJR Watershed fish population migrating through the Delta.</p>	<p>Please see Master Response 3.1, Fish Protection, regarding the scientific basis for the plan amendments. Please see Chapter 18, Summary of Impacts and Comparison of Alternatives, for a summary of the environmentally superior alternative. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for a description of the plan amendments.</p>
1239	27	<p>[From ATT3:]</p> <p>[Page:] ES-12</p> <p>Ranges provided as minimums usually default to the lowest value in the range unless otherwise specified. A stronger set of criteria and considerations related to how decisions to change instream flow percentages would be developed and assessed needs to be included before we feel confident that lower values will become the norm.</p>	<p>This comment does not raise significant environmental issues. As described in Chapter 4, Introduction to the Analysis, each of the LSJR alternatives evaluated in the SED includes a range of percent of unimpaired flow (e.g., 30 percent to 50 percent in response to implementation of LSJR Alternative 3), as well as the ability to adaptively implement flows within this range. Please refer to Master Response 2.2, Adaptive Implementation, regarding how the variable quantity provision would be implemented to achieve the highest benefits to reasonably protect fish and wildlife.</p>
1239	28	<p>[From ATT3:]</p> <p>[Page:] ES-12</p> <p>[Subject:] 3rd bullet</p>	<p>This comment does not raise significant environmental issues. Please see Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30 and Master Response 3.1, Fish Protection, regarding the benefits expected at the percent of unimpaired flow ranges specified in the plan amendments as the starting point and as allowed by adaptive implementation. Please also refer to Master Response 2.2, Adaptive Implementation, regarding how the variable quantity provision would be</p>

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Ltr#	Cmt#	Comment	Response
		<p>It is not clear how you could reduce unimpaired flows to a lower level and not significantly reduce the benefits to fish and wildlife.</p>	<p>implemented to achieve the highest benefits to reasonably protect fish and wildlife.</p>
1239	29	<p>[From ATT3:]</p> <p>[Page:] ES-13</p> <p>[Subject:] Last bullet</p> <p>Allocating 40 percent of the unimpaired flow to fish and wildlife beneficial uses and more (60 percent) to others is not intuitively equitable. Why should the fish and wildlife beneficial uses get less than the others? Language related to need to balance between uses and accepting lesser benefits for some categories may help explain this more clearly.</p>	<p>This comment does not raise significant environmental issues. Please see Master Response 1.1, General Comments, and Master Response 1.2, Water Quality Control Planning Process, regarding consideration of beneficial uses. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding a description of the plan amendments and meeting the purpose and goals of the project, including the reasonable protection of fish and wildlife.</p>
1239	30	<p>[From ATT3:]</p> <p>[Page:] ES-15</p> <p>[Subject:] 1st paragraph and ES-16, 2nd paragraph</p> <p>There seems to be a discrepancy between the two paragraphs about what the starting point is. Page ES-15 says it is 60 percent, ES-16 says its 50 percent. Please reconcile the two.</p>	<p>This typo has been corrected. The correction does not change the conclusions of the Executive Summary or change an impact determination in the SED.</p>
1239	31	<p>[From ATT3:]</p> <p>[Page:] ES-16</p> <p>[Subject:] Last paragraph</p> <p>How can best available scientific information support changes "sufficient to support and maintain the natural production of the viable native fish LSJR fish populations migrating through the Delta" if "sufficient" has not been defined?</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the description of LSJR plan amendments. Also, please see the Merriam-Webster Dictionary definition of the word sufficient, which means "enough to meet the needs of a situation or a proposed end" (https://www.merriam-webster.com/dictionary/sufficient). The narrative objective uses the word sufficient to mean that inflow conditions should be "enough" to maintain the natural production of viable native San Joaquin River Watershed fish populations migrating through the Delta. Please see Appendix K, Revised Water Quality Control Plan, and Master Response 2.2, Adaptive Implementation, for more information regarding the SED determination that 30 to 50 percent of unimpaired flow is sufficient (enough) to support and maintain the natural production of the viable native fish LSJR fish populations migrating through the Delta.</p> <p>Master Response 2.2, Adaptive Implementation, provides additional description and examples of adaptive implementation and the bounds under which it may proceed.</p>
1239	32	<p>[From ATT3:]</p> <p>[Page:] ES-17</p> <p>Shifting flows for temperature benefits outside the Feb-Jun range presupposes no need for flow regulation outside that period. Fall attraction flows (which may also be employed to</p>	<p>This comment does not raise significant environmental issues. Please refer to Master Response 3.1, Fish Protection, regarding the scientific basis of the plan amendments in protecting fish and a discussion of year-round flows and fall temperature concerns. As described in Appendix K, Revised Water Quality Control Plan, and in Master Response 3.1, the current 2006 Water Quality Control Plan remains in effect and includes a requirement for the fall period which is outside of the February through June period that is the focus of the plan amendments for the LSJR flow objectives. The plan amendments do not affect the fall objective, other than to clarify language regarding the amount of flow that is required under that objective in order to</p>

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Ltr#	Cmt#	Comment	Response
		<p>address early fall temperature concerns) appear to be completely absent from consideration here.</p>	<p>protect fish and wildlife beneficial uses. Per the Table 3 flows, the flow requirement during October is 1,000 cfs plus up to an additional 28 thousand acre-feet pulse/attraction flow limited to the amount necessary to achieve a monthly average flow of 2,000 cfs (except in critically dry years following critically dry years). Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for a description of the plan amendments, including adaptive implementation, which allows flows to be shifted to the fall (also see Master Response 2.2, Adaptive Implementation).</p>
1239	33	<p>[From ATT3:]</p> <p>[Page:] ES-18</p> <p>[Subject:] 2nd paragraph</p> <p>It's not clear how you can demonstrate reasonable protection if goals are not established until later through the program of implementation. Perhaps we will find that what we have considered reasonable (30 to 50 percent of unimpaired flows) does not meet the established goals for what reasonable protection is. It seems like the determination of what reasonable protection is was determined without knowing what level of protection those flows would provide. Seems backwards--it would be better to identify what you are trying to achieve biologically first, prior to determining what flows are needed to sustain and maintain those levels. Biological goals should also incorporate survival. The other biological goals listed will be difficult to relate to specific flow levels and be isolated from other influences throughout the salmonid lifecycle.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 2.2, Adaptive Implementation, regarding the establishment of biological goals and objectives and their relationship to adaptive implementation. Chapter 3, Alternatives Development, Section 3.3.8, Common Elements of LSJR Alternatives, under the subsection Planning, Monitoring, and Reporting, describes the program of implementation to be carried out by the STM Working Group or State Water Board. The program identifies biological goals and a schedule for reporting and implementation. Once developed, biological goals may be modified by the State Water Board based on new information developed through the monitoring and evaluation activities that are a part of the program of implementation or through or other new sources of scientific information. This comment does not raise significant environmental issues.</p>
1239	34	<p>[From ATT3:]</p> <p>[Page:] ES-18</p> <p>[Subject:] First bullet</p> <p>Biological goals alone cannot be used to evaluate the effectiveness of the program of implementation--there has to be an adequate level of monitoring that measures the biological goals and relates it to the actions in the program of implementation? What will be used as a control to determine the effectiveness of the program under the program of implementation, unless the same biological metrics are measured prior to the program of implementation in similar types of years?</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 2.2, Adaptive Implementation, for more information regarding biological goals and adaptive implementation.</p> <p>Chapter 3, Alternatives Description, Section 3.3.3, Adaptive Implementation, describes how adaptive implementation will achieve the goals of the plan amendments: "Allow adaptive implementation of flows that will afford maximum flexibility in establishing beneficial habitat conditions for native fishes, addressing scientific uncertainty and changing conditions, developing scientific information that will inform future management of flows, and meeting biological goals, while still reasonably protecting the fish and wildlife beneficial uses."</p> <p>Chapter 3, Alternatives Description, Section 3.3.8, Common Elements of LSJR Alternatives, subsection Planning, Monitoring, and Reporting, further describes how the program of implementation is to be carried out by the STM Working Group or State Water Board to evaluate the effectiveness of the program. Once developed, biological goals may be modified by the State Water Board based on new information developed through the monitoring and evaluation activities that are a part of the program of implementation or through or other new sources of scientific information.</p> <p>This comment does not raise significant environmental issues.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
1239	35	<p>[From ATT3:]</p> <p>[Page:] ES-19</p> <p>[Subject:] Non-flow actions, 1st paragraph</p> <p>The last sentence seems to imply that only minimal flows are "needed to reasonably protect fish and wildlife beneficial uses in the LSJR," which we do not believe is true. We have minimal flows now, and they are not adequately or reasonably protecting fish and wildlife beneficial uses.</p>	<p>The sentence being referenced is: "Increased flows, however, remain the principal means of compliance because science shows that some minimum flow is still needed to reasonably protect fish and wildlife beneficial uses in the LSJR." Read within the context of the rest of the paragraph discussing of non-flow measures, it means that the unimpaired flow requirement is still needed to reasonably protect fish and wildlife beneficial uses, even though non-flow actions can assist in further improving habitat conditions that benefit fish. In other words, some amount of water is needed at a minimum to reasonable protect fish and wildlife beneficial uses in the LSJR. The sentence is revised. Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
1239	36	<p>[From ATT3:]</p> <p>[Page:] ES-19</p> <p>Temporary Urgency Change Petitions have been utilized frequently in the Central Valley in recent years and can have potentially significant additional negative impacts related to environmental protections in the face of limited water. They should somehow be considered here.</p>	<p>As described in the Executive Summary under the subheading State of Emergency Change Provisions, and under the same subheading in Chapter 3, Alternatives Description, Section 3.3.8, Common Elements of the LSJR Alternatives, the State Water Board, at its discretion or at the request of any affected responsible agency or person, may authorize a temporary change to the implementation of the LSJR flow objectives in a water right proceeding if the State Water Board determines that either (1) there is an emergency as defined by CEQA (Pub. Resources Code, § 21060.3), or (2) the Governor of the State of California or a local governing body has declared a state or local emergency pursuant to the California Emergency Services Act (Gov. Code, § 8550 et seq.). Before authorizing any temporary change, the State Water Board must find that measures will be taken to reasonably protect the beneficial use in light of the circumstances of the emergency. Also please see Master Response 2.1, Amendments to the Water Quality Control Plan, for more information about emergency provision in the plan amendments. Please see Master Response 2.5, Baseline and No Project, regarding temporary urgency change petitions as they relate to the baseline.</p>
1239	37	<p>[From ATT3:]</p> <p>[Page:] ES-19</p> <p>[Subject:] Non-flow actions, 2nd paragraph</p> <p>These other factors are also related to flows. It is unlikely that there are any other measures that can address these factors, that don't incorporate flow, because they are created by the lack of flow and are related to flow (with the possible exception of barriers). This paragraph implies they are separate from flow and they are not. It is unclear how monitoring and adaptive implementation, of themselves, will improve habitat conditions or how reducing the flows will achieve reasonable fish and wildlife protection goals.</p>	<p>The section the comment refers to is entitled "Non-Flow Actions" in the Executive Summary. This topic is also discussed under the same subsection title in Chapter 3, Alternatives Description, Section 3.3.8, Common Elements of LSJR Alternatives. Please also See Master Response 5.2, Incorporation of Non-Flow Measures, and Master Response 3.1, Fish Protection, on the importance of flow and the role of non-flow measures in protecting fish and wildlife beneficial uses and achieving the goals of the plan amendments. Please also see Master Response 2.1, Amendments to the Water Quality Control Plan, Master Response 2.2, Adaptive Implementation, Chapter 16, Evaluation of Other Indirect and Additional Actions, and Appendix K, Revised Water Quality Control Plan, for further discussions of the role of non-flow measures and how they relate to the plan amendments. This comment does not raise significant environmental issues.</p>
1239	38	<p>[From ATT3:]</p> <p>[Page:] ES-21</p> <p>[Subject:] Section, E55.3, 1st paragraph</p> <p>What level of protection is expected from this LSJR alternative 3, relative to the other alternatives?</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the reasonable protection considered in the Water Quality Control Planning Process. The plan amendments contain information regarding tradeoffs for a variety of beneficial uses.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
1239	39	<p>[From ATT3:]</p> <p>[Page:] ES-22</p> <p>[Subject:] Last sentence</p> <p>"Water supply" appears to be "reflective of both the availability of, and demand for, water" here. It seems like "water supply" should only reflect how much is available, and not incorporate the demand. Perhaps a new term would be better.</p>	<p>As described in Chapter 5, Surface Hydrology and Water Quality, on page 5-1: "In this document, water supply refers to surface water diversions, and not the quantity of surface water in the watershed." Because diversions depend on both availability of water in the river and demand, the use of "water supply" in the last paragraph of page ES-22 is consistent with the rest of the document. Therefore, no change has been made.</p>
1239	40	<p>[From ATT3:]</p> <p>[Page:] ES-25</p> <p>Is the SWRCB staff aware of recent analyses by Joel Herr, of Systech Water Resources, Inc., who has analyzed data that suggests seepage loss to groundwater is occurring in the river? "In the 1990s groundwater accretions were estimated to provide over 600 cfs of flow to the San Joaquin River, but since then there has been a persistent downward trend leading to approximately zero net groundwater accretions in 2015 and net seepage loss from the river in 2016. A continuation of this trend may result in sections of the river running dry with increasing frequency." From Abstract Book, 2016 Science Meeting, San Joaquin River Restoration Program, session three, page 15.</p>	<p>The State Water Board acknowledges there are many data sources available. The SED is based on best available data that could reasonably be collected at the time the SED was being developed. This is consistent with requirements of the certified regulatory planning process and in accordance with CEQA. For further discussion the use of best available data, please see Master Response 1.1, General Comments.</p> <p>While the specific analyses cited in the comment were not used in the SED, the content provided in the comment does not contradict the information contained in Chapter 9, Groundwater Resources, and would not change the impact determinations presented therein. For further discussion on groundwater recharge, please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act.</p>
1239	41	<p>[From ATT3:]</p> <p>[Page:] ES-43 to ES-44</p> <p>[Subject:] Temperature benefits</p> <p>The estimates of benefits to water temperature from flow do not appear to include the potential warmer effect from climate change and reduced precipitation.</p> <p>Temperature benefits would also be derived from 60 percent of unimpaired flow.</p>	<p>Please see Chapter 14, Energy and Greenhouse Gases, for an analysis of the effect of climate change on LSJR Alternatives 2, 3, and 4. Climate change would not significantly affect LSJR Alternatives 2, 3, and 4 because adaptive implementation would afford agencies with the flexibility to respond to changing circumstances. Furthermore, the required review and update of the Water Quality Control Plan (see Appendix K, Revised Water Quality Control Plan) continually accounts for changing conditions related to water quality and water planning such as response to climate change.</p> <p>Please refer to Master Response 3.1, Fish Protection, regarding expected benefits from implementation of the plan amendments, including discussions of reductions in harmful and lethal temperatures and of temperature improvements in June.</p> <p>Figure ES-3, Table ES-15, and Table ES-16 of the Executive Summary include temperature benefits for the 60 percent unimpaired flow scenario. In ES-5.5, Benefits of the Flow Proposal, under Temperature Benefits, the text of the last paragraph of the section was modified per the commenter's suggestion.</p>
1239	42	<p>[From ATT3:]</p> <p>[Page:] ES-44</p> <p>It's not been shown that Yolo Bypass flooding actually increases survival in Yolo Bypass</p>	<p>It is not apparent to what the commenter is referring; the Executive Summary does not refer to any studies on the Yolo Bypass as supportive evidence of the importance of floodplain inundation. However, Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, and Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, cites evidence from other rivers including the Yolo Bypass.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		(manuscript in review). Provide references that show it does increase survival or clarify what can be said based on existing published literature vs. what is being implied/assumed.	
1239	43	<p>[From ATT3:]</p> <p>[Page:] ES-46</p> <p>Many experts would argue that flows in Feb-Mar are not "relatively high" in the baseline condition.</p>	<p>Please refer to SED Chapter 5, Surface Hydrology and Water Quality, and Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, for a comparison of flows in the baseline condition relative to unimpaired flows. Baseline flows are not relatively high compared to unimpaired flows or the LSJR plan amendments.</p>
1239	44	<p>[From ATT3:]</p> <p>[Page:] ES-46, ES-47</p> <p>[Subject: Section ES-17]</p> <p>Why isn't floodplain inundation under 60 percent of unimpaired flow included here as well?</p> <p>The benefits of floodplain inundation in later spring months (May and June) must be offset by the potential use by warm water predators. By May and June many of the salmon may be gone from the tributaries, especially in drier, warmer years.</p>	<p>Please refer to response to comment number 1239-166 regarding floodplain inundation and the benefits of flows through May and June. See Tables 19-28 and 19-29 in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, which provided information on floodplain inundation at the 60 percent unimpaired flow scenario. Please refer to Master Response 3.1, Fish Protection, regarding predation, floodplains, and benefit of flows through May and June.</p>
1239	45	<p>[From ATT3:]</p> <p>[Page:] ES-54</p> <p>The HORB should only be constructed if there are adequate flows (above 2500 cfs and below 7000 cfs). Recent evidence suggests (Brandes, personal communication) it is not helpful to the survival of Chinook salmon in low flow years because the fish do not survive in the San Joaquin River downstream of the barrier in these years.</p>	<p>The Head of Old River Barrier is currently part of the baseline hydrology, water quality, and biological conditions of the southern Delta. DWR will continue to work with permitting and resource agencies to obtain the appropriate permits and conditions to operate this barrier as well as the Middle River, Old River at Tracy, and Grant Line Canal Barriers.</p>
1239	46	<p>[From ATT3:]</p> <p>[Page:] ES-55</p> <p>It's hard to know the impact relative to the benefit of "small scale and large scale applications of herbicides" for aquatic weed control. More flow would likely reduce the proliferative spread of submerged aquatic weeds.</p>	<p>Please see Chapter 16, Evaluation of Other Indirect and Additional Actions, Section 16.3.10, Invasive Aquatic Vegetation Control, for a detailed description of this non-flow action, as well as a cost evaluation and summary of potential environmental effects associated with implementing this action.</p>
1239	47	<p>[From ATT3:]</p> <p>[Page:] ES-57</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>Table ES-23: The Impacts determined for various types of restoration seem to be larger than those we find for our projects.</p>	
1239	48	<p>[From ATT3:]</p> <p>[Page:] 1-1</p> <p>The Board should consider whether additional tributaries to the Lower San Joaquin River (e.g. Kings, Fresno, & Chowchilla Rivers) should be included in the plan area.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for a discussion of the geography of the plan amendments. As discussed in Volume 1, Chapter 1, Introduction, and Chapter 3, Alternatives Description, and Volume 2, Appendix K, Revised Water Quality Control Plan, and as noted by the commenter, the Upper San Joaquin River is undergoing flow setting under a separate process. The flows that occur under that separate process would be expected to contribute to the overall health of the Lower San Joaquin River and the flows entering the southern Delta at Vernalis.</p> <p>Please see Master Response 1.1, General Comments, for a discussion on cumulative impact analysis for tributaries considerations.</p>
1239	49	<p>[From ATT3:]</p> <p>[Page:] 1-2</p> <p>[Subject: Chapter 1, Section 1.2]</p> <p>The San Joaquin River upstream of the Merced River confluence should be included in the SED based on their management affecting each other. If this area is excluded from the SED for legal reasons, these reasons should be stated in the Introduction Section. The San Joaquin River upstream of the Merced River confluence will be connected to the LSJR prior to 2022, which could influence Vernalis flows (e.g., compliance with minimum base flow target of 1,200 cfs) and overall water quality.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for a discussion of the geography of the plan amendments. As discussed in Volume 1, Chapter 1, Introduction, and Chapter 3, Alternatives Description, and Volume 2, Appendix K, Revised Water Quality Control Plan, and as noted by the commenter, the Upper San Joaquin River is undergoing flow setting under a separate process. The flows that occur under that separate process would be expected to contribute to the overall health of the Lower San Joaquin River and the flows entering the southern Delta at Vernalis.</p> <p>Please see Master Response 1.1, General Comments, for responses to comments regarding the San Joaquin River Restoration Program, a discussion on cumulative impacts on surface hydrology and water quality, aquatic biological resources, agricultural resources, and service providers.</p>
1239	50	<p>[From ATT3:]</p> <p>[Page:] 1-2</p> <p>[Subject: Chapter 1, section 1.5.2]</p> <p>Would the export regimes be modified at the SWP and CVP facilities to facilitate the estimated biological benefit(s) of the LSJR and SDWQ alternatives regarding migratory (e.g., anadromous) fish species? For example, the biological benefit of LSJR alternatives may not be observed or detected if species of concern are being impacted by SWP and CVP operations.</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding a description of the plan amendments. Please refer to Master Response 1.1, General Comments, for information regarding water deliveries to the south of Delta as they relate to the plan amendments. Please refer to Chapter 7, Aquatic Biological Resources, and see Table 7-1 Summary of Aquatic Resources Impact Determinations, under Impact AQUA-12: Changes in southern Delta and estuarine habitat resulting from changes in SJR inflows and export effects. Delta operations would continue to be governed by current restrictions on export pumping rates, inflow/export ratios, and Old Middle River flows to protect listed fish species from direct and indirect impacts of southern Delta operations.</p>
1239	51	<p>[From ATT3:]</p> <p>[Page:] 2-19</p> <p>[Subject:] Section 2.4.2; Table 2-10</p>	<p>This comment does not make a general comment regarding the plan amendments or raise significant environmental issues. No further response is required.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		Recommend adding an additional column header that shows percent (%) of unimpaired flow, per each water supply/use.	
1239	52	<p>[From ATT3:]</p> <p>[Page:] 2-20</p> <p>[Subject:] Section 2.4.2, Table 2-11</p> <p>Recommend adding an additional column header that shows percent (%) of unimpaired flow, per each water supply/use.</p>	This comment does not make a general comment regarding the plan amendments or raise significant environmental issues. No further response is required.
1239	53	<p>[From ATT3:]</p> <p>[Page:] 2-22</p> <p>[Subject:] Section 2.4.3; Table 2-13</p> <p>Recommend adding an additional column header that shows the estimated percent (%) of unimpaired flow, per each streamflow requirement period, under normal or dry year conditions.</p>	This comment does not make a general comment regarding the plan amendments or raise significant environmental issues. No further response is required.
1239	54	<p>[From ATT3:]</p> <p>[Page:] 2-22</p> <p>[Subject:] Section 2.4.4; 2nd paragraph; last sentence</p> <p>Illustrates the need for flow adjustment during winter and spring for the protection of fall-run Chinook salmon, as this is a critical time period for juvenile survival in the Tuolumne River.</p>	Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for a response to comments regarding the need for flow adjustments during the amendment time frame of February to June and adaptive implementation.
1239	55	<p>[From ATT3:]</p> <p>[Page:] 2-23</p> <p>[Subject:] Section 2.4.4; Table 2-14</p> <p>Recommend updating this figure to show data through water year 2015 or 2016.</p>	This comment does not make a general comment regarding the plan amendments or raise significant environmental issues. The changes suggested in the comment would not affect the conclusions of the impact analysis. For additional information on modeling assumptions and information used in the analysis please see Master Response 3.2, Surface Water Analyses and Modeling. In addition, please see Chapter 21, Drought Evaluation, for information about more recent conditions and an extension of the Water Supply Effects Model to 2015.
1239	56	<p>[From ATT3:]</p> <p>[Page:] 2-23</p>	The updates recommended in the comment were not implemented because they would not affect the conclusions of the impact analysis, therefore no change has been made. For additional information on modeling assumptions and information used in the analysis please see Master Response 3.2, Surface Water

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Subject:] Section 2.4.4; Table 2-14</p> <p>Recommend updating table to show data through water year 2015 or 2016.</p>	<p>Analyses and Modeling. In addition, please see Chapter 21, Drought Evaluation, for information about more recent conditions.</p>
1239	57	<p>[From ATT3:]</p> <p>[Page:] 2-24</p> <p>[Subject:] Section 2.4.4; last paragraph; last sentence</p> <p>Precipitation forecasting technology has vastly improved in the past 10-15 years. See USACE's "Joint Federal Project" (JFP) on the Lower American River. Ongoing construction of the new spillway system for flood control purposes was in part, justified based on forecasting ability. Operation of the spillway system, when complete, is also dependent on accurate long-term precipitation forecasting.</p>	<p>The commenter is summarizing the anticipated need for precipitation forecasting. This comment does not make a general comment regarding the plan amendments or raise a significant environmental issues. Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
1239	58	<p>[From ATT3:]</p> <p>[Page:] 2-25</p> <p>Ripon is ~14 river miles upstream of the Stanislaus confluence with the San Joaquin.</p>	<p>The text referenced in the comment was revised to state "The Stanislaus River originates in the high elevations of the Sierra Nevada and flows into the LSJR approximately 3 miles upstream of Vernalis near Ripon." This modification does not change impact determinations or conclusions identified in the SED.</p>
1239	59	<p>[From ATT3:]</p> <p>[Page:] 2-31</p> <p>It appears that AFRP (the CVPIA (b)(1) provision) has been confused with CVPIA (b)(2) in this section.</p>	<p>It is unclear what the commenter means since CVPIA is not the subject of the text in the SED identified by the commenter. USBR and FWS are jointly responsible for implementing CVPIA. CVPIA 3406 (b)(1) authorized the creation of the AFRP, which resulted in a Final Restoration Plan that specified how the dedicated flows (3406 (b)(2)) were to be implemented. So, while authorized under CVPIA, this section discusses the goals set forth by the AFRP and their relationship with VAMP and IPO flows, not the text of CVPIA itself. No further response required.</p>
1239	60	<p>[From ATT3:]</p> <p>[Page:] 3-4</p> <p>[Subject: Section 3.3.1]</p> <p>Goal #1 under the Geography subsection states, "Maintain inflow conditions from the SJR Watershed sufficient to support and maintain the natural production of viable native fish populations migrating through the Delta." What is the purpose of specifying "viable" native fish populations? The term viable can be defined several ways. We recommend clarifying what the term viable represents and how it influences the attainment of the goal. In addition, it is important to consider the benefit or impact to native resident fishes with the geographic area of interest.</p>	<p>Please refer to Master Response 1.1, General Comments, and Master Response 1.2, Water Quality Control Planning Process, regarding reasonable protection of beneficial uses. See Master Response 3.1, Fish Protection, regarding benefits expected from implementation of the plan amendments, justification and description of the plan amendments for protecting fish. Also refer to Master Response 3.1 for discussion of biological goals, including description of indicators of population viability.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
1239	61	<p>[From ATT3:]</p> <p>[Page:] 3-5</p> <p>[Subject: Section 3.3.1]</p> <p>The approach using the proportion of mean 7-day unimpaired flows is the most appropriate method to achieve biological objectives presented in the SED.</p>	<p>This comment does not raise significant environmental issues. This comment appears to conflict with comments provided by the commenter in comment numbers 1239-3, 1239-5, and 1239-64 regarding the length of the averaging period. No further response is required.</p>
1239	62	<p>[From ATT3:]</p> <p>[Page:] 3-7</p> <p>[Subject:] 2nd paragraph (under Goal #3)</p> <p>"Increased floodplain habitat" without any flow manipulation (increases) would be a difficult endeavor for the LSJR Eastside tribs. Given the current, degraded state of the 3 Eastside tributaries of the LSJR, a combination of both physical manipulation of the river corridor (e.g. floodplain re-contour, levee set-back, etc.) with that of flow increases, would be a more realistic approach to achieve this goal.</p>	<p>For a discussion on the role of the non-flow measures in protecting fish and wildlife, and incorporation of non-flow measures in the plan amendments, please see Master Response 5.2, Incorporation of Non-Flow Measures.</p>
1239	63	<p>[From ATT3:]</p> <p>[Page:] 3-10</p> <p>[Subject: Section 3.3.3]</p> <p>The adaptive management approach should implement the preferred alternative while considering native fish populations that do not migrate through the Delta.</p>	<p>Please refer to Appendix K, Revised Water Quality Control Plan, and Master Response 2.2, Adaptive Implementation, for responses to comments regarding adaptive methods. Adaptive implementation can be used to achieve the narrative fish and wildlife protection goals for all native species while providing flows within the 30 to 50 percent adaptive range.</p>
1239	64	<p>[From ATT3:]</p> <p>[Page:] 3-15</p> <p>Averaging across a 7 day minimum greatly reduces the variability in the hydrograph, may minimize the beneficial effects. A 1-3-day running average (or as close to that as possible, given constraints) with a reasonable lag time would be preferable. Utilizing the minimum lag possible would maximize the overlap between flows and other environmental parameters such as air temperature, barometric pressure, and cloud cover.</p>	<p>This comment does not raise significant environmental issues. This comment appears to conflict with comments provided by the commenter in comment numbers 1239-3, 1239-5, and 1239-61 regarding the length of the averaging period. No further response is required.</p>
1239	65	<p>[From ATT3:]</p> <p>[Page:] 3-15</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for the membership and role of the Stanislaus Tuolumne Merced (STM) Working Group.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		800-1000 cfs minimum Vernalis requirement. Who adjusts this and how?	
1239	66	<p>[From ATT3:]</p> <p>[Page:] 3-16</p> <p>[Subject: Section 3.3.8]</p> <p>What entity will provide the resources needed to (1) ensure appropriate staff support among the state and federal agencies involved in the STM Working Group, and (2) support/implement the monitoring and research needed to inform the adaptive decisions made by the STM Working Group?</p>	Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the STM Working Group and the San Joaquin River Monitoring and Evaluation Program.
1239	67	<p>[From ATT3:]</p> <p>[Page:] 3-16</p> <p>[Subject: Section 3.3.8]</p> <p>Will biological goals be developed for all life stages and other native fishes (beyond salmonids)? For example, Goal #3 states "Provide flows in a quantity necessary to achieve functions essential to native fishes such as increased floodplain inundation, improved temperature conditions, improved migratory conditions, and promote other conditions that favor native fishes over nonnative fishes." As a result, the native fish assemblage will need to be monitored and thus an achievable target needed to be developed. If only salmonids are monitored and it is hypothesized that their status correlates with the other fishery objectives, than this hypothesis should be tested or further justified using existing literature.</p>	Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for information regarding the development of biological goals and objectives.
1239	68	<p>[From ATT3:]</p> <p>[Page:] 3-16 and 3-17</p> <p>[Subject: Section 3.3.8]</p> <p>We recommend that the STM Working Group and the State Water Board be technically and scientifically evaluated at a regular interval of time (e.g., 5 years) to ensure it is functioning as prescribed and implementing adaptive management appropriately given the objective adopted at its inception. Currently, the SED only prescribes that a comprehensive report be evaluated.</p>	Please see Appendix K, Revised Water Quality Control Plan, to see that the San Joaquin River Monitoring and Evaluation Program is required to produce a comprehensive report every 3 to 5 years. The comprehensive report will review the progress of the biological goals and identify any recommended changes to the implementation of the LSJR flow objectives. Implementation broadly covers the comment's suggestion of evaluating the STM Working Group and State Water Board, as both entities are involved in implementation. Comprehensive Report recommendations will be peer-reviewed by an independent science panel, which will make its own conclusions and recommendations. The State Water Board will hold public meetings to consider the comprehensive report, technical information, and conclusions or recommendations developed through the peer review process, which will be used to inform potential adaptive implementation changes of the LSJR flow objectives. Inherent in this review process would be the assessment of the work of the body of the STM Working Group, to ensure the proper functioning of the STM Working Group.
1239	69	<p>[From ATT3:]</p> <p>[Page:] 3-17</p>	Please see Appendix K, Revised Water Quality Control Plan, Chapter IV, Program of Implementation, for a description of the Stanislaus, Tuolumne, and Merced (STM) Working Group, Annual Adaptive Operations Plan, and the San Joaquin River Monitoring and Evaluation Program (SJRMEP). The STM Working Group is required to submit proposed annual plans for adaptive implementation actions. The Annual Adaptive

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Subject: Section 3.3.8]</p> <p>What agency will be responsible for developing the STM Working Group's comprehensive report? We presume the State Water Board, but the report is to be given to the State Water Board. Additional clarification is needed.</p>	<p>Operations Plans the STM is responsible for producing are different from the Annual and Comprehensive monitoring reports required by the SJRMEP. The State Water Board requires the SJRMEP to produce the annual and comprehensive monitoring reports.</p>
1239	70	<p>[From ATT3:]</p> <p>[Page:] 3-19</p> <p>[Subject: Section 3.3.9]</p> <p>Should subsection 3.3.10 be a subsection of 3.3.9?</p>	<p>The correction has been made regarding the headings and numbering. The revision does not change conclusions in Chapter 3, Alternatives Description.</p>
1239	71	<p>[From ATT3:]</p> <p>[Page:] 3-36</p> <p>[Subject: Section 3.4.1]</p> <p>There should be biological goals paired with the SDWQ alternatives similar to those paired with the LSJR alternatives. The salinity concentration in the Delta can have profound impacts on the aquatic ecosystem. Some research suggests that higher salt concentrations and variability (regional and seasonal) in salt concentrations within the Delta can benefit the native fish assemblage and negatively impact non-native invasive species. Alternatively, maintaining the Delta as a freshwater canal system may exacerbate the impact of non-native fish species and plants on native fish of management concern.</p>	<p>The biological goals for the plan amendments for the LSJR flow objectives are intended to describe measurable indicators of viability (i.e., population abundance, spatial extent, distribution, structure, genetic life history diversity and productivity) for LSJR salmonids, and other fish species as appropriate, that will be used to evaluate the effectiveness of the objectives, and inform potential changes to implementation based on changing conditions. The plan amendments for the SDWQ objective are intended to be protective of agricultural crops. Therefore, biological goals are not required to ascertain the effectiveness of the objectives. However, as described in the Appendix K, Revised Water Quality Control Plan, special studies, modeling, and reporting are required to evaluate compliance with the objective and to obtain additional information to inform implementation of the objective and understanding of salinity conditions in the southern Delta. Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 3.1, Fish Protection, regarding biological goals.</p>
1239	72	<p>[From ATT3:]</p> <p>[Page:] 4-2</p> <p>[Subject:] First hollow bullet</p> <p>Is the omission of Tuolumne River intentional? Also, would the last line more accurately read "pulse flow portions of April and May" rather than "in April and May" or were the baseline requirements in the non-pulse portions of April and May modified in some way due to VAMP inclusion?</p>	<p>Tuolumne River was inadvertently omitted from the text in the first hollow bullet on page 4-2 of the Draft Recirculated SED. The VAMP flow requirements referenced in the bullet are the April 15–May 15 Vernalis pulse flows. The bullet has been updated accordingly and consistent with Appendix F.1, section titled Development of the WSE Model Baseline and Alternative Assumptions. This section outlines the assumptions in the baseline condition for the WSE CALSIM-baseline and WSE-CEQA baseline. The VAMP April 15–May 15 Vernalis pulse flows are released based on the San Joaquin River Agreement (SJRA) distribution schedule from either New Melones Reservoir, New Don Pedro Reservoir, or Lake McClure.</p>
1239	73	<p>[From ATT3:]</p> <p>[Page:] 4-2</p> <p>[Subject:] Second hollow bullet</p>	<p>The SED uses the NMFS OCAP BiOp June 2009 Appendix 2E - Daily Stanislaus River Minimum Flows for Fish Needs. Section F.1.2.3 states, "On the Stanislaus River, the existing minimum flow requirement is from the 2009 National Marine Fisheries Service (NMFS) biological opinion (BO) Stanislaus River Reasonable and Prudent Alternatives (RPAs), including Action 3.1.3 (NMFS 2009). These flows have been interpreted as monthly flow totals by the WSE model as shown in Table F.1.2-4, preserving the total volumes and including</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>The 2009 BiOp had different year type thresholds/delineations than USBR's subsequent implementation used. USBR adopted the year type thresholds/delineations that were in their 1997 IPO. (See NOAA's January 21, 2010 clarification to SOG). The 2009 BiOp also envisioned the driest years using a flow regime amounting to 98 TAF for less rather than 185 TAF. What does the SED modeling use?</p>	<p>pulse flows.”</p>
1239	74	<p>[From ATT3:]</p> <p>[Page:] 4-2</p> <p>[Subject:] Third hollow bullet</p> <p>These are contract amounts. The modeling used demands that were below full contract amounts. As such, this bullet is misleading and should be clarified.</p>	<p>Appendix F.1 discusses in detail the demands used in the WSE modeling for the SED. The WSE Model delivers water according to demands, up to the maximum contracted values as stated in the third hollow bullet. The model does not deliver more water than is demanded.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the credibility of the WSE model assumptions used to model the baseline and the LSJR Alternatives.</p>
1239	75	<p>[From ATT3:]</p> <p>[Page:] 4-2</p> <p>[Subject:] Fourth hollow bullet</p> <p>This is a great place to clarify where (what extent of each basin) is assumed to contribute to the unimpaired flow, i.e., where is the UF calculated? Is the Stan's UF based on estimates for the location of Goodwin Dam or estimates of inflow into New Melones?</p>	<p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the unimpaired flow calculations used to model the baseline and the LSJR Alternatives.</p>
1239	76	<p>[From ATT3:]</p> <p>[Page:] 4-3</p> <p>[Subject:] First bullet</p> <p>Please clarify that the modeling uses perfect foresight of inflows or that it is using some estimated historical forecasts. If the latter, then please indicate what exceedance level hydrology those estimates align with, e.g., 90% exceedance.</p>	<p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the use of foresight and forecasts in modeling the baseline and the LSJR Alternatives.</p>
1239	77	<p>[From ATT3:]</p> <p>[Page:] 4-3</p> <p>[Subject:] Second bullet</p> <p>This sounds like the modeling fixes the allocation to contractors sometime in the spring and doesn't change it until sometime in the following winter or spring. Please explicitly state</p>	<p>Appendix F.1, Hydrologic and Water Quality Modeling, Section F.1.2 Water Supply Effects Modeling – Methods, contains explanation of the water balance calculations and surface water demands. Section F.1.2.6 Calculation of Surface Water Diversion Allocation clearly states the methodology used in the WSE Model.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>what the model assumes regarding revising allocations as the year unfolds.</p>	
1239	78	<p>[From ATT3:]</p> <p>[Page:] 4-3</p> <p>[Subject:] Last bullet</p> <p>Does this include flood control capacities, e.g., 8000 cfs on the Stanislaus?</p>	<p>Appendix F.1, Hydrologic and Water Quality Modeling, explains the water balance calculations and river flows, and constraints of reservoirs and rivers.</p>
1239	79	<p>[From ATT3:]</p> <p>[Page:] 5-23 to 5-25</p> <p>[Subject: Section 5.2.4]</p> <p>General Comment for Section: Would be appropriate to illustrate all data tables and figures through the most current water year on record. Would be nice to see the difference in such data between dry years and normal-to-wet years.</p>	<p>The requested edits are acknowledged. The State Water Board strived to present data and tables in the SED clearly and in plain language. The information provided shows a full distribution of values for dry to wet conditions. Modifying the data tables and figures as suggested would not change the reader's ability to comprehend the analysis, nor would it affect the conclusions of the impact analysis, therefore no change has been made.</p>
1239	80	<p>[From ATT3:]</p> <p>[Page:] 5-65</p> <p>How minimum reservoir storage targets will be met while still implementing a %UF schedule is unclear.</p>	<p>The SED explains and describes the effects and impacts considering various alternatives and the plan amendments.</p>
1239	81	<p>[From ATT3:]</p> <p>[Page:] 5-67</p> <p>[Subject:] Figure 5-7</p> <p>It is unclear how reservoir storage will be higher under the 60% unimpaired storage than under baseline conditions during drought periods. Would the extra storage come from conditioning water rights?</p>	<p>The Water Supply Effects (WSE) model contains a set of simplifying assumptions regarding reservoir operations, referred to in the SED as carryover storage guidelines, as well as shifting of a portion of the flow requirement to later months in certain water year types, in order to prevent indirect temperature impacts that would occur in the absence of such guidelines. The application of the carryover storage guideline in the LSJR alternatives would cause storage in the New Melones Reservoir higher in response to implementation of the LSJR alternatives than that under baseline in some dry years. Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding reservoir operations and carryover storage assumptions.</p>
1239	82	<p>[From ATT3:]</p> <p>[Page:] 6-6+</p> <p>[Subject:] Figure 6.1</p> <p>Appears to show the confluence of the Sac and SJ rivers at ~55 ft. elevation. Google Earth</p>	<p>The figure has been modified.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>has the elevation at the Stanislaus confluence ~25 feet. This graph also conflicts with Figure 6.4 which appears to have more accurate elevations at the confluences of STM with SJR.</p>	
1239	83	<p>[From ATT3:]</p> <p>[Page:] 6-14</p> <p>[Subject:] Tuolumne Subsection</p> <p>General Comment for the Tuolumne Subsection: A key feature on the Lower Tuolumne River is the vast remnant mining pits which severely fragment the longitudinal geomorphic processes of the river system. These are also known as the "Special Run Pools." At lower flows, these features essentially act as intermittent lakes residing between flowing pool-riffle reaches that appear more like a river should appear. They are extremely disruptive to natural physicochemical and ecological processes that should be occurring in the lower river. Suggest including discussion of these Special Run Pool features as part of the Environmental Setting.</p>	<p>Special-run-pools are now identified in the Environmental Setting section.</p>
1239	84	<p>[From ATT3:]</p> <p>[Page:] 6-14</p> <p>[Subject:] Last paragraph</p> <p>Point bars are not "over-bank" features; they are in-channel features that sit below the banks. Consider revision.</p>	<p>The comment is correct that point bars are in-channel features. The text usage reflects that which occurs in USFWS (2010). In Chapter 6, Flooding, Sediment, and Erosion, Section 6.2, that differentiation is noted by the sentence: "These 'overbank' flows are not flood flows that inundate the entire channel capacity; instead they are flows that inundate the adjacent point bars." Consequently, no text revision is made.</p>
1239	85	<p>[From ATT3:]</p> <p>[Pages:] Throughout Section 6.4</p> <p>[Subject:] 6.4.2</p> <p>General comment for Section 6.4.2: Gravel transport is a natural phenomenon. The language used in this section (and document overall) seems to imply that any level of gravel transport is a negative effect/impact. On the contrary, it is widely accepted that the aquatic life residing in rivers have adapted to not only the flow regime, but also the gravel transport regimes of rivers. Specifically, from the field of disturbance ecology, it is thought that there is usually an intermediate level of gravel transport that indeed enhances the overall ecology of the river (a bottom-up effect) (CITE).</p> <p>Perhaps a discussion of the importance of maintaining a healthy, intermediate level of gravel transport (which is a combination of erosion and sedimentation processes) would help to generate a more holistic/realistic view of the system dynamics and relevance to beneficial uses in this analysis? See the "Intermediate Disturbance Hypothesis" (IDH) by</p>	<p>Much of the discussion addresses gravel transport with respect to its potential impact on channel stability because that is the CEQA impact question. Specifically, in Chapter 6, Flooding, Sediment, and Erosion, Section 6.4.2, "The impact mechanisms for causing sediment transport or erosion and flooding include (1) increasing flows such that they cause substantial additional sediment (gravel and sand) transport or siltation and stream bank erosion (Impact FLO-1), and (2) increasing flows such that they exceed channel capacities and cause flooding outside the levees or floodway (Impact FLO-2)." The impact mechanism and discussion does not imply that any gravel movement is a negative impact. Indeed, as the comment notes the text states "Furthermore, the gravel movement that would likely occur is known to be beneficial for aquatic habitat enhancement (Chapter 7, Aquatic Biological Resources; McBain and Trush 2000; Kondolf et al. 2001; Stillwater Science 2001, 2004)." Chapter 7 addresses these topics from the biological standpoint. Consequently, no text revision is made.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>Townsend & Scarsbrook (1997). *Note sentence on page 6-35 (3d paragraph) eluding to the above: "Furthermore, any gravel movement that would occur is known to be beneficial for aquatic habitat enhancement (Chapter 7, Aquatic Biological Resources; McBain and Trush 2000; Kondolf et al. 2001; Stillwater Sciences 2001, 2004)." This is helpful but this commonly held belief should be called out upfront for the reader's comprehension of what gravel transport, erosion, and sedimentation really entail in terms of analysis.</p>	
1239	86	<p>[From ATT3:]</p> <p>[Page:] 7-3</p> <p>[Subject:] 7.1</p> <p>Justification of the indicator species for anadromous fish (steelhead and fall-run Chinook salmon), coldwater reservoir fish (rainbow trout), and warmwater reservoir fish (largemouth bass) is needed. The use of indicator species should be expressed as a series of hypotheses where the status of one taxa over time represents the status of other taxa based on the actions associated with each of the alternatives being evaluated. Although fall-run Chinook have been well studied, there is considerable uncertainty regarding how each of the alternatives would impact their viability over time. Further, it is not clear how the viability of Chinook salmon or steelhead correlates with the status of other native fish of management concern including lamprey, delta or longfin smelt, and Sacramento splittail and other cyprinids. We presume that the variability of flow during the spring could benefit these other native fish, but it should be explicitly evaluated and explained in section 7.1 or 7.4.</p>	<p>Please refer to Master Response 3.1, Fish Protection, for a discussion of using surrogate species. Please also see Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, and Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, which describes the LSJR flow objectives' benefits to native fish species.</p>
1239	87	<p>[From ATT3:]</p> <p>[Page:] 7-3</p> <p>[Subject:] 7.1</p> <p>There is a possibility that Central Valley spring-run Chinook salmon could become reestablished in the San Joaquin River basin given the implementation of the San Joaquin River Restoration Program. The reestablishment of spring-run Chinook salmon in the San Joaquin River basin is prescribed in the spring-run Chinook salmon recovery plan. Therefore, the State Water Board should consider including spring-run Chinook salmon as another indicator species for anadromous fish.</p>	<p>Please see Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, and Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, which describes how the LSJR flow objectives will benefit native fish species. The program of implementation is designed to address other native species. As described in Appendix K, Revised Water Quality Control Plan, the biological goals element of the program of implementation will seek recommendations on biological goals for other LSJR species as appropriate.</p>
1239	88	<p>[From ATT3:]</p> <p>[Page:] 7-3</p> <p>[Subject:] Table 7-1</p> <p>"Other native fish" are noted in Table 7-1. What other native fish were evaluated?</p>	<p>Please see Chapter 7, Aquatic Biological Resources, , specifically Section 7.2.1, Fish Species, and Table 7-2 Special-Status Fish Species that Occur in the Plan Area, for a list of native fish species that were evaluated in the chapter's impact analysis.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
1239	89	<p>[From ATT3:]</p> <p>[Page:] 7-4</p> <p>[Subject:] Table 7-2</p> <p>The location and habitat information presented in Table 7-2 needs to be updated. Central Valley spring-run Chinook salmon will likely occur in the LSJR geographic area prior to 2022 given the implementation of the San Joaquin River Restoration Program. In addition, Central Valley steelhead will also likely occur upstream of the confluence of the Merced River prior to 2022. Lastly, Sacramento splittail occur in the LSJR geographic area and upstream of the Merced River confluence.</p>	<p>Refer to Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, regarding exclusion of the SJR above the Merced River confluence from the plan area.</p> <p>In Chapter 7, Aquatic Biological Resources, Table 7-2 and Section 7.2.1, Fish Species, have been updated regarding the expected distribution of Central Valley spring-run Chinook salmon with ongoing reintroduction of an experimental population as part of the San Joaquin River Restoration Program. In Table 7-2, Central Valley steelhead are described as occurring in the "Pacific Ocean, Bay-Delta, SJR and three eastside tributaries, Sacramento River and major tributaries." Thus, no edit to Table 7-2 was necessary for steelhead. The range of Sacramento splittail described for the SJR system has been corrected in Table 7-2 and Section 7.2.1. This correction does not change any conclusions in Chapter 7, Aquatic Biological Resources.</p>
1239	90	<p>[From ATT3:]</p> <p>[Page:] 7-4</p> <p>[Subject:] Table 7-2</p> <p>The Sacramento hitch should be included in Table 7-2 and in the species description section (7.2.1?) based on being a California species of special concern.</p>	<p>The content provided by the commenter does not contradict information included in Chapter 7, Aquatic Biological Resources, and would not change the impact determinations made in the chapter. The requested change identified by the commenter has not been made in the SED.</p>
1239	91	<p>[From ATT3:]</p> <p>[Page:] 7-4</p> <p>[Subject:] Alt 2</p> <p>"In the Tuolumne and Merced Rivers, weighted usable area (WUA) for Chinook salmon fry and juvenile rearing would decrease, but floodplain habitat would increase in response to higher spring flows." How can rearing habitat decrease when floodplain habitat is increasing?</p>	<p>In many streams there is a bimodal weighted usable area (WUA) distribution with flow. When the river channel reaches maximum capacity, WUA is decreasing. Then as flow overtops the channel and inundates the floodplain, more habitat that is the right depth and velocity is created and WUA increases (Stillwater 2013).</p>
1239	92	<p>[From ATT3:]</p> <p>[Page:] 7-5</p> <p>[Subject:] Alt 3</p> <p>It seems unlikely that conditions for rearing would be "substantially improve(d)" on the Stanislaus under this Alternative, as the current OCAP operations provide nearly the same flow conditions.</p>	<p>Please see Table-15a in Chapter 7, Aquatic Biological Resources, and the associated impact discussion for LSJR Alternative 3 in the section on juvenile rearing for an explanation of an increase in floodplain inundation events during April and May.</p>
1239	93	<p>[From ATT3:]</p>	<p>Including the Napa River would not change the impact determination made in Chapter 7, Aquatic Biological</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Page:] 7-10</p> <p>[Subject:] Table 7-2</p> <p>Location of Delta Smelt should include the lower Napa River; inclusion of this location may be complicated in location description given the "upstream/downstream" terminology.</p>	<p>Resources. For the purposes of the impact analysis the information provided in the chapter is sufficient.</p>
1239	94	<p>[From ATT3:]</p> <p>[Page:] 7-13</p> <p>[Subject:] Table 7-3</p> <p>Recommend that largemouth bass be broadened to black bass (<i>Micropterus</i> sp). Misidentification is fairly common and other species occur as part of the recreational fishery in the San Joaquin River.</p>	<p>Please refer to Chapter 7, Aquatic Biological Resources, and specifically to footnote b in Table 7-3, which states largemouth bass are an indicator species for warmwater reservoir fish communities, which includes other sport fishes.</p>
1239	95	<p>[From ATT3:]</p> <p>[Page:] 7-14</p> <p>[Subject:] White Sturgeon</p> <p>Location should include Sacramento and SJ Rivers and their tribs.</p>	<p>Including the Sacramento and San Joaquin Rivers and their tributaries would not change the impact determination made in Chapter 7, Aquatic Biological Resources. For the purposes of the impact analysis the information given in Chapter 7 in relation to white sturgeon is sufficient.</p>
1239	96	<p>[From ATT3:]</p> <p>[Page:] 7-14</p> <p>[Subject:] Table 7-3</p> <p>White Sturgeon have been recently documented to occur and spawn in the LSJR geographic area.</p>	<p>Including the information about white sturgeon spawning in the LSJR geographic area would not change the impact determination made in Chapter 7, Aquatic Biological Resources. For the purposes of the impact analysis the information given is sufficient.</p>
1239	97	<p>[From ATT3:]</p> <p>[Page:] 7-15</p> <p>[Subject:] 7.2</p> <p>Format/units should be standardized among all species descriptions. For example, some temperatures are reported as F whereas others as C (and F).</p>	<p>The State Water Board strived to meet high standards of technical writing and made editorial corrections to the Final SED where appropriate. Many commenters provided editorial suggestions that were considered a matter of preference but were not necessary and would not change the analyses or conclusions contained in the SED. The temperature convention used in Chapter 7 generally follows the unit of measurement used during data collection or by source document. The American Fisheries Society Publication Style Guide, allow for the use of either F or C (American Fisheries Society, 2016).</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
1239	98	<p>[From ATT3:]</p> <p>[Page:] 7-16</p> <p>[Subject:] Spring-run Chinook</p> <p>It has not technically been proven that Spring-run Chinook Salmon are not present in the SJR basin eastside tributaries. As such, and due to the fact that salmon exhibit a high level of straying behavior, consider revising such language to reflect that there is still a potential for Spring-run Chinook Salmon to occur in the SJR basin eastside tributaries. Bottom line is there is no way to disprove this so long as they occur in the California Central Valley.</p>	<p>Please refer to Chapter 7, Aquatic Biological Resources, Section 7.2.1, Fish Species, subsection Chinook Salmon, subsection on Central Valley Spring-Run, which discusses information on their potential presence in the eastside tributaries.</p>
1239	99	<p>[From ATT3:]</p> <p>[Page:] 7-19</p> <p>[Subject:] Green Sturgeon</p> <p>The Sturgeon Fishing Report Card data reports are cited, yet the San Joaquin River was left off: there are several years when Green Sturgeon have been reported in all three SJR reaches defined on the report cards. Spawning has also been documented on the Feather River (Seesholtz 2014) and likely spawning behavior observed on the Yuba (Bergman?). Moyle suggested spawning because Radtke reported catching Juvenile Green Sturgeon at Santa Clara Shoal which is a site adjacent to Brannan Island, not a second location.</p>	<p>Including the information provided by the commenter would not change the impact determination made in Chapter 7, Aquatic Biological Resources. For the purposes of the impact analysis the information given is sufficient.</p>
1239	100	<p>[From ATT3:]</p> <p>[Page:] 7-20</p> <p>[Subject:] Green Sturgeon</p> <p>Kohlhorst 1976 presumed that the fish they were catching were White Sturgeon, so referencing that for temps is dubious. See Poytress, et al. 2015 for better info for sentences regarding the timing and conditions associated with spawning.</p>	<p>Including the information provided by the commenter would not change the impact determination made in Chapter 7, Aquatic Biological Resources. For the purposes of the impact analysis the information given is sufficient.</p>
1239	101	<p>[From ATT3:]</p> <p>[Page:] 7-20</p> <p>In this section "Delta Smelt" [is] used in both the plural and singular. AFS convention provides that common names be capitalized, e.g. Delta Smelt.</p>	<p>There are different spelling conventions for "delta smelt" that are employed by different agencies, regardless of the AFS convention. For example, in the USFWS BiOp the spelling "delta smelt" is used and CDFW uses (or used) Delta smelt as they recognized "Delta" as a place name and not a generic "delta." No change was made.</p>
1239	102	<p>[From ATT3:]</p>	<p>Including the information provided by the commenter would not change the impact determination made in Chapter 7, Aquatic Biological Resources. For the purposes of the impact analysis the information given is</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Page:] 7-20</p> <p>[Subject:] DS, 2nd paragraph</p> <p>Consider revising sentence "Delta Smelt is endemic to only. . ." The use of "endemic" and "only" creates the impression of redundancy.</p>	<p>sufficient.</p>
1239	103	<p>[From ATT3:]</p> <p>[Page:] 7-20</p> <p>[Subject:] DS, 2nd paragraph</p> <p>Include lower Napa River as part of geographic distribution.</p>	<p>Including the information provided by the commenter would not change the impact determination made in Chapter 7, Aquatic Biological Resources. For the purposes of the impact analysis the information given is sufficient.</p>
1239	104	<p>[From ATT3:]</p> <p>[Page:] 7-20</p> <p>[Subject:] DS, 3rd paragraph</p> <p>First sentence: The term "first flush" was used in the FWS OCAP to describe the first precipitation-driven event, where the system receives an influx of fresh, turbid water. Influxes of fresh, turbid water into the Delta can, indeed, occur multiple times in the winter. Consider revising sentence to state that Delta Smelt respond to precipitation-driven runoff into the system. Having more than one "first flush," as this sentence suggests, isn't intuitive. If the author intends to keep "first flush" in the text, then some description should be added to clarify the term: for example, the USFWS OCAP provides turbidity levels for "first flush." Then the author could maintain the term and make it plural (to describe all precipitation-driven events that meet some particular criteria). Suggest rewording.</p>	<p>Numerous references supporting the information on page 7-20 and 7-21 are already provided. Including an additional reference would not change the impact determination made in the chapter. Regarding the second comment, the word "seem" was deleted.</p>
1239	105	<p>[From ATT3:]</p> <p>[Page:] 7-21</p> <p>2nd paragraph: Please provide reference to support second sentence.</p> <p>3rd paragraph: First sentence: strike "seem."</p>	<p>Numerous references supporting the information on page 7-20 and 7-21 are already provided. Including an additional reference would not change the impact determination made in the chapter. Regarding the second comment, the word "seem" was deleted.</p>
1239	106	<p>[From ATT3:]</p> <p>[Page:] 7-21</p>	<p>The following citation changes have been made to the text: Baskerville-Bridges et al. 2004 was added after "increased foraging efficiency" and NMFS 2009 was deleted and replaced with USFWS 2008 Biological Opinion for Operations of the CVP SWP. This correction does not change any conclusions in Chapter 7,</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Subject:] 3rd paragraph</p> <p>Please provide reference to support the sentence that starts "Few daylight trawls. . ." unless the NMFS 2009 reference is meant to support this. If so, consider using a more applicable reference (i.e., not NMFS).</p>	<p>Aquatic Biological Resources.</p>
1239	107	<p>[From ATT3:]</p> <p>[Page:] 7-22</p> <p>[Subject:] 1st sentence</p> <p>True. More correctly, this could be written that LFS is a candidate species for listing under ESA (warranted but precluded).</p>	<p>Per the comment, the text in the sentence referenced in Chapter 7, Aquatic Biological Resources, was revised to say longfin smelt is a candidate for listing under ESA.</p>
1239	108	<p>[From ATT3:]</p> <p>[Page:] 7-22</p> <p>[Subject:] 1st full paragraph</p> <p>Second to last sentence: the way this is written, the reader comes to understand that "ocean-going" is being given as the direct definition for "pelagic," whereas pelagic defines the individual's location in the water column. Consider revising for clarity.</p>	<p>Per the comment, the text in the sentence referenced in Chapter 7, Aquatic Biological Resources, was revised for clarity.</p>
1239	109	<p>[From ATT3:]</p> <p>[Page:] 7-23</p> <p>[Subject:] 7.2</p> <p>It may be warranted to specify that Sacramento splittail require prolonged floodplain inundation (~30 days in duration) to produce strong year classes, which could be affected by the implementation of LSJR alternatives.</p>	<p>Please refer to Chapter 7, Aquatic Biological Resources, which says that Sacramento splittail recruitment occurs in years with greater than or equal to 30 days of floodplain inundation. No change was made to Chapter 7.</p>
1239	110	<p>[From ATT3:]</p> <p>[Page:] 7-27</p> <p>[Subject:] White Sturgeon</p> <p>Disagree that White Sturgeon are observed in the SJR only in wet years. Sturgeon fishing reports cards and USFWS studies show presence every year, even the recent string of critical</p>	<p>Per the comment, the text in the sentence referenced in Chapter 7, Aquatic Biological Resources, was revised to include a citation by Jackson et al 2016, and the text "particularly in wet years" was deleted.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		dry years (see Jackson, et al. 2016 for information regarding spawning detected in 2011-2012; we have annual reports describing 2011-2016 spawning surveys, 2013-2016 larval migration surveys, and 2012-2016 telemetry). Evidence to date demonstrates that White Sturgeon attempt to spawn in the SJR every year and suggests that they only do when they receive an adequate streamflow cue.	
1239	111	[From ATT3:] [Subject: Section 7.2.1] Subsection title is missing.	The comment is acknowledged. A review of the section does not show a missing title. No update was made to the chapter.
1239	112	[From ATT3:] [Page:] 7-29 "State Water Board will continue to coordinate adaptive implementation and future changes to the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (2006 Bay-Delta Plan) with the SJRRP." Is this currently happening? If not, then how can we expect it to "continue"?	The paragraph from which the commenter quotes (Chapter 7, Aquatic Biological Resources, Section 7.2.2, Reservoirs, Tributaries, and LSJR) states that the SJRRP has not been fully implemented, and major planning and permitting activities are currently underway. To date, meaningful flows resulting from the SJRRP have not reached the plan area and therefore the SJRRP flows are not relied upon in the SED analysis. Further, both 7.2.2 and Appendix K, Revised Water Quality Control Plan, Chapter IV, Section C.11 indicate that the State Water Board may consider how the SJRRP flows affect the SJR during future updates to the plan. Please refer to Master Response 1.1, General Comments, for information regarding coordination with the Interagency Ecological Program, STM Working Group and other interested parties regarding the San Joaquin River Restoration Program.
1239	113	[From ATT3:] [Page:] 7-29 [Subject:] 7.2.2 The use of steelhead as an indicator species is questionable based on limited data and high uncertainty associated with the data that currently exists within the Merced, Tuolumne, and Stanislaus rivers.	Please see Master Response 3.1, Fish Protection, regarding the use of surrogates. Steelhead were considered a suitable indicator species for impact analysis because of their special status (listed as threatened under federal ESA), sensitivity to expected environmental changes in response to implementation of the plan amendments, and unique aspects of their life history compared to Chinook salmon.
1239	114	[From ATT3:] [Page:] 7-31 [Subject:] Table 7-4 January should be considered "primary occurrence" for both incubation and rearing.	As shown in Chapter 7, Aquatic Biological Resources, Table 7-4, January is considered as an incubation and rearing month for Central Valley fall-run Chinook salmon.
1239	115	[From ATT3:] [Page:] 7-31 [Subject:] Table 7-4	The content provided by the commenter would not change the impact determinations made in Chapter 7, Aquatic Biological Resources. Data from various sources was used to determine the timing of <i>O. mykiss</i> passage.

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>Data from the Stanislaus Weir show O. mykiss passage from Sept-Mar and also May. The table should reflect this information.</p>	
1239	116	<p>[From ATT3:]</p> <p>[Page:] 7-32</p> <p>[Subject:] Figure7-1</p> <p>The figure should be updated and provide fall-run escapement data after 2011.</p>	<p>The content provided by the commenter would not change the impact determinations made in Chapter 7, Aquatic Biological Resources. The escapement information was up to date at the time of the writing of Chapter 7.</p>
1239	117	<p>[From ATT3:]</p> <p>[Page:] 7-33</p> <p>[Subject:] Flow Regulation</p> <p>It is incorrect to state that the AFRP believed that the Final Restoration Plan flow schedule would double salmon production. The Working Paper provided flows that were expected to double production (at the time) but the FRP flow schedule was greatly reduced with a filter of "reasonableness."</p>	<p>The sentence has been revised to indicate that the Final Restoration Plan flow schedule was not expected to double salmon production. This correction does not change any impact determinations made in Chapter 7, Aquatic Biological Resources.</p>
1239	118	<p>[From ATT3:]</p> <p>[Page:] 7-34</p> <p>[Subject:] 7.2.2</p> <p>"Currently, fall-run Chinook salmon are known to spawn in a 23-mile stretch of the Stanislaus River downstream of Goodwin Dam, but most spawning occurs in the first 10 miles below New Melones Dam (USBR 2011)." This statement is inaccurate.</p>	<p>On review of the USBR 2011 document, this statement was found in Chapter 5, page 5-27.</p>
1239	119	<p>[From ATT3:]</p> <p>[Page:] 7-35</p> <p>[Subject:] Disease</p> <p>Need a citation for RST disease accounts.</p>	<p>The following citations were added to the subsection Disease under Environmental Stressors: Foott and Fogerty 2011 and Foott et al. 2007. This correction does not change any conclusions in Chapter 7, Aquatic Biological Resources.</p>
1239	120	<p>[From ATT3:]</p> <p>[Page:] 7-37</p>	<p>Please refer to Chapter 7, Aquatic Biological Resources, for a discussion of in-river mining pits in the sections about environmental stressors for both the Tuolumne River and Merced River. For the purposes of the</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Subject:] Habitat Alteration</p> <p>The most significant habitat alteration by many experts are the "Special Run Pools." These vast, remnant mining pits are essentially intermittent lakes, and are completely disruptive to the natural downstream progression in river character (both physical and ecological). The river continuum concept (Vannote 1980) is totally disrupted multiple times. There is more Special Run Pool Habitat than actual free-flowing pool-riffle morphology in the most significant portion of the lower river--the upper anadromous salmonid spawning reach. Consider the negative impacts these remnant mining pits that occur on the main channel have on physical processes, water quality, and the ecosystem overall.</p>	<p>impact analysis, the information provided in Chapter 7 is sufficient and no change was made.</p>
1239	121	<p>[From ATT3:]</p> <p>[Page:] 7-50</p> <p>[Subject:] 7.2.2</p> <p>The statement "Agricultural diversions have the limited potential to remove spring-run and winter-run Chinook salmon adults, juveniles, or fry, or any life stage of Central Valley steelhead from the Bay-Delta." is not appropriate. In fact, the loss of juvenile fall-run Chinook salmon or steelhead is unknown, but is suspected to occur.</p>	<p>Per the comment, the word "limited" was deleted from the sentence. The remaining text of the paragraph describes the potential loss of steelhead and other fish species. For the purposes of the impact analysis, the information provided in Chapter 7 is sufficient and no further changes were made.</p>
1239	122	<p>[From ATT3:]</p> <p>[Page:] 7-51</p> <p>[Subject:] 7.2.2</p> <p>We recommend that more focus is given in describing the environmental conditions of the LSJR in relation to native fish populations with a focus on the characteristics influenced by the alternatives or that may interact with the effects of the alternatives. It may be helpful to develop or present the conceptual models linking alternatives to environmental characteristics being discussed in this section.</p>	<p>The purpose of Section 7.2.2 is to describe the environmental setting of the Lower San Joaquin River and environmental stressors. Section 7.4 discusses the impact analysis for the different alternatives on the LSJR. For the purposes of the impact analysis, the information provided in Chapter 7, Aquatic Biological Resources, is sufficient and no further changes were made.</p>
1239	123	<p>[From ATT3:]</p> <p>[Page:] 7-52</p> <p>[Subject:] 7.3.1</p> <p>The San Joaquin River Restoration Settlement Act could/should be identified if the assessment extends upstream of the Merced River confluence.</p>	<p>The plan area and extended plan area do not extend upstream of the Merced River confluence. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, Plan Area and Extended Plan Area, for comments regarding the geographic extent of the SED. Please note that SED Chapter 1, Section 1.2, Plan Area, states that the plan area encompasses the San Joaquin River downstream of the Merced River confluence.</p>
1239	124	<p>[From ATT3:]</p>	<p>Please see Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, Section 19.3.2, Methods of Floodplain Inundation Evaluation, which discusses how</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Page:] 7-58</p> <p>[Subject:] 7.4.2</p> <p>It is unclear how the flow and floodplain models were run to provide the cumulative distributions by percentile. Some description of the models may be necessary to evaluate the validity of the results (%change) reported later in this section.</p>	<p>modeling was used in the floodplain evaluation.</p>
1239	125	<p>[From ATT3:]</p> <p>[Page:] 7-62</p> <p>[Subject:] Table 7-7</p> <p>In Table 7-7 for Impact AQUA-3, it states that Impact AQUA-3 pertains to quantity and quality of spawning and rearing habitat resulting from changes in flow. However, the data and methods used appear to be focused on quantity and ignore quality of habitat.</p>	<p>Please refer to Master Response 3.1, Fish Protection, for information regarding expected benefits to fish habitat from implementation of the Plan Amendments. Also refer to Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30. See Chapter 7, Aquatic Biological Resources, Section 7.4.2 Methods and Approach (LSJR Alternatives, Physical Habitat Availability), for a description of the habitat metrics used to evaluate changes in the quantity and quality of spawning and rearing habitat.</p>
1239	126	<p>[From ATT3:]</p> <p>[Page:] 7-64</p> <p>[Subject:] Physical Habitat</p> <p>WUA methodology is insufficiently described. WUA values are scaled (area/distance) but it is unclear whether spawning areas were calculated for the spawning reach only, or the whole anadromous reach.</p>	<p>Please refer to Master Response 3.1, Fish Protection, regarding the adequacy of modeling to support the analyses, including a discussion of the weighted usable area (WUA) analyses. Also see the section on Physical Habitat Availability, and information in that section regarding the methods and approach, for a description of the methods for the WUA modeling and analysis.</p>
1239	127	<p>[From ATT3:]</p> <p>[Page:] 7-74</p> <p>[Subject:] 7.4.3</p> <p>Suitable spawning habitat should be evaluated based on variables beyond depth and velocity. For example, accounting for suitable temperatures may be valuable to bolster the assessment.</p>	<p>Please see Chapter 7, Aquatic Biological Resources, Impact AQUA-4, which discusses changes in water temperatures for all life stages.</p>
1239	128	<p>[From ATT3:]</p> <p>[Page:] 7-75+</p> <p>[Subject:] Tables 7-11, 7-12, 7-13, 7-14, 7-16</p>	<p>As described in Chapter 7, Aquatic Biological Resources, in Section 7.4.2 Methods and Approach (LSJR Alternatives, Physical Habitat Availability), weighted usable area (WUA) is expressed in terms of square feet or square feet per 1,000 linear feet of stream. The sources for the WUA-discharge relationships are identified in this section. The terms used to express WUA in the individual tables have been added to the captions of Tables 7-11 through 7-14 and 7-16.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>The tables lack units for WUA values (meters squared?). There also appears to be no reference source for this information.</p>	
1239	129	<p>[From ATT3:]</p> <p>[Page:] 7-80</p> <p>[Subject:] Juv Rear--Chinook</p> <p>WUA values appear to be capped at 1500 cfs (Table 7-10). Lack of inclusion of inundated floodplains at higher flows gives a false impression of the actual available habitat as well as the percentage that is available. Expect these numbers probably came from Aceituno 1993 and do not reflect the current in-channel and floodplain models.</p>	<p>Table 7-10 in Chapter 7, Aquatic Biological Resources, includes floodplain inundation flows of up to 5,000 cfs. The WUA-flow relationships were used to evaluate changes in spawning and rearing habitat within the lower range of flows that generally fall within the bankfull width of the channel while the floodplain inundation-flow relationships were used to evaluate potential changes in rearing habitat within the upper range of flows that inundate adjacent floodplains. Please also refer to Master Response 3.1, Fish Protection, regarding floodplain modeling and the use of weighted usable area (WUA).</p>
1239	130	<p>[From ATT3:]</p> <p>[Page:] 7-87+</p> <p>[Subject:] Table 7-15</p> <p>The table needs additional information either in the text or caption what is meant by "percentile" on the y-axis.</p>	<p>As discussed in Chapter 7, Aquatic Biological Resources, the percentile (i.e., percent cumulative distribution) associated with each value indicates the percent of time that the values were less than the specified value. For example, a 10th percentile value of 2 indicates that 10 percent of the time, the values were less than 2. The 0th percentile is the minimum value, the 50th percentile is the median value, and the 100th percentile is the maximum value. The 10th and 90th percentiles represent relatively low and relatively high values and are representative of multiple years rather than the 1 year with the highest value and the 1 year with the lowest value. Percentiles and cumulative distributions are also described in Chapter 5, Surface Hydrology and Water Quality, Section 5.2.2, Upper San Joaquin River, Unimpaired and Historical Flow. No change to the SED has been made.</p>
1239	131	<p>[From ATT3:]</p> <p>[Page:] 7-94+</p> <p>[Subject:] Tables 7-17</p> <p>Is temperature factored into this WUA calculation, or just depth and velocity? It appears that temps were not included, which basically invalidates any of the oversummering information, and will greatly overstate Tuolumne and Merced O. mykiss summer habitat.</p>	<p>In Chapter 7, Aquatic Biological Resources, the WUA, floodplain, and temperature analyses are conducted separately, but conclusions synthesized the information.</p>
1239	132	<p>[From ATT3:]</p> <p>[Page:] 7-115+</p> <p>[Subject:] Tables 7-22</p> <p>The analysis for June temperatures appears to be missing.</p>	<p>It is noted in Table 7-22 that the primary months of concern for juvenile rearing with respect to temperature are March through May, which is why June is not included.</p>
1239	133	<p>[From ATT3:]</p> <p>[Page:] 7-136</p>	<p>Please refer to Master Response 1.1, General Comments, for a discussion regarding the requirements of CEQA and program-level review. Also, see Master Response 3.1, Fish Protection, for information regarding the adequacy of modeling to support the analyses.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>Impact AQUA-7, the evaluation of redd dewatering was conducted at too coarse of scale to provide meaningful results given the scale at which the alternatives would be implemented on (i.e., running 7-day periods). The additional variability in flows from the alternatives is of concerns regarding Chinook salmon. Dewatering a redd for even a day could negatively influence redd viability and fry production. Additional analyses are needed to address this potential negative impact.</p>	
1239	134	<p>[From ATT3:]</p> <p>[Page:] 7-139</p> <p>Impact AQUA-8, the evaluation of peak flows should consider the variability in dissolved oxygen resulting from increased dam releases. There is empirical evidence that dissolved oxygen declines during the spring as a result from increased dam releases.</p>	<p>As discussed in Chapter 7, Aquatic Biological Resources, dissolved oxygen (DO) levels could potentially increase in response to higher flows and cooler temperatures in response to implementation of the LSJR alternatives. See Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, for discussion of dissolved oxygen effects from increased flows.</p>
1239	135	<p>[From ATT3:]</p> <p>[Page:] 7-140</p> <p>Impact AQUA-9, the evaluation of floodplain benefits should account for the duration of inundation for a given spatial area. The benefit from floodplain inundation is related to the duration of inundation relative to increased autochthonous productivity, increased or decreased temperature pending the season, ability of fish to occupy the floodplain for a time that is biologically relevant (i.e., rear or spawn), and ability of non-native piscivorous fish to occur in the habitat and mitigate the benefit to small native fish.</p>	<p>Please see Master Response 3.1, Fish Protection, for a discussion about floodplain inundation, including the duration of inundation and food availability. Also see Master Response 3.1, regarding predation and the discussion about predation effects on juvenile salmonid survival during floodplain inundation.</p>
1239	136	<p>[From ATT3:]</p> <p>[Page:] 16-119</p> <p>[Subject:] 3rd paragraph</p> <p>Post-project monitoring for gravel augmentation efforts is mentioned here. Recommend including the importance of conducting post-project monitoring in relation to pre-project conditions (e.g., in a Before-After context). Too often gravel augmentation efforts are evaluated in a post-project context only, which has far less meaning or strength in conclusions regarding project effectiveness.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues. Pre-project conditions are important in determining the effectiveness of gravel augmentation. Table 16-39, Potential Mitigation Measures for Construction and Operation Activities Related to Non-flow Measures, identifies preconstruction surveys to assess pre-project conditions and a mitigation and monitoring plan to determine the success of the project post construction. As described in Chapter 16, Evaluation of Other Indirect and Additional Actions, Section 16.3.3, Gravel Augmentation (specifically in the sub-section titled “Summary of Potential Action”), pre-project assessments, planning, and design activities for gravel augmentation projects may include geomorphic surveys, topographic/bathymetric surveys, sediment sampling, hydrologic analyses, and hydraulic and sediment transport modeling. Additionally, post-project monitoring was described as typically occurring in an adaptive implementation framework that typically coordinates evaluation of project effectiveness and modifications, if needed.</p>
1239	137	<p>[From ATT3:]</p> <p>[Page:] 16-131 to 16-132</p> <p>[Subject:] Last sentence of 16-131</p>	<p>Please see response to comment 1239-136 regarding the importance of establishing pre-project conditions and post-project monitoring. Table 16-39, Potential Mitigation Measures for Construction and Operation Activities Related to Non-flow Measures, identifies pre-construction surveys to assess pre-project conditions and a mitigation and monitoring plan to determine the success of the project post construction. Pre-project assessments and post-project monitoring is also described in Chapter 16, Evaluation of Other Indirect and Additional Actions, Section 16.3.4, Enhance In-Channel Complexity (specifically in the subsection titled</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>Agree with stated typical post-project monitoring activities. However, we feel it is important to stress the importance of comparing such results to pre-project conditions. A before-versus-after approach is a significantly more powerful monitoring approach. Post-project evaluations only are too often conducted, and this diminishes/constrains our ability to assess effectiveness and draw valid conclusions, and also impacts our ability to enhance designs in the future.</p>	<p>“Summary of Potential Action”).</p>
1239	138	<p>[From ATT3:]</p> <p>[Page:] 16-204</p> <p>[Subject:] Invasive Aq Veg</p> <p>The section fails to take into consideration the potentially beneficial effects of managing the system to allow periodic influx of saline water to reduce populations of undesirable non-native freshwater species such as Egeria and Asian clams.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues. Chapter 16, Evaluation of Other Indirect and Additional Actions, Section 16.3.10, Invasive Aquatic Vegetation Control, provides a summary of potential actions to control invasive aquatic vegetation, but does not provide an exhaustive list. The concept of salinity influx management as an invasive aquatic vegetation control method is described in the first paragraph of Section 16.3.10 as being studied in restoration designs for application to reduce invasion risk. For example, non-native largemouth bass in California typically avoid salinities of 3-5 parts per trillion (ppt) or higher (Moyle 2002, p. 399). In addition, 1 ppt average salinity will possibly lower the biomass of Egeria densa (Brazilian waterweed) while promoting the growth of Stuckenia pectinate (sago pondweed), a native aquatic plant, through less competition with E. densa (Borgnis and Boyer 2015). However, Section 16.3.10, Table 16-23, Potential Environmental Effects of Invasive Aquatic Vegetation Control, identifies the potential physical environmental impacts associated with either mechanically removing aquatic invasive species or removing them via chemicals, as required by CEQA (State CEQA Guidelines § 15064(d)). CEQA does not require identification of potentially beneficial effects. No further response is required.</p>
1239	139	<p>[From ATT3:]</p> <p>[Page:] 19-2</p> <p>[Subject:] Second sentence</p> <p>It should be clarified that flows in summer and fall are increased over unimpaired flows for irrigation purposes and winter flows are actually reduced from UF. As written it is unclear how flows are shifted in fall and winter and summer flows are not mentioned.</p>	<p>Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, was updated to add that summer and early fall flows are higher under the impaired condition, and that winter flows have been reduced.</p> <p>For a full description of the alteration to flows please see Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives.</p>
1239	140	<p>[From ATT3:]</p> <p>[Page:] 19-3</p> <p>[Subject:] first paragraph; first sentence</p> <p>Suggest revising to "it is widely thought that the basin now only supports fall-run Chinook salmon populations". It has not been proven that CV Spring-run Chinook salmon are not present at times in the LSJR basin.</p>	<p>Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, was updated to reflect the commenter’s suggestion.</p>
1239	141	<p>[From ATT3:]</p>	<p>Figure 19-1 in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, was updated based on the numbers for the Tuolumne River as cited in USFWS</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Page:] 19-3</p> <p>[Subject:] Figure 19-1</p> <p>The Tuolumne River Difference is not accurate (the other watersheds look okay). This figure suggests the Difference for the Tuolumne is around -18,000 fish. The Difference for the Tuolumne is actually around -12,035 fish for the stated time period. Source: Chinookprod (AFRP).</p>	<p>2013a.</p>
1239	142	<p>[From ATT3:]</p> <p>[Page:] 19-3</p> <p>[Subject:] Figure 19-1</p> <p>Chinookprod results utilize a hatchery proportion methodology that over-represents the naturally produced fish in most cases. Thus, the situation is actually worse than represented here. [http://escholarship.org/uc/item/7237t9xn Huber and Carlson 2015]</p>	<p>Please see Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, which acknowledges the inaccuracies of historical estimates of natural production. See also Master Response 3.1, Fish Protection, regarding the role of hatcheries.</p>
1239	143	<p>[From ATT3:]</p> <p>[Page:] 19-4</p> <p>Suggest that the natural flow regime is also needed between July and January. The unintended consequences of releasing higher flows than UF between July and January likely creates habitat and increases the abundance of warm-water predators year-round that have a negative effect on survival of juvenile salmonids between February and June. A comprehensive year-round focus on unimpaired flows needs to be incorporated into the State Board’s plan. Otherwise the benefits you would get from a higher proportion of unimpaired flows will have less of a benefit than they could otherwise.</p>	<p>Unimpaired flow on a year-round basis is complicated by the need to create cold water habitat below the reservoirs during the summer. Historically, native fish would have had access to cold water at higher elevations, but now they are confined by dams to the valley. As identified in Appendix K, Revised Water Quality Control Plan, there is a need for fish passage above dams and/or better cold-water infrastructure on the dams to more efficiently provide cold water below the dams. If these action were accomplished it could be feasible to have lower flow requirements during the summer.</p> <p>As described in Appendix K, and further clarified in Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 2.2, Adaptive Implementation, the State Water Board recognizes the importance of flows during the time period outside of February through June. The plan amendments for the LSJR flow objectives include a LSJR numeric flow objective expressed as an unimpaired flow value and adaptive implementation that allows shifting flow into the July through January time period. Please also see Master Response 2.1 for responses to commenters’ requested modifications to the plan amendments.</p> <p>Please also refer to Master Response 3.1, Fish Protection, regarding predation, year-round flows, and seasonal flows from February through June.</p>
1239	144	<p>[From ATT3:]</p> <p>[Page:] 19-8</p> <p>Using temperature between 1970 and 2003 probably does not reflect the increase in water temperatures we are expecting in the future due to climate change.</p>	<p>The time period represents baseline conditions. Water quality control plans are periodically reviewed and updated to address changing conditions or new information. Please see Master Response 3.2, Surface Water Analyses and Modeling, for information regarding climate change. Please also see Chapter 14, Energy and Greenhouse Gases, Impact EG-5 for a discussion regarding climate change and hydrology.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
1239	145	<p>[From ATT3:]</p> <p>[Page:] 19-8</p> <p>[Subject:] 2nd paragraph</p> <p>Petts (2009) supports the concept that flow management should sustain flows that mimic the "yearly" variability to which aquatic biota have evolved. That would include having lower flows during the summer and fall irrigation season, which is not incorporated into the February-June proposal.</p>	<p>Refer to response to comment 1239-143 regarding responses to comments related to yearly flows. Please see Master Response 1.1, General Comments, for responses to comments that do not raise significant environmental issues.</p>
1239	146	<p>[From ATT3:]</p> <p>[Page:] 19-9</p> <p>With climate change, water temperatures are likely to increase over and above those already experienced due to water management at the dams. If you release water from the dams on an unimpaired schedule year-round, the fish may be able to adapt to warming water temperatures due to climate change by growing faster and leaving the tributaries earlier in the season. Otherwise, if you artificially keep the fish in the tributaries longer than they would under unimpaired flows (higher summer flows than unimpaired), they may run into lethal water temperatures downstream which can't be controlled or reduced by releases from the dams and essentially work as a trap so they perish downstream before getting to the ocean.</p>	<p>Refer to response to comment 1239-143 regarding responses to comments related to yearly flows. Higher summer flows are often needed to create cold water habitat. Please see Master Response 3.1, Fish Protection, for figures that illustrate the timing of O. mykiss. These figures show that O. mykiss age 1+ migrate relatively early in the year when temperatures are not as problematic. Young-of-the-year O. mykiss and fall-run Chinook salmon require improved temperature conditions in the late spring. Please see Master Response 1.1, General Comments, for responses to comments that do not raise significant environmental issues. Please also refer to response to comment 1239-169 regarding climate change in the evaluation of the LSJR alternatives.</p>
1239	147	<p>[From ATT3:]</p> <p>[Page:] 19-19</p> <p>Juvenile rearing life stage extends into April and May in the lower San Joaquin River. It looks right in table 19-1, but the second to last sentence in the previous paragraph (before the table) says the core juvenile rearing life stage was between January and March.</p>	<p>Please see Table 19-2 for criteria used for the LSJR. Steelhead smoltification criteria (57.2°F) are the most sensitive to temperature during April 1 to June 30 and were therefore used for that time period.</p>
1239	148	<p>[From ATT3:]</p> <p>[Page:] 19-20</p> <p>This section is unclear and contradictory in some cases. It is stated that 30-50% of UF is reasonable protection. However, it is also stated that based on modeling, significant temperature benefits of the smoltification life stage will occur only with 50 to 60% UF on the Stanislaus and Merced Rivers during April and May, and only through March in the Lower San Joaquin River at 60% UF and that other unimpaired flows are not expected to produce significant benefits on optimal salmonid temperature habitat.</p>	<p>The benefits as stated by the commenter are correct, but are underrepresented when not considering other temperature results. As described in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, there are substantial reductions to both average and 90th percentile 7DADM temperatures under all of the evaluated unimpaired flows on the Merced River during April, May, and June that will likely benefit salmonids. There are expected reductions to both average and 90th percentile 7DADM temperatures on the LSJR primarily during March through June that may be beneficial to migrating salmonids. Additionally, there are substantial reductions in harmful and lethal temperatures for salmon and steelhead that will benefit rearing and migrating lifestages. Please see Master Response 3.1, Fish Protection, regarding the adequacy of the temperature analysis, reductions in harmful and lethal temperatures, and temperatures during June. Also refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for additional responses to comments asserting that higher flows are needed than are described in the plan amendments.</p>

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Ltr#	Cmt#	Comment	Response
1239	149	<p>[From ATT3:]</p> <p>[Page:] 19-20</p> <p>"However, modeling results indicate that significant temperature benefits to the smoltification life stage will occur only with 50% and 60% unimpaired flows on the Stanislaus and Merced Rivers during April and May." Without improvement in smoltification conditions, we can expect little improvement in survival. Why was 50-60% not chosen based on this statement? Please clarify .</p>	<p>The needs for smoltification are different than for survival.</p> <p>There are substantial reductions in harmful and lethal temperatures for salmon and steelhead that will benefit rearing and migrating lifestages. Please see the average and 90th percentile temperature tables in Chapter 7, Aquatic Biological Resources, and see Master Response 3.1, Fish Protection, regarding reductions in temperatures during June. Also refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for additional responses to comments asserting that higher flows are needed than are described in the plan amendments.</p>
1239	150	<p>[From ATT3:]</p> <p>[Page:] 19-22</p> <p>[Subject:] Table 19-3</p> <p>Are adult migration temperatures met through skimming water off the Jan-June period and applying it here, or through cold water pool minimums (or both)? Please clarify.</p>	<p>A combination of carryover storage guidelines and shifting some of the February through June water to other times of the year create colder water temperatures in September and October as seen in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, Table 19-3. Please also see Master Response 2.1, Amendments to the Water Quality Control Plan, for clarification on carryover storage requirements and details of implementation of the plan amendments.</p>
1239	151	<p>[From ATT3:]</p> <p>[Page:] 19-22</p> <p>[Subject:] Table 19-3</p> <p>The tables shows no significant (10%+) improvement in temperatures for most lifestage categories, except for the 50-60% of unimpaired flow conditions. How will fish populations improve if there is no significant improvement to temperatures?</p>	<p>Please see Chapter 2, Water Resources, Table 2-22 and Figure 2-10, which show how water has been erratically managed in the past on the Stanislaus River. The plan amendments would more consistently provide water during February through June across these months and in all years. While on average there are limited temperature improvements on the Stanislaus River, there would be improvements during some years under implementation of the LSJR flow objective with adaptive implementation. Please also see Master Response 3.1, Fish Protection, for discussion of the importance of the June timeframe, and for figures that show reductions in water temperature during 1991 on the Stanislaus River as an example.</p> <p>Additionally, adaptive implementation adds value to the percent of unimpaired flow requirement because flows can be managed to maximize benefits. There are also likely to be synergistic benefits from having additional flow from all three tributaries managed in a comprehensive approach. Refer to Master Response 2.2, Adaptive Implementation, for more information on adaptive implementation. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for a response to comments asserting that more flow is needed than is recommended in LSJR Alternative 3.</p> <p>Temperature is just one of many expected benefits from improved flow conditions on the Stanislaus River. As an example, please see Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, Tables 19-22 and 19-27, for floodplain benefits that are influenced by additional flows from the Stanislaus River. There is high potential to improve floodplain habitat in both the Stanislaus River and below the Stanislaus River confluence in the LSJR.</p>
1239	152	<p>[From ATT3:]</p> <p>[Page:] 19-22</p>	<p>Please see response to comment 1239-151 regarding temperature conditions.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Subject:] Table 19-3</p> <p>This table shows that 40% UF won't likely improve temperature conditions on the Stan.</p>	
1239	153	<p>[From ATT3:]</p> <p>[Page:] 19-23</p> <p>[Subject:] Table 19-4</p> <p>40% UF only appears to improve conditions for October more than 1 °F. 50-60% UF is necessary to achieve more than 1 °F from March through July, so why is 40% considered protective? Please clarify.</p>	<p>Please see response to comment 1239-151 regarding temperature conditions. There may be incidental improvements in October. Also, see Master Response 1.2, Water Quality Control Planning Process, related to the water quality control planning process and the consideration of beneficial uses and Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the purposes and needs of the plan amendments.</p>
1239	154	<p>[From ATT3:]</p> <p>[Page:] 19-32</p> <p>[Subject:] Tables 19-13 to 19-16</p> <p>These model values should be reported below the confluences. There is no value in reporting the changes above the Merced confluence, as that is outside the affected area as the SED is currently confined in other areas of the document.</p>	<p>Tables 19-13 to 19-16 do not appear to show the content identified in the comment. Tables 19-12 to 19-14 show temperatures above the Merced confluence and provide information about the temperature of the water that is mixing with the Merced River. Table 19-9 to 19-11 show temperature information on the Merced River near the confluence. Together these tables show water temperatures from both sources. The water temperatures shown in Tables 19-12 to 19-14 above the Tuolumne confluence provide a result that includes how these two sources mix.</p>
1239	155	<p>[From ATT3:]</p> <p>[Page:] 19-34</p> <p>[Subject:] Adult Migration Eval</p> <p>This data may be better analyzed through assessing the average date (and variance) at which temperatures become suitable (and remain suitable) for migration under the various scenarios. Also potential climate change impacts should be considered here. Additionally problematic is lack of a year-round standard, requiring that water be taken from the Jan-Jun period to meet needs outside that window. This point about when conditions become unsuitable applies also to juvenile outmigration (and smolting temps).</p>	<p>There are many ways to evaluate temperature results. Chapter 7, Aquatic Biological Resources, and Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, include meaningful evaluations of water temperature. Refer to Master Response 3.1, Fish Protection, regarding water temperature analysis methods, consideration of seasonal flows from January through June, response to comments regarding year-round flows, and expected benefits to fish from implementation of the plan amendments, including reductions in harmful and lethal temperatures, and temperature improvements in June. Please see response to comment 1239-143 regarding time periods outside of February through June.</p> <p>Please also refer to response to comment 1239-169 regarding climate change.</p>
1239	156	<p>[From ATT3:]</p> <p>[Page:] 19-38</p> <p>It seems that in March, April and May one would want to meet the core juvenile rearing temperature criteria 100% of the time (which is obtained more frequently with the higher</p>	<p>See Master Response 1.2, Water Quality Control Planning Process, related to the water quality control planning process and consideration of beneficial uses. Refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments that assert more flow is needed than recommended in LSJR Alternative 3, and regarding the relationship between the salmon doubling objective and the LSJR flow objectives. See Master Response 3.1, Fish Protection, regarding the Delta Flow Criteria Report for responses to comments that assert 60 percent unimpaired flow is needed to protect fish.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>unimpaired flows [40 to 60%]) for as much of the river as possible. It would be interesting to see how 100% unimpaired flows affect water temperatures in the tributaries and in the mainstem San Joaquin River for comparison. Meeting this water temperature criteria, only part of the time, for part of the river, seems less than reasonable protection.</p>	
1239	157	<p>[From ATT3:]</p> <p>[Page:] 19-40</p> <p>Under baseline water temperatures, water temperatures in June are approaching acutely lethal temperatures (76 degrees; Brett et al 1982). That may be why we no longer see many fish migrating out of the tributaries in June. We have essentially truncated the population by killing these late migrants. This serves to reduce the resiliency of the Chinook population. The 50-60% unimpaired flows had significant improvements in the amount of time USEPA smoltification criteria was met on the Stanislaus River. For river management for the benefit of fish and wildlife, this criteria should be met 100% of the time.</p>	<p>Please refer to Master Response 3.1, Fish Protection, regarding use of the EPA temperature criteria and expected benefits from implementation of the plan amendments, including discussions of reductions in harmful and lethal temperatures and of temperature improvements in June. Also refer to Master Response 3.1 regarding justification and description of the plan amendments, specifically see discussion of the Delta Flow Criteria Report. See Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the relationship between the salmon doubling objective and the LSJR flow objectives.</p> <p>As shown in Chapter 7, Aquatic Biological Resources, Table 7-24a, average monthly 7DADM water temperatures for the Stanislaus River are expected to be reduced a little, albeit not substantially, in June in response to implementation of the LSJR flow objectives (LSJR Alternative 3) compared to baseline conditions. As discussed in Master Response 3.1, more meaningful improvements to June water temperatures are expected under the 40 percent unimpaired flow objective in years when the 40 percent unimpaired flow requirement would result in substantially more flow during June (i.e., in wet years). Although the Stanislaus River has historically operated near 40 percent unimpaired flow on average during February through June, it is important note that flows were sometimes managed erratically in February through June during and between years (see Table 2.15 in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives). Having more consistent flow management for fisheries purposes and the ability to adaptively implement the plan amendments to manage for flow and temperature is likely to create temperature benefits during certain years, as shown in the temperature time series in Master Response 3.1.. There are also likely to be synergistic benefits from having additional flow from all three tributaries managed in a comprehensive approach. Refer to Master Response 3.1 for additional discussion of expected temperature benefits during June in the other tributaries and in the SJR.</p> <p>Under the 60 percent unimpaired flow objective (LSJR Alternative 4), average monthly 7DADM water temperatures for the Stanislaus River are expected to be reduced by an additional 1.6°F compared to LSJR Alternative 3, which, as noted by the commenter, is a significant improvement over baseline conditions. However, the modeled maximum 7DADM water temperature exceeded the commenter’s suggested threshold for acutely lethal temperature (76°F) during June under both the 40 percent unimpaired flow and 60 percent unimpaired flow scenarios; thus, even under the 60 percent unimpaired flow objective, the commenter’s suggested acutely lethal temperature threshold (76°F) would not be met 100 percent of the time.</p> <p>Please refer to Master Response 3.1 and to Master Response 2.2, Adaptive Implementation, for discussion of adaptive implementation, which is expected to provide further water temperature benefits.</p>
1239	158	<p>[From ATT3:]</p> <p>[Page:] 19-40</p>	<p>Please refer to Master Response 3.1, Fish Protection, regarding water temperature, predation, and expected benefits to fish from implementation of the plan amendments. Decreases in water temperature in June from baseline conditions are expected to decrease habitat suitability for non-native predators that prefer warm-water conditions; this may decrease non-native predation rates on juvenile salmonids and/or non-native</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>That the lower unimpaired flows (20-30%) do not result in significant improvements to smoltification temperatures in the lower reaches of the river suggests that 20-30% unimpaired flows are too low, since 30-60% unimpaired flows do provide significant improvements to smoltification criteria. Reducing water temperatures in June would serve to extend the period of smolt outmigration and reduce the metabolic needs of predators in the river which may also have longer term benefits if the colder water later in the spring inhibits reproduction of warm-water predators in the river and tributaries.</p>	<p>predator population sizes, which would benefit salmonids.</p>
1239	159	<p>[From ATT3:]</p> <p>[Page:] 19-41</p> <p>Under the 60% unimpaired flow during June, water temperatures are reduced significantly on the Tuolumne River for ¾ of the river. We think this level of reduction in high temperatures is needed to significantly achieve needed benefits for salmon and steelhead during June.</p>	<p>Please refer to Master Response 3.1, Fish Protection, regarding use of the EPA temperature criteria and expected benefits from implementation of the plan amendments, including discussions of reductions in harmful and lethal temperatures and of temperature improvements in June. Refer to Master Response 3.1 regarding justification and description of the plan amendments, and specifically see discussion of the Delta Flow Criteria Report for responses to comments that assert 60 percent unimpaired flow is needed to protect fish. Also refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the relationship between the salmon doubling objective and the LSJR flow objectives.</p> <p>As described in Master Response 3.1, the amount of time water temperatures are reduced in three-fourths of the Tuolumne River each month, such that harmful and lethal juvenile migratory temperatures (Table 3 and Table 4, respectively) are avoided, is significant under both modeled 40 percent unimpaired flow and 60 percent unimpaired flow scenarios compared baseline conditions.</p> <p>Please refer to Master Response 3.1 and to Master Response 2.2, Adaptive Implementation, for discussions of adaptive implementation, which is expected to provide further water temperature benefits.</p>
1239	160	<p>[From ATT3:]</p> <p>[Page:] 19-41</p> <p>The baseline flows for the three tributaries is likely highly inadequate to meet the goal of reasonable protection. It is debatable whether 30-50% unimpaired flows will be sufficient or 60% or higher is needed for improvements in all months, including June.</p>	<p>The proposed project will provide significant improvement to baseline conditions. See Master Response 1.2, Water Quality Control Planning Process, regarding the water quality control planning process and the need for balancing and reasonable protection of all beneficial uses. Also refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the relationship between the salmon doubling objective and the LSJR flow objectives, and refer to Master Response 3.1, Fish Protection, regarding justification for and description of the plan amendments; specifically see discussion of the Delta Flow Criteria Report.</p>
1239	161	<p>[From ATT3:]</p> <p>[Page:] 19-42</p> <p>Not meeting summer rearing temperatures will have ramifications for steelhead. Suggest we prioritize meeting the EPA's temperature recommendations downstream of the dam for all months, so that there is at least some temperature refuge for some steelhead throughout the summer period (June-August).</p>	<p>Please refer to Master Response 3.1, Fish Protection, for discussion of water temperature benefits expected from implementation of the plan amendments, including reduction of harmful and lethal temperatures during June.</p> <p>It is not clear which river the commenter is referring to, as both the Stanislaus and Tuolumne Rivers are discussed on page 19-42 of Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
			<p>As described in Chapter 19, and as discussed in Master Response 3.1, flows in the Stanislaus River historically have been operated near the 40 percent unimpaired flow level; thus, no substantial summer water temperature benefits are expected under the modeled the 40 percent unimpaired flow objective compared to baseline conditions. However, flows were sometimes managed erratically in February through June during and between years (see Table 2.15 in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives). Having more consistent flow management for fisheries purposes and the ability to adaptively manage flow and temperature is likely to create temperature benefits during certain years, as shown in the temperature time series in the Master Response 3.1 discussion of the importance of June (see Figure 18).</p> <p>Substantial improvements in modeled water temperatures for summer rearing are expected in the Tuolumne River under the 40 percent unimpaired flow objective, except just below the dam, where water temperatures already remain cool under baseline conditions.</p> <p>Please refer to Master Response 3.1 and to Master Response 2.2, Adaptive Implementation, for a discussion of adaptive implementation, which is expected to provide further water temperature benefits.</p>
1239	162	<p>[From ATT3:]</p> <p>[Page:] 19-43</p> <p>It is stated that significant temperature benefits occur during March with 60% of unimpaired flow, but 60% unimpaired flows are not recommended. We believe that a higher percentage of unimpaired flows would create more benefits to juvenile salmon survival by reducing water temperatures in the lower San Joaquin River and increase the number of juvenile salmon and steelhead entering the Delta.</p>	<p>Please refer to Master Response 3.1, Fish Protection, regarding reductions in harmful and lethal temperatures. Also refer to Master Response 3.1 regarding justification for and description of the plan amendments; specifically, please see the discussion of the Delta Flow Criteria Report for responses to comments asserting that 60 percent unimpaired flow is needed to protect fish. Refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the relationship between the salmon doubling objective and the LSJR flow objectives.</p> <p>As shown in Table 5 and Table 6 of Master Response 3.1, the frequency of the occurrence of harmful temperatures for migrating juvenile salmonids is reduced under the 40 percent unimpaired flow scenario compared to baseline conditions at locations in the Stanislaus River during April, May, and June.</p>
1239	163	<p>[From ATT3:]</p> <p>[Page:] 19-48</p> <p>It is commendable that the SWRCB recognizes the importance of water temperature to the variability of San Joaquin basin stocks. Where temperature can be decreased during all periods, benefits will accrue for all life-stages. We recommended the highest levels of unimpaired flows such that water temperatures can be decreased and production improved in the San Joaquin basin as well as contributing to the resiliency of the portfolio of salmon stocks in the Central Valley.</p>	<p>Please refer to Master Response 3.1, Fish Protection, regarding expected benefits from implementation of the plan amendments, including reductions in harmful and lethal water temperature. See the discussion of the Delta Flow Criteria Report for responses to comments that assert 60 percent unimpaired flow is needed to protect fish. Refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the relationship between the salmon doubling objective and the LSJR flow objectives.</p> <p>Also refer to Master Response 3.1 regarding justification for and description of the plan amendments, and regarding year-round flows, as well as use of flow shaping and flow shifting to achieve additional benefits. Please see Master Response 2.2, Adaptive Implementation, regarding adaptive implementation of the plan amendments.</p>
1239	164	<p>[From ATT3:]</p> <p>[Page:] 19-50</p>	<p>The data presented in Figure 19-7 are average daily temperatures, as stated in the caption.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>It appears that Figure 19-7 is average daily water temperatures, but it does not state that explicitly in the legend.</p>	
1239	165	<p>[From ATT3:]</p> <p>[Page:] 19-52</p> <p>[Subject:] Figure 19-9</p> <p>Suggest altering the x-axis to reflect actual dates (e.g., months) instead of day number for the year. It's work for the reader to convert the day numbers into dates, and it's more easily interpreted using dates.</p>	<p>The figure is intended to illustrate the alteration of optimal temperature spawning windows for fall-run Chinook salmon under baseline conditions. The figure adequately illustrates this delay with circles, arrows, and dates. As such, no change has been made. Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
1239	166	<p>[From ATT3:]</p> <p>[Page:] 19-54</p> <p>Constructing lower-elevation floodplains may create habitat for warm-water predators, depending on the water temperature on the floodplains and whether it is inundated year-round or only during the spring.</p>	<p>Please refer to Master Response 3.1, Fish Protection, regarding predation, floodplains, and benefit of flows through May and June. Also see Master Response 5.2, Incorporation of Non-Flow Measures, and Appendix K, Revised Water Quality Control Plan, regarding the role of non-flow measures, including predator reduction. Also refer to Chapter 7, Aquatic Biological Resources, AQUA-10, regarding expected reductions in predation risk of Chinook salmon and steelhead.</p> <p>The proposed adaptive implementation approach (see Master Response 2.2 and Appendix K) allows for flexibility in how flows are managed. The plan amendments do not mandate extended floodplain inundation. The STM working group may determine that fluctuating flows to disrupt spawning events of non-native predatory fish is beneficial to native fish species. It is envisioned that real time information will inform these types of decisions.</p> <p>As discussed in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, the effectiveness of restoring the natural flow regime was demonstrated by Kiernan et al. (2012) in lower Putah Creek. Monitoring of several sites pre- and post- implementation of the new flow regime showed a change in the distribution of the native fish community. At the onset of the study, native fishes were constrained to habitat immediately (<1 km) below the diversion dam, and non-native species were numerically dominant at all downstream sample sites. Following implementation of the new flow regime, native fish populations expanded and regained dominance across more than 20 km of lower Putah Creek. The authors (Kiernan et al. 20012) proposed that that the expansion of native fishes was facilitated by creation of favorable spawning and rearing conditions (e.g., elevated springtime flows), cooler water temperatures, maintenance of lotic (flowing) conditions over the length of the creek, and displacement of alien species by naturally occurring high-discharge events.</p> <p>As discussed in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, numerous studies have reported that the primary limiting factor for tributary abundances of Chinook salmon are reduced spring flow, and that populations on the tributaries are highly correlated with tributary, Vernalis, and Delta flows (Kjelson et al. 1981; Kjelson and Brandes 1989; USFWS 1995; Baker and Mohardt 2001; Brandes and McLain 2001; Mesick 2001b; Mesick and Marston 2007; Mesick 2009; Mesick 2010 a-d). In addition, more recent studies (e.g., Sturrock et al. 2015; State Water Board 2017; TID and MID 2013, USFWS 2014; Zueg et al. 2014) continue to provide evidence of the importance of suitable flow and related habitat conditions during the spring time period for native fish. On the Stanislaus River for example, USFWS (2014) found a significant relationship between juvenile salmon survival and floodplain acre-days, with floodplain acre-days explaining 77 percent of the year to year</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
			variation in juvenile salmon survival.
1239	167	<p>[From ATT3:]</p> <p>[Page:] 19-69</p> <p>[Subject:] Tuolumne River Floodplain Evaluation Results; 20-60% Unimpaired Flow</p> <p>February and March are critical rearing time periods for fall-run Chinook salmon on the Tuolumne River. Typically, juveniles begin outmigrating in April/May.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p> <p>Please refer to Master Response 3.1, Fish Protection, regarding expected benefits of increased floodplain inundation during the February through June period with implementation of the plan amendments. In addition to providing expanded rearing habitat and access to productive habitats, increased floodplain inundation also can provide reduced predation risk and energy expenditures associated with increased access to shallow, low velocity areas and cover; thus, benefiting both rearing and outmigrating juveniles. Additionally, as discussed in Master Response 3.1, higher flow and the related habitat benefits during the February through June time period have a strong influence on juvenile survival and life history diversity, which are both important for population health. Expression and protection of a diverse set of life history strategies are important to preserving and improving population viability.</p>
1239	168	<p>[From ATT3:]</p> <p>[Page:] 19-69</p> <p>How are the results of the baseline on floodplain inundation affected by the VAMP flows in April and May, and by the holding back of flows in the reservoirs in the earlier months for later use for irrigation?</p>	<p>Please refer to Chapter 4, Introduction to Analysis, regarding a description of the baseline. Also refer to Appendix D, Evaluation of the No Project Alternative (LSJR Alternative 1 and SDWQ Alternative 1), regarding the assumptions for baseline, and for a description of baseline results in context of comparisons with LSJR Alternative 1 and SDWQ Alternative 1. Refer to Master Response 2.5, Baseline and No Project, for additional information regarding baseline.</p>
1239	169	<p>[From ATT3:]</p> <p>[Page:] 19-69</p> <p>How would climate change in the future affect the predictions of floodplain inundation in the future? Would it cause less inundation or more?</p>	<p>Please see Chapter 14, Energy and Greenhouse Gases, for an analysis of the effect of climate change on LSJR Alternatives 2, 3, and 4 (Impact EG-5). Climate change would not significantly affect LSJR Alternatives 2, 3, and 4 because adaptive implementation would afford agencies with the flexibility to respond to changing circumstances: the adaptive implementation process (see Master Response 2.2, Adaptive Implementation) will allow the fine-tuning of flows to achieve desired floodplain timing, magnitude, and duration. Furthermore, the required review and update of the Water Quality Control Plan (see Appendix K, Revised Water Quality Control Plan) continually accounts for changing conditions related to water quality and water planning such as in response to climate change. Please also see Master Response 3.2, Surface Water Analyses and Modeling, for information regarding climate change.</p>
1239	170	<p>[From ATT3:]</p> <p>[Page:] 19-69</p> <p>[Subject:] Whole Page</p> <p>There doesn't seem to be any discussion of minimum depth of inundation or minimum duration of inundation. Aren't there minimums before inundation can be considered beneficial? There doesn't seem to be any attempt to relate the minimum inundation requirements to monthly data.</p>	<p>Please see Master Response 3.1, Fish Protection, which addresses concerns regarding the appropriateness of using floodplain inundation area (wetted area) as a measure of floodplain habitat, including a discussion of the relationship between inundation area and suitable habitat for juvenile salmonids and other native fishes.</p>
1239	171	<p>[From ATT3:]</p>	<p>Refer to response to comment 1239-167. See Master Response 3.1, Fish Protection, regarding expected benefits from increased floodplain inundation and seasonal flows, including discussion of benefits from</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Page:] 19-69</p> <p>Floodplain inundation is likely to affect fry more than smolts, but under the proposed scenarios, it seems like there is a mismatch between the proposed action and the potential benefits.</p>	<p>implementation of the plan amendments during the February through June timeframe.</p>
1239	172	<p>[From ATT3:]</p> <p>[Page:] 19-70</p> <p>It appears that flows of greater than 4,000 cfs are a threshold for floodplain inundation for the mainstem San Joaquin River for reaches 1 and 2. Unfortunately they don't occur very often. Higher flows are needed downstream, with substantial benefits above 7,000 cfs, which also don't occur very often.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
1239	173	<p>[From ATT3:]</p> <p>[Page:] 19-70</p> <p>Increasing flows to 7,000 cfs in April and May of more years would allow the installation and operation of the head of Old River barrier (can't be operated at flows greater than 7,000 cfs) and increase salmon smolt survival from Mossdale to Jersey Point.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
1239	174	<p>[From ATT3:]</p> <p>[Page:] 19-70</p> <p>Reach numbers for the San Joaquin River are in conflict with the SJRRP reach numbers and this should be rectified during coordination with SJRRP.</p>	<p>The commenter does not provide adequate information with regard to the data that were produced for the San Joaquin River Restoration Program (SJRRP). Furthermore, the SJRRP is a separate project with a different plan area.</p> <p>The purpose of the SED is to disclose potential impacts and measureable benefits from the plan amendments using the best science available. In the SED, Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, data from cbec, inc. (2010) are used to characterize the relationship between floodplain inundation and flow. Please see Master Response 3.1, Fish Protection, regarding the use of the best available science, and the adequacy of the floodplain analysis.</p> <p>No changes were made in the SED because the suggested changes would not affect the results of the impact evaluations. Please refer to Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
1239	175	<p>[From ATT3:]</p> <p>[Page:] 19-71 - 19-73</p>	<p>Please refer to Master Response 3.1, Fish Protection, regarding adequacy of the modeling to support the analyses, and specifically see the discussion of the appropriateness of using modeled monthly flows as a basis for the floodplain habitat analysis.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Subject:] Entire Section</p> <p>The monthly time step of the hydrologic modeling misrepresents how many acre-days of beneficial floodplain inundation a tributary experiences under a particular scenario alternative. The term acre-month is more accurate, given the monthly WSE. Further, the level of inaccuracy (of using monthly average flows as an indicator of days of inundation) may be significantly different for each alternative which vexes the old modeling qualification that the results are valid for comparative analyses.</p>	<p>Also refer to Master Response 3.2, Surface Water Analyses and Modeling, regarding methodology of the hydrologic modeling.</p>
1239	176	<p>[From ATT3:]</p> <p>[Page:] 19-78</p> <p>It would be good to predict 2004-2016 data and compare it to model runs.</p>	<p>Please refer to Master Response 2.3, Presentation of Data and Results in SED and Response to Comments, regarding data usage in the SED, and refer to Master Response 3.1, Fish Protection, regarding the data period used in the SalSim modeling and interpretation of results. Please also see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
1239	177	<p>[From ATT3:]</p> <p>[Page:] 19-86</p> <p>It should be clear how flows would be shifted, how monitoring would be conducted and how decisions would be made relative to determining success.</p>	<p>Refer to Master Response 1.1, General Comments, and to Master Response 1.2, Water Quality Control Planning Process, regarding the State Water Board authorities and the program of implementation. Also see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments asserting that the project description is incomplete, vague, or unclear.</p> <p>Please refer to Master Response 3.1, Fish Protection, regarding the SalSim modeling, including the discussion of the use of the model to inform flow shifting paradigms. See Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, Section 19.4.1, Introduction of SalSim, specifically under “Model Use Advisory Issued by the Developers,” for a discussion of the application and limitations of the SalSim model. See Section 19.4.2, Methods of State Water Board SalSim Evaluation, under “(2) Flow Modeling Modifications for the Purposes of SalSim” for discussion of the model methodology concerning flow shifting. See Section 19.4.4, Summary and Conclusions of the SalSim Evaluation, for further discussion of the limitations of the SalSim model.</p> <p>Also see Master Response 3.1 regarding adaptive implementation, making adjustments, and addressing uncertainty. Refer to Master Response 3.2, Surface Water Analyses and Modeling, regarding adaptive implementation and flow shifting in the hydrologic modeling. See Master Response 2.2, Adaptive Implementation, for descriptions and examples of flow shaping (i.e., within the February through June time period and flow shifting outside the February through June time period).</p>
1239	178	<p>[From ATT3:]</p> <p>[Page:] 19-86</p> <p>An important component of restoring native fishes is having high-discharge events (i.e., greater than the 40% UF). Flow variability is an important component of native fish ecology</p>	<p>Please refer to Master Response 3.1, Fish Protection, regarding justification and description of the plan amendments for protecting fish, including discussion of the unimpaired flow approach and adaptive implementation of the plan amendments. Also see Master Response 2.1, Amendments to the Water Quality Control Plan, Master Response 2.2, Adaptive Implementation, and Master Response 5.2, Incorporation of Non-Flow Measures, for clarification regarding how the plan amendments are designed to achieve the biological benefits discussed in the SED.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		and should be prioritized.	
1239	179	<p>[From ATT3:]</p> <p>[Page:] C 2-26</p> <p>[Subject:] Appendix C</p> <p>The pattern of reduced spring flows and increased flows during the late summer and fall (generally August to November), has resulted in less variability in flow during the year. Without incorporating flow standards for the whole year, this pattern may not change.</p>	<p>Please see response to commenter’s previous comments regarding year-round flow (such as comment 1239-143). Refer to Master Response 3.1, Fish Protection, regarding response to comments asserting the need for year-round flows. Also refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding using a year-round flow schedule.</p>
1239	180	<p>[From ATT3:]</p> <p>[Page:] C 2-27</p> <p>[Subject:] Appendix C</p> <p>How is the increase in unimpaired flow due to the DMC going to be incorporated?</p>	<p>Flow from DMC imports are not part of the unimpaired flow calculations for the Stanislaus, Tuolumne, and Merced Rivers. For more information on the calculation of the unimpaired flow, please see Master Response 3.2, Surface Water Analyses and Modeling del.</p>
1239	181	<p>[From ATT3:]</p> <p>[Page:] C 2-31</p> <p>[Subject:] Table 2-16</p> <p>This table shows how flows are actually increased over unimpaired in August-October, which will have and has had ecosystem effects downstream by providing habitat to warm-water predators in the system. The same effect would occur on the other tributaries as well.</p>	<p>Please see responses to comments 1239-145 and 1239-146 regarding year-round flows.</p>
1239	182	<p>[From ATT3:]</p> <p>[Page:] C 2-42</p> <p>[Subject:] Figure 2.13</p> <p>This graph illustrates how the spring flow, which salmon have evolved to, has radically been changed and is shown when comparing unimpaired flows to the observed flows in the SJR at Friant.</p>	<p>Implementation of the plan amendments would increase flow in the months that have been most impaired, which would benefit native fish. Please see Master Response 3.1, Fish Protection, and Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, regarding the importance of the natural flow regime and the benefits expected.</p>
1239	183	<p>[From ATT3:]</p> <p>[Page:] C 2 -51</p> <p>[Subject:] Table 2.32</p>	<p>Negative unimpaired or observed flows represented in Table 2.32 indicate that flow was close to zero. Negative values occur when there are inaccuracies (usually small) in the numbers used for the calculations. For example, this may occur when inflow to a reservoir is calculated as reservoir outflow plus estimated reservoir evaporation minus reduction in storage. In this case, if the reduction in storage were greater than</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		How do you obtain a negative unimpaired flow? Please clarify.	the outflow plus the evaporation, the estimated inflow would be negative.
1239	184	<p>[From ATT3:]</p> <p>[Page:] C 2-52</p> <p>[Subject:] 2.5.1</p> <p>The spring HOR barrier is also installed in some years--2012, 2014, 2015 and 2016, as well as previous years 1992, 1994, 1996, 1997, 2000-2004, 2007.</p>	The change the commenter is requesting to be made within the SED is unclear from the comment. However, in Chapter 16, Evaluation of Other Indirect and Additional Actions, Section 16.4.5, South Delta Temporary Barriers, there is a description of when the HOR barrier has been installed and it notes the schedule under which it was most recently installed in 2015 (Table 16-13, Temporary Barrier 2015 Schedule).
1239	185	<p>[From ATT3:]</p> <p>[Page:] C 2-56</p> <p>[Subject:] 2.6</p> <p>The greatest reduction in unimpaired flows at Vernalis has occurred during peak spring snowmelt months of April, May and June, with a median of 25%, 17% and 18% of unimpaired flow respectively. While increasing this proportion to 30-50% will have some potential incremental benefits, we should strive to meet the total needs of the species (~60% based on staff report), to get benefits to meet the doubling and recovery goals for salmonids in the San Joaquin basin. Similar reductions have occurred in each tributary during these months, and have negatively affected the production of salmonids for decades.</p>	The plan amendments are meant to address the impairments described in this comment. Please refer to Master Response 3.1, Fish Protection, regarding the Delta Flow Criteria Report and how the plan amendments relate to the 60 percent unimpaired flow recommendation of the Delta Flow Criteria Report. Refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the relationship between the salmon doubling objective and the LSJR flow objectives. See Master Response 1.2, Water Quality Control Planning Process, regarding to the water quality control planning process and the need for balancing and reasonable protection of all beneficial uses.
1239	186	<p>[From ATT3:]</p> <p>[Page:] C 3-2</p> <p>[Subject:] 3.1.2</p> <p>Salmonids need a more natural flow regime during the whole year, not just February-June period, because what happens the rest of the year, will impact salmonids between the February-June period. Perhaps a maximum of unimpaired flows for other times of year might be warranted to maintain the pattern of flows throughout the year that the fish have evolved to.</p>	Please see response to comment 1239-143 regarding year-round flows and responses to commenters' suggested modifications to the plan amendments.
1239	187	<p>[From ATT3:]</p> <p>[Page:] C 3-3</p> <p>[Subject:] 2nd paragraph, 2nd line</p>	Please refer to Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>This statement is not accurate. §3406(a)(2) states that "fish and wildlife mitigation, protection and restoration" shall have the same priority as "domestic use" and that "fish and wildlife enhancement" shall have the same priority as "power."</p>	
1239	188	<p>[From ATT3:]</p> <p>[Page:] C 3-4</p> <p>[Subject:] Table 3.1 footnote **, 2nd sentence</p> <p>The meaning of this sentence is not clear. The banked water is added to the (b)(2) allocation in the subsequent year.</p>	<p>The footnote of Table 3.1 in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, has been revised per the commenter's suggested edit.</p>
1239	189	<p>[From ATT3:]</p> <p>[Page:] C 3-5</p> <p>[Subject:] Paragraphs 3&4</p> <p>These should be written in the past tense like the preceding paragraph.</p>	<p>The State Water Board strived to meet high standards of technical writing and made editorial corrections to the Final SED where appropriate. Many commenters provided editorial suggestions that were considered a matter of preference but were not necessary and would not change the analyses or conclusions contained in the SED.</p>
1239	190	<p>[From ATT3:]</p> <p>[Page:] C 3-8</p> <p>[Subject:] Last paragraph</p> <p>The Interim Plan of Operations that contained the ensuing two tables was signed in May 1997 to govern allocations in WY 97 and WY98. This paragraph makes it sound like the 1987 Agreement and the 1997 IPO are one and the same.</p>	<p>The text in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, Section 3.1.3, Existing Flow Requirements, for the Stanislaus River has been revised for clarity.</p>
1239	191	<p>[From ATT3:]</p> <p>[Page:] C 3-9</p> <p>[Subject:] Last paragraph</p> <p>Since the ensuing chart was mistakenly included in the RPA and does not reflect the minimum flow of 800 cfs in AN years required by the RPA in its Appendix 2E, it should be revised or deleted.</p>	<p>The data in Figure 3.1 does not reflect the minimum flow of 800 cfs as identified in NMFS Appendix 2E. However, no changes have been made to Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, Section 3, Scientific Basis for Developing Alternative San Joaquin River Flow Objectives, because modifications to this section would not alter the analyses or conclusions of the SED.</p>
1239	192	<p>[From ATT3:]</p> <p>[Page:] C 3-23</p>	<p>Figure 3.6, shows natural escapement (defined in Greene [2009] as all fish returning to spawn in natural areas of both natural and hatchery origin) and hatchery escapement (defined in Greene [2009] as all fish returning to hatcheries of both natural and hatchery origin). Greene (2009) does state that "Available data indicate that hatchery-produced fish constitute a majority of the natural fall-run Chinook spawners in the</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Subject:] Figure 3-6</p> <p>This figure is misleading as it defines natural as fish left to spawn in the river (regardless of origin) and hatchery as those fish taken in to the hatchery to be spawned (again, regardless of natal origin). This results in a mischaracterization of hatchery effects from a genetic standpoint as readers incorrectly assume that natural fish originated from a natural spawning event in the river.</p>	<p>Central Valley (PFMC 2007).". No changes have been made to Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, Section 3, Scientific Basis for Developing Alternative San Joaquin River Flow Objectives, because modifications to this section would not alter the analyses or conclusions of the SED. Please also refer to Master Response 3.1, Fish Protection, regarding the acknowledgement of the role of hatcheries, and their effects on natural populations.</p>
1239	193	<p>[From ATT3:]</p> <p>[Page:] C- 3-23</p> <p>I believe there is an error in the statement that 100% of the Merced River Hatchery fish were marked through the VAMP study. VAMP didn't use all of the production at Merced, and the proportion tagged has varied over time.</p>	<p>The change would not fundamentally change the public's ability to review and understand the information presented, nor would it result in a change to the analysis or conclusions, therefore, no change has been made. Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
1239	194	<p>[From ATT3:]</p> <p>[Page:] C 3-24</p> <p>[Subject:] Monitoring Programs</p> <p>The list is missing the weir counts, otolith study, survival study, snorkel surveys, redd surveys, habitat studies from various entities, especially the irrigation districts, and fails to note that much of this data is not made readily available from the data collection organization.</p>	<p>The list referred to by the commenter is specific to SJR Basin Monitoring Programs and is not intended to be exhaustive, but rather to provide examples of the major programs for the SJR Basin as a whole. The incorporation of additional monitoring programs into this list would not change the analysis or conclusions that are presented in the SED. Therefore, no change has been made to the SED.</p>
1239	195	<p>[From ATT3:]</p> <p>[Page:] C-3-29</p> <p>[Subject:] 3.5</p> <p>The Mossdale trawl between April and June is conducted by DFW, previously DFG, not the USFWS. USFWS conducts it between July and March. The document also has the wrong Figure reference (it should be Figure 3.3 not 3.2).</p>	<p>The text of Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, Section 3.5, Functions Supported by Spring Flows, has been revised according to the commenter's suggestion.</p>
1239	196	<p>[From ATT3:]</p> <p>[Page:] C 3-39</p> <p>Total Delta survival in 2009 could not be measured given that receivers were not deployed at Jersey Point and Chippis Island. The Old River route and SJ route measured in 2009 did not</p>	<p>This information is presented in the referenced section (Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, Section 3.6.3, Acoustic Tracking Studies (2008-2011)).</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		go completely to Chipps Island and is not comparable to other years.	
1239	197	<p>[From ATT3:]</p> <p>[Page:] C 3-48</p> <p>Returning the temperature regime back to that which would occur without the dam in the spring seems to be imperative for meeting salmonid production targets, in addition to the flow objectives.</p>	<p>Please refer to Master Response 3.1, Fish Protection, regarding justification for and description of the plan amendments for protecting fish, including discussion of the unimpaired flow approach and adaptive implementation of the plan amendments. Also see Master Response 2.1, Amendments to the Water Quality Control Plan, Master Response 2.2, Adaptive Implementation, and Master Response 5.2, Incorporation of Non-Flow Measures, for clarification regarding how the plan amendments are designed to achieve the biological benefits discussed in the SED.</p>
1239	198	<p>[From ATT3:]</p> <p>[Page:] C- 3-48</p> <p>Water temperatures of over 20 degrees C would be too high for optimal survival and would be considered stressful (USFWS Exhibit 31 1987).</p>	<p>Please see Master Response 3.1, Fish Protection, regarding reductions in exposure of salmonids to harmful (20°C) and lethal water temperatures (25°C) in response to implementation of the plan amendments.</p>
1239	199	<p>[From ATT3:]</p> <p>[Page:] C 3-54</p> <p>[Subject:] 3.8.2</p> <p>These tables appear to come from the AFRP/CVPIA working paper (need to verify), but the exact reference isn't provided. If so, they are state-of-the-art from over 20 years ago, and perhaps have less relevance than more recent analyses with better data sets.</p>	<p>Please see Master Response 3.1, Fish Protection, regarding the use of the best available science.</p>
1239	200	<p>[From ATT3:]</p> <p>[Page:] C 3-59</p> <p>"However, the draft program of implementation states that the State Water Board will reevaluate the implementation of the October pulse flow and flows during other times of the year after monitoring and special studies during the water rights and FERC processes have been conducted to determine what, if any, changes should be made to these flow requirements and their implementation to achieve the narrative San Joaquin River flow objective." Addressing this issue should not be put off until later as decisions made within the proposed spring timeframe will ultimately impact year-round conditions and management options.</p>	<p>Please refer to Master Response 1.2, Water Quality Control Planning Process, and Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the water quality control planning process. See Master Response 3.1, Fish Protection, and Master Response 2.1 regarding the importance of the February through June time period and other times of the year.</p>
1239	201	<p>[From ATT3:]</p> <p>[Page:] D-6</p>	<p>The text has been revised per the comment. This modification does not change conclusions identified in the SED.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Subject:] Third line from bottom of page</p> <p>SJRA 110 TAF cap only applies to the pulse flow (VAMP) period. USBR was the party assigned responsibility for meeting Vernalis flow requirements for the rest of Feb-Jun. I don't believe the Board placed a cap on that non-pulse period responsibility, unless with a TUCP Order.</p>	
1239	202	<p>[From ATT3:]</p> <p>[Page:] D-8</p> <p>[Subject:] Line 8</p> <p>"(Forecasted)" is very ambiguous. It should be made clear what is done in actuality and what is done/assumed in the model, e.g., 90% exceedance forecast vs perfect foresight.</p>	<p>Please refer to Appendix F.1, Hydrologic and Water Quality Modeling, for detailed information regarding the assumptions used in the Water Supply Effects spreadsheet model.</p>
1239	203	<p>[From ATT3:]</p> <p>[Page:] D-8</p> <p>[Subject:] Footnote 4</p> <p>Isn't the flow objective tied to where X2 is required to be, not where X2 is? Is the "end-of-month" qualifier new or is it a modeling convenience?</p>	<p>The text has been revised per the comment. This modification does not change conclusions identified in the SED. Please refer to Appendix F.1, Hydrologic and Water Quality Modeling, for detailed information regarding the assumptions used in the Water Supply Effects spreadsheet model.</p>
1239	204	<p>[From ATT3:]</p> <p>[Page:] D-9</p> <p>[Subject:] Third line</p> <p>Isn't the pulse flow 31 days in duration?</p>	<p>The text has been revised per the comment. This modification does not change conclusions identified in the SED.</p>
1239	205	<p>[From ATT3:]</p> <p>[Page:] D-9</p> <p>[Subject:] Table D-2</p> <p>Which set of values is used when X2 is required to be AT Chipps?</p>	<p>The text has been revised per the comment. This modification does not change conclusions identified in the SED.</p>
1239	206	<p>[From ATT3:]</p> <p>[Page:] D18-D2</p>	<p>The in-text discussion associated with Figures D-2 through D-5 uses impacts from other alternatives as a comparative reference for the evaluation of the No Project Alternative; therefore, inclusion of the lines for LSJR Alternatives 2, 3, and 4 are appropriate. The information currently provided in the figures supports the</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Subject:] Figures D-2 through D-5</p> <p>This appendix is supposedly only looking at Baseline vs No-Project. Suggest deleting lines for Alt 2, 3, 4 as these are presumably shown elsewhere. Suggest adding storage at the end of May as an indicator of temperature control.</p>	<p>description of the No Project Alternative and the types of water supply and reservoir effects that could occur. In general, storage in May is not low enough and temperatures in the lower portion of the reservoirs have not warmed enough to result in reservoir storage being an important determining factor in water temperature at this time. Water temperature is simulated for the entire year, however, in the SED. No further response required.</p>
1239	207	<p>[From ATT3:]</p> <p>[Page:] Appendix D</p> <p>[Subject:] General</p> <p>Suggest adding a collection of time series plots (10 years each?) showing a comparison of flows at Vernalis with values for pulse and non-pulse flows superimposed on the plots for Aprils and Mays.</p>	<p>The information currently provided in the figures in Appendix D, Evaluation of the No Project Alternative (LSJR Alternative 1 and SDWQ Alternative 1), supports the description of the No Project Alternative and the types of water supply and reservoir effects that could occur. Table D-3 provides information regarding the difference between baseline and No Project regarding the volume of water needed to meet the Vernalis flow objectives. The total amount of additional water needed for the No Project alternative is the cause of most of the impacts, not just April and May. No further response required.</p>
1239	208	<p>From ATT3:]</p> <p>[Page:] F.1-14</p> <p>[Subject:] Table F.1.2-4</p> <p>The table's title ought to be modified to reflect [that] the pairing of the NMFS BO flow regimes with the NMI levels in the table was not in the BO, but rather an after-the-fact agreement on implementation with USBR.</p>	<p>The commenters suggestion is acknowledged, however it would not fundamentally change the public's ability to review and understand the information presented, nor would it result in a change to the analysis or conclusions, therefore, no change has been made.</p>
1239	209	<p>[From ATT3:]</p> <p>[Page:] F.1-191</p> <p>[Subject:] End of first full paragraph</p> <p>How were the monthly WSE flows disaggregated to daily HEC-5/5Q values for the baseline? How were transitions from one month to the next handled?</p>	<p>The CALSIMII_5Q.exe file from Don Smith at RMA, Inc., the author of the SJR HEC5Q Model, was used to convert monthly to daily flows and smooth the transition between WSE monthly flow values for streamflow and reservoir storage, as part of the standard process to transfer WSE results to the temperature model. Please refer to Master Response 3.2, Surface Water Analyses and Modeling, for information regarding model implementation of percent of unimpaired flow objectives and the San Joaquin River basin-wide water temperature model.</p>
1239	210	<p>[From ATT3:]</p> <p>[Page:] F.1-200</p> <p>[Subject:] First sentence</p> <p>These monthly average temperatures were ostensibly averages of daily temperature or 6-hr. temperatures. What daily flows were used in the HEC-5/5Q model to compute the</p>	<p>As described in the temperature model methods of Appendix F.1, Hydrologic and Water Quality Modeling, the monthly flow output from the WSE model was run through the June 2013 CALSIM to HEC-5Q temperature model pre-processor to: 1) to allow the temperature model to perform a long-term simulation compatible with the period used in CALSIM II, and 2) disaggregate monthly output to daily values used in the temperature model. Please refer to Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, in the section about methods of temperature evaluation, and Master Response 3.1, Fish Protection, for information about the adequacy of modeling to support the analyses, with a specific emphasis on the section regarding temperature.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		daily/6-hr. temperatures? Where is that flow data available?	
1239	211	<p>[From ATT3:]</p> <p>[Page:] F.1-203, F.1-210, F.1-217</p> <p>[Subject:] Figure F.1.6-5A, Figure F.1.6-6a, Figure F.1.6-7a</p> <p>These figures are great except that it is not clear whether the storage is Carryover (End-of-Sept) Storage or Beginning-of-Month storage or End-of-Month Storage. Please label the x-axes more completely to eliminate this uncertainty.</p>	<p>As stated in Appendix F.1, Hydrologic and Water Quality Modeling, Section F.1.6.2, Temperature Model Results, Figure F.1.6-5a shows the simulated monthly average Stanislaus River temperatures below New Melones Reservoir and below Goodwin Dam between September and December for 1970–2003; Figure F.1.6-6a shows the simulated monthly average Tuolumne River temperatures below New Don Pedro Dam and below La Grange Dam between September and December for 1970–2003; and Figure F.1.6-7a shows the simulated monthly average Merced River temperatures at Lake McClure and below Crocker-Huffman Dam between September and December for 1970–2003. The x-axes of the three figures are correctly labeled, as they represent the storage for each month between September and December. The three figures also have legends to denote which data points belong to which month. Therefore, no changes to the labels of the x-axes are needed.</p>
1239	212	<p>[From ATT3:]</p> <p>[Page:] F.1-221</p> <p>How were the Feb-Jun monthly WSE flows disaggregated to daily HEC-5/5Q values for the LSJR Alternatives? Was a 7-day running average of daily unimpaired flow pattern used? If so, how were transitions from one month to the next handled?</p>	<p>Monthly WSE results for stream flow and reservoir storage under each of the LSJR alternatives and baseline were used as inputs for the temperature analysis in HEC-5Q which has a sub-daily time step (6 hr). In order to convert monthly flows and reservoir conditions to daily values, a conversion tool was developed by Don Smith at RMA Associates for the use of CALSIM monthly flows. This “CALSIM II to 5Q pre-processor” interpolates to smooth the discontinuity between monthly reservoir values and rectifies any potential issues in the mass balance calculation. This is documented in “San Joaquin River Basin-Wide Water Temperature and EC Model, Appendix D. CALSIM II Preprocessor for HEC-5Q Input.” (CDFW 2013).</p>
1239	213	<p>[From ATT3:]</p> <p>[Page:] F.1-222</p> <p>[Subject:] Second paragraph</p> <p>These monthly average temperatures were ostensibly averages of daily temperature or 6-hr. temperatures. What daily flows were used in the HEC-5/5Q model to compute the daily/6-hr. temperatures? Where is that flow data available?</p>	<p>Daily flows are generated by applying the WSE model results for the entire month as cubic feet per second.</p>
1239	214	<p>[From ATT3:]</p> <p>[Page:] F.1-226</p> <p>[Subject:] Table F.1.6-2a</p> <p>Are the exceedance data based on daily data, e.g., 34 yrs. * 31 days = 1054 values for Oct, or are the exceedance data based on monthly average data, e.g., 34 values for Oct (and other months)? Please clarify this for this table and all similar tables.</p>	<p>The tables in Appendix F.1, Hydrologic and Water Quality Modeling, that show the monthly cumulative distributions of average simulated water temperatures in the rivers, including Table F.1.6-2a, are calculated from the 34 years of daily data.</p>
1239	215	<p>[From ATT3:]</p> <p>[Page:] F.1-228</p>	<p>The storage and flow charts are from the WSE model time-series, and thus monthly. The presentation of the commenter requested information would not fundamentally change the public’s ability to review and understand the information presented, nor would it result in a change to the analysis or conclusions, therefore, no change has been made.</p>

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		The top two charts say "Daily" but there does not appear to be ~30 points plotted for each month. Please explain why for these charts and all similar charts.	
1239	216	[From ATT3:] [Page:] F.1-233-F.1-244 These are very interesting results. Great job! They would be even greater if the discharge(s) for each of the scenarios were displayed.	Monthly discharge from the reservoirs is available in Appendix F.1 Attachment 1, Water Supply Effects Model Output, and from the WSE Model Results that can be downloaded here: https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2016_sed/index.shtml
1239	217	[From ATT3:] [Page:] K-13 It seems odd that water quality objectives would include protection of downstream agricultural operations from upstream agricultural drainage in the Delta.	Please see Master Response 1.1, General Comments, for responses to comments that do not raise significant environmental issues or make a general comment regarding the plan amendments. Please also see Master Response 2.1, Amendments to the Water Quality Control Plan, for a description of the plan amendments and their purposes and needs. Please see Master Response 3.3, Southern Delta Water Quality, for a justification of the amendments to the SDWQ objective.
1239	218	[From ATT3:] [Page:] K-13 Why doesn't the beneficial use include water temperature standards? There is ample evidence to support flow thresholds at Vernalis based on the information in Appendix C.	Please see Appendix K for a description of beneficial uses and the distinction between beneficial uses and water quality objectives. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding commenters' suggested modifications to the plan amendments. Refer to the discussion of biological goals and other types of water quality objectives. Please see Master Response 3.1, Fish Protection, for information regarding the ecological benefits of February through June LSJR flow objectives.
1239	219	[From ATT3:] [Page:] K-13 More explanation on how the subjective determination of the reasonable needs of all the consumptive and non-consumptive demands was determined.	Please refer to Master Response 1.2, Water Quality Control Planning Process, regarding the consideration of beneficial uses. Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the general approach to the modeling of water supply and the water balance modeling used to analyze potential effects in the SED. Please refer to Appendix F.1, Hydrologic and Water Quality Modeling, and Chapter 5, Surface Hydrology and Water Quality, regarding the calculation of demand.
1239	220	[From ATT3:] [Page:] K-13 Based on analyses in Appendix C, SJR basin fall-run salmon has a high risk of extinction (a 20% chance of going extinct in 200 years under present conditions). That would suggest much more improvement is needed and what has been in the past is not reasonable.	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.
1239	221	[From ATT3:]	The Pelagic Organism Decline (POD) text referenced by the comment is located in Appendix K, Revised Water Quality Control Plan, Chapter III. Water Quality Objectives, Section C. Water Quality Objectives for

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
		<p>[Page:] K-13</p> <p>Perhaps the reference to the POD studies needs to be updated since it is crossed it out in earlier sections.</p>	<p>Fish and Wildlife Beneficial Uses. This text does not need to be updated because it refers to POD studies described in the proposed revised text in Appendix K, Chapter I. Introduction, Section D. Key Issues and Plan Updates, Subsection 1. Ecosystem Regime Shift.</p>
1239	222	<p>[From ATT3:]</p> <p>[Page:] K-17</p> <p>Perhaps a DO requirement of no less than 6.0 be required throughout the year, and not just between Sept-Nov.</p>	<p>Amendments to the dissolved oxygen objective were not proposed as part of the plan amendments and comments regarding the dissolved oxygen objective are beyond the scope of the plan amendments. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding commenters' suggested modifications to the plan amendments, including the section discussing modifications to the plan amendments and suggested modifications that were not made. Refer to the discussion of biological goals and other types of water quality objectives.</p>
1239	223	<p>[From ATT3:]</p> <p>[Page:] K-17</p> <p>[Subject:] Table 3</p> <p>Salmonids can be found in the Lower San Joaquin River during both the upmigration (adult) period and outmigration (juvenile) period, but the standard for Dissolved Oxygen is only applicable during a subset of the adult migration window. Also, there is evidence that 6.0 DO is not sufficient (see Stanislaus SEP references).</p>	<p>Please see the response to comment 1239-222 regarding dissolved oxygen.</p>
1239	224	<p>[From ATT3:]</p> <p>[Page:] K-18</p> <p>[Subject:] Table 3</p> <p>The October flow target (1,000 cfs) seems overly complicated, and may still be insufficient to meet the fall attraction needs.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues. An amendment to the October flow objective is not part of the plan amendments Appendix K, Revised Water Quality Control Plan, states that assignment of responsibility for meeting the October pulse flow objective will be reevaluated during a water right proceeding, FERC licensing proceeding, or other proceeding, after which the State Water Board may require monitoring and special studies to determine what, if any, changes should be made to the October pulse flow objective and its implementation. The State Water Board may require such monitoring and special studies to be part of the SJRMEP. The State Water Board will evaluate the need to modify the October pulse flow objective in a future update of the Bay-Delta Plan based on information developed through these processes.</p>
1239	225	<p>[From ATT3:]</p> <p>[Page:] K-18</p> <p>[Subject:] Table 3</p> <p>800-1,200 cfs minimum at Vernalis seems insufficient to meet fish needs.</p>	<p>Please refer to Master Response 1.1, General Comments, for a general discussion of the scientific basis for the proposed percent unimpaired flow. Please see Master Response 3.1, Fish Protection, for information regarding ecological benefits and scientific basis of the plan amendments. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for a description of modifications to the plan amendments, including the Vernalis base flow objective.</p>
1239	226	<p>[From ATT3:]</p>	<p>Please see response to comment 1239-225 regarding the minimum flow at Vernalis.</p>

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Ltr#	Cmt#	Comment	Response
		<p>[Page:] K-18</p> <p>Minimum flows of 800 to 1,200 at Vernalis are not adequate to meet the narrative goal.</p>	
1239	227	<p>[From ATT3:]</p> <p>[Page:] K-18</p> <p>It is critical to identify what level of protection is hoped to be achieved with this percent of unimpaired flows. Otherwise, we will not know what to measure and if efforts have been successful or not.</p>	<p>Please see Master Response, 2.1, Amendments to the Water Quality Control Plan, regarding the relationship between the narrative and numeric objectives and a discussion of setting biological goals and objectives. Please see Master Response, 2.1, Amendments to the Water Quality Control Plan, regarding the relationship between the narrative and numeric objectives and a discussion of setting biological goals and objectives.</p>
1239	228	<p>[From ATT3:]</p> <p>[Page:] K-19</p> <p>[Subject:] Table 3</p> <p>Taking 65% of Delta inflow at the pumps during the adult migration period can drastically increase straying, as fully 100% of the SJ Basin flows could wind up being pumped, leaving little to no chemical signal for SJ Basin origin fish to use to cue migration.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues. Please also see Master Response 1.1 regarding the State Water Project and water exported to the southern Delta. Please see Master Response 1.2, Water Quality Control Planning Process, regarding the independent proceedings of the updates to the Bay-Delta Plan that address different watersheds. In a separate and independent proceeding for the Sacramento River Watershed and other Delta tributaries exports to the south of the Delta may be addressed.</p>
1239	229	<p>[From ATT3:]</p> <p>[Page:] K-20</p> <p>[Subject:] Footnote 16</p> <p>Consultation with CALFED was struck from previous footnotes. It should also be removed in footnotes 16, 20, 21, & 22.</p>	<p>Please refer to Appendix K, Revised Water Quality Control Plan, to see that Table 3 footnote 16 from the 2006 Bay-Delta Water Quality Control Plan was modified as part of adopting the plan amendments. Footnotes 20, 21, and 22 may be modified in a future amendments to the Bay-Delta Water Quality Control Plan.</p>
1239	230	<p>[From ATT3:]</p> <p>[Page:] K-20</p> <p>[Subject:] Footnote 17</p> <p>The process by which % outflow standards are moved up or down needs to be better clarified.</p>	<p>Please refer to Master Response 2.2, Adaptive Implementation, for responses to comments regarding adaptive methods in the program of implementation for LSJR flow objectives.</p>
1239	231	<p>[From ATT3:]</p> <p>[Page:] K-20</p>	<p>Please see response to comment 1239-228 regarding exports. Please refer to Master Response 3.1, Fish Protection, for responses to comments regarding the LSJR flow objectives and benefits to fish. Please refer to Master Response 2.2, Adaptive Implementation, for responses to comments regarding adaptive methods</p>

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Ltr#	Cmt#	Comment	Response
		<p>[Subject:] Footnote 20</p> <p>Increasing Feb export percent under drier conditions seems counterproductive to juvenile salmon survival.</p>	<p>in the program of implementation for LSJR flow objectives.</p>
1239	232	<p>[From ATT3:]</p> <p>[Page:] K-30</p> <p>"Adaptive adjustments to the flow. . . (1) it will be sufficient to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta; and (2) it will meet any existing biological goals approved by the State Water Board." Number 1 seems to speak to viability or lack of extirpation, while number 2 could be interpreted to the doubling goal in Table 3 (Appendix K). This should be clarified in the executive summary document and more explicitly stated elsewhere in the document.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for a response to comments regarding the LSJR flow objectives, adaptive implementation and the relationship between biological goals of the LSJR flow objectives and the salmon doubling objective.</p>
1239	233	<p>[From ATT3:]</p> <p>[Page:] K-30</p> <p>[Subject:] a)</p> <p>Changes to % require unanimous STM consent. This makes it unlikely that we will ever deviate from 40% if water users and agencies are on the STM, unless outside factors influence the process.</p>	<p>Please refer to Master Response 2.2, Adaptive Implementation, for responses to comments regarding adaptive methods in the program of implementation for LSJR flow objectives.</p>
1239	234	<p>[From ATT3:]</p> <p>[Page:] K-30</p> <p>[Subject:] b)</p> <p>One STM member can convince the executive director to change the flow schedule. This is not Adaptive Management, it is lobbying. Also, how can you project future inflow to make the best decisions?</p>	<p>Please refer to Master Response 2.2, Adaptive Implementation, for responses to comments regarding adaptive methods in the program of implementation for LSJR flow objectives.</p>
1239	235	<p>[From ATT3:]</p> <p>[Page:] K-30</p> <p>[Subject:] c)</p> <p>Holding flow for outside the Feb-Jun period will likely result in efforts to game the system,</p>	<p>Please refer to response to comment 1239-143 regarding year-round flows and responses to commenters' suggested modifications to the plan amendments.</p>

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Ltr#	Cmt#	Comment	Response
		as well as robbing from the juveniles to support the adults or oversummering steelhead. A year-round standard is necessary.	
1239	236	[From ATT3:] [Page:] K-30 [Subject:] d 800-1,200 cfs base flows @ Vernalis seem insufficient, though adjustment requires unanimous consent of the STM. The either 1 member or all members criteria seem both too flexible and too stringent for the a)-d) criteria.	Please see response to comment 1239-225 regarding the minimum flow at Vernalis. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for a description of modifications to the plan amendments and commenters' suggested modification to the plan amendments.
1239	237	[From ATT3:] [Page:] K-32 STM membership is not adequately defined.	Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the Stanislaus, Tuolumne, and Merced Working Group.
1239	238	[From ATT3:] [Page:] K-32 Will the STM consider resulting conditions in the Delta for fish and wildlife benefits in their deliberations of adaptive management operations?	Please see Master Response 2.1, Amendments to the Water Quality Control Plan, specifically the section describing the Program of Implementation, the STM Working Group, the San Joaquin River Monitoring and Evaluation Program, and biological goals for more information about adaptive implementation of the LSJR flow objectives.
1239	239	[From ATT3:] [Page:] K-32 Biological goals should be developed before the percent of unimpaired flow is determined to determine how much flow is needed to achieve specific goals.	Please refer to Master Response 1.1, General Comments, for a discussion of State Water Board collaboration with the Delta Independent Science Board throughout plan implementation, specifically related to developing biological goals, monitoring, and reporting.
1239	240	[From ATT3:] [Page:] K-33 It's not likely that 30-50% of the unimpaired flow between February and June will result in meeting the salmon doubling objective, given average conditions in other parts of the life-cycle.	Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the salmon protection objective and the LSJR flow objectives. Please refer to Master Response 3.1, Fish Protection, for responses to comments regarding the LSJR flow objectives and benefits to fish.
1239	241	[From ATT3:]	Please refer to Master Response 1.1, General Comments, for a discussion of State Water Board collaboration with the Delta Independent Science Board throughout plan implementation, specifically related to

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Ltr#	Cmt#	Comment	Response
		<p>[Page:] K-33</p> <p>[Subject:] Biological Goals</p> <p>It seems unlikely in the face of the current state of conflicting science over water/fish that a group comprised of agencies and water users will come to agreement on a set of biological goals. How does the Board plan to facilitate the process?</p>	<p>developing biological goals, monitoring, and reporting. Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for further clarification on the membership and role of the Stanislaus, Tuolumne, and Merced Working Group.</p>
1239	242	<p>[From ATT3:]</p> <p>[Page:] K-33</p> <p>[Subject:] Compliance</p> <p>The Board should develop a plan for compliance. Leaving this element in the hands of affected parties increases the chance to game the system.</p>	<p>Please refer to Master Response 2.2, Adaptive Implementation, for responses to comments regarding development of compliance methods.</p>
1239	243	<p>[From ATT3:]</p> <p>[Page:] K-34</p> <p>[Subject:] Implementation</p> <p>The Adaptive Management plan should not be put off into the future. More concrete procedures should be outlined by the Board as part of this revision and not left to the STM to define. It is very difficult to get a group of opposed stakeholders to function if there is no rule set in place ahead of time.</p>	<p>Refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the program of implementation, adaptive implementation, and the Stanislaus, Tuolumne, and Merced Working Group.</p>
1239	244	<p>[From ATT3:]</p> <p>[Page:] K-34</p> <p>[Subject:] Operations Plan</p> <p>It appears to state the methods for calculating unimpaired flow can be updated annually. This seems unnecessary, and an opportunity for opposed parties to fight rather than plan.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, Master Response 2.2, Adaptive Implementation, and Master Response 3.2, Surface Water Analyses and Modeling, for responses to comments regarding calculation of unimpaired flow and percent of unimpaired flow.</p>
1239	245	<p>[From ATT3:]</p> <p>[Page:] K-34</p> <p>[Subject:] October Pulse</p> <p>Why is this being deferred until later? When is later? It does not seem logical to have to</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, for responses to comments regarding the distinction between establishing LSJR flow objectives in a water quality control plan and implementing flow objectives through water rights proceedings.</p>

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Ltr#	Cmt#	Comment	Response
		reopen water rights in the future after opening them for the Jan-Jun period.	
1239	246	[From ATT3:] [Page:] K-34 Without more specificity on how the adaptive adjustments are to be made and what criteria will be used to determine if they are beneficial, assessment of their value is unclear.	Please refer to Master Response 2.2, Adaptive Implementation, for responses to comments regarding adaptive methods in the program of implementation for LSJR flow objectives and San Joaquin Monitoring and Evaluation Program. Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the San Joaquin Monitoring and Evaluation Program.
1239	247	[From ATT3:] [Page:] K-34 If the SWRCB does not require monitoring, how will the success of any one component of the Bay-Delta plan be assessed?	Please refer to Master Response 2.2, Adaptive Implementation, for responses to comments regarding adaptive methods in the program of implementation for LSJR flow objectives and San Joaquin Monitoring and Evaluation Program. Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the San Joaquin Monitoring and Evaluation Program.
1239	248	[From ATT3:] [Page:] K-34 Survival should be added to what will be monitored. And Delta monitoring for fish from the San Joaquin tributaries should be added.	Please refer to Master Response 2.2, Adaptive Implementation, for responses to comments regarding adaptive methods and the development of biological goals in the program of implementation for LSJR flow objectives and San Joaquin Monitoring and Evaluation Program. Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the San Joaquin Monitoring and Evaluation Program.
1239	249	[From ATT3:] [Page:] K-35 [Subject:] Emergency We often have "emergencies" with water in California, and nearly always, the instream flow needs of the environment are the ones that take the hit. Will emergencies affect the minimum pool guidance for the reservoirs, the instream flow, or both?	Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the emergency provision in Appendix K, Revised Water Quality Control Plan.
1239	250	[From ATT3:] [Page:] K-35 [Subject:] SJRMEP It is unclear who will be conducting these studies and who will be paying for them. Who is in charge of determining what monitoring is necessary?	Please refer to Master Response 2.2, Adaptive Implementation, for responses to comments regarding adaptive methods in the program of implementation for LSJR flow objectives and San Joaquin Monitoring and Evaluation Program. Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the San Joaquin Monitoring and Evaluation Program.
1239	251	[From ATT3:]	Please see response to comment 1239-250 regarding monitoring and reporting.

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Ltr#	Cmt#	Comment	Response
		<p>[Page:] K-36</p> <p>[Subject:] Annual Report</p> <p>Who will develop this report?</p>	
1239	252	<p>[From ATT3:]</p> <p>[Page:] K-36</p> <p>[Subject:] Comprehensive Report</p> <p>Who will develop this report?</p>	Please see response to comment 1239-250 regarding monitoring and reporting.
1239	253	<p>[From ATT3:]</p> <p>[Page:] K-42</p> <p>[Subject:] SJ Salinity</p> <p>Appears to imply that USBR is still responsible for salinity, though other parts of the document seem to depict a different standard.</p>	Please see Master Response 3.3, Southern Delta Water Quality, for responses to comments regarding USBR responsibility for meeting SDWQ objectives.
1239	254	<p>[From ATT3:]</p> <p>[Page:] K-48</p> <p>Recirculation poses numerous issues for fish migration and homing.</p>	Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.
1239	255	<p>[From ATT3:]</p> <p>[Page:] K-48</p> <p>Recent work by Rachel Johnson suggests that selenium discharge from the Grasslands was potentially responsible for deformed splittail that were found at the Tracy Fish Facility in 2011. This seems like a water quality concern that needs to be addressed.</p>	Selenium is a water quality concern that is being addressed through a Total Maximum Daily Load and is beyond the scope of the plan amendments. Please refer to Appendix K, Revised Water Quality Control Plan, Chapter IV, Program of Implementation, Part B, Measures Requiring a Combination of State Water Board Authorities and Actions by Other Agencies. The comment refers to current projects and actions by other agencies, specifically the Grasslands Bypass Project, that may assist in meeting the southern Delta salinity objectives by reducing high salinity drainage to the San Joaquin River, improving circulation in the southern Delta, and supplementing flows through recirculation. Appendix K states that these projects should be pursued by the identified agencies.
1239	256	<p>[From ATT3:]</p> <p>[Page:] K-50</p> <p>It seems like the CVPIA Land Retirement Program that USBR and Westlands are</p>	This comment is made in reference to projects are beyond the scope of the plan amendments. The comment appears to refer to Appendix K, Revised Water Quality Control Plan, Chapter IV, Program of Implementation, Part B, Measures Requiring a Combination of State Water Board Authorities and Actions by Other Agencies. The comment refers to current projects and actions by other agencies, such as the CVPIA Land Retirement Program, that may assist in meeting the southern Delta salinity objectives by reducing high salinity drainage to the San Joaquin River, improving circulation in the southern Delta, and supplementing flows through

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Ltr#	Cmt#	Comment	Response
		implementing should be incorporated into a staged approach for reduced demand of water as well as reducing drainage return. As land is retired water should be allocated to higher protection of fish and wildlife beneficial uses.	recirculation. Appendix K states that these projects should be pursued by the identified agencies.
1239	257	<p>[From ATT3:]</p> <p>[Page:] K-50</p> <p>Releasing wetland and ag drainage during high flows for dilution is counter to reducing the amount of ag return flows to the river, regardless if salinity objectives at Vernalis are met, as there are other water quality constituents that are harmful in ag return water that you don't want returned to the river regardless of what the flow in the river is.</p>	<p>This comment is made in reference to projects are beyond the scope of the plan amendments. The comment appears to refer to Appendix K, Revised Water Quality Control Plan, Chapter IV, Program of Implementation, Part B, Measures Requiring a Combination of State Water Board Authorities and Actions by Other Agencies. The comment refers to current projects and actions by other agencies, such as the West Side Regional Drainage Plan, that may assist in meeting the southern Delta salinity objectives by reducing high salinity drainage to the San Joaquin River, improving circulation in the southern Delta, and supplementing flows through recirculation. Appendix K states that these projects should be pursued by the identified agencies.</p>
1239	258	<p>[From ATT3:]</p> <p>[Page:] K-50</p> <p>There is adequate information now that would demonstrate a higher level of unimpaired flows is needed to reasonably protect salmonids and contribute to the doubling goal.</p>	<p>Please refer to Appendix K, Revised Water Quality Control Plan, Table of Contents and Chapter IV, Program of Implementation, Part C, Recommendations to Other Agencies. The comment references text in part C, number 3, which identifies control actions recommended for implementation by agencies. Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
1239	259	<p>[From ATT3:]</p> <p>[Page:] K-53</p> <p>[Subject:] AFRP/CVPIA</p> <p>This section discusses the narrative objective and the possibility of adding/replacing with a numeric objective. We recommend incorporating the numeric objective now.</p>	<p>This comment reflects a misunderstanding of this section regarding the program of implementation. The comment appears to refer to Appendix K, Revised Water Quality Control Plan, Chapter IV, Program of Implementation, Part B, Measures Requiring a Combination of State Water Board Authorities and Actions by Other Agencies such as state, federal, and local organizations working toward achieving CVPIA doubling goals. This section does not debate whether to choose numeric or narrative goals for salmon doubling. This section discusses actions by other parties required to implement the narrative objective for salmon protection if implementation of the flow-dependent objectives does not achieve the objective.</p>
1239	260	<p>[From ATT3:]</p> <p>[Page:] K-56</p> <p>Impacts of aquatic nuisance species are exacerbated by low flows. If the SWRCB was to require higher unimpaired flows during the spring and restore the pattern of unimpaired flows throughout the year, we could reduce the spread and proliferation of aquatic nuisance species.</p>	<p>Please refer to Appendix K, Revised Water Quality Control Plan, Table of Contents and Chapter IV, Program of Implementation, Part C, Recommendations to Other Agencies. The comment references text in part C, number 3, which identifies control actions recommended for implementation by agencies other than the State Water Board. This section contains recommendations, not requirements, and numbers 1–9 and 11 are not part of the plan amendments.</p>
1239	261	<p>[From ATT3:]</p> <p>[Page:] K-57</p> <p>In Appendix C, Mesick is cited as identifying flows as the limiting factor for salmon</p>	<p>Please see response to comment 1239-260 regarding this section of Appendix K, Revised Water Quality Control Plan, which is a recommendation section in which numbers 1–9 and 11 are not part of the plan amendments.</p>

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Ltr#	Cmt#	Comment	Response
		<p>production in the San Joaquin basin, not gravel. Without addressing the limiting factor of the population, you may not get any benefit from the gravel replacement.</p>	
1239	262	<p>[From ATT3:] [Page:] K-57 [Section:] 5. Probably should be CVPIA instead of AFRP or include other provisions of CVPIA (e.g., (b)(13), Clear Creek).</p>	<p>Please see response to comment 1239-260 regarding this section of Appendix K, Revised Water Quality Control Plan, which is a recommendation section, in which numbers 1–9 and 11 are not part of the plan amendments.</p>
1239	263	<p>[From ATT3:] [Page:] K-60 [Section:] i., e.) We are not aware of any studies suggesting a need to import silt onto floodplains. This happens naturally when floodplains are inundated.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>
1239	264	<p>[From ATT3:] [Page:] K-60 [Section:] ii. This section should note an expectation to reducing vegetation disturbance for non-native invasive species in these habitats.</p>	<p>Please refer to Appendix K Revised Water Quality Control Plan, Table of Contents and Chapter IV, Program of Implementation, Part C, Recommendations to Other Agencies. The comment references text in part C, number 10, item ii, which identifies control actions recommended for implementation by agencies other than the State Water Board. The recommended change is not necessary because text in makes it clear that the section contains recommendations, not requirements, and identifies that these actions should occur when appropriate.</p>
1239	265	<p>[From ATT3:] [Page:] K-61 [Section:] v. Clarify if these are real requirements or just model assumptions. It looks like it may just be model assumptions (Appendix F.1, F.1-30 through 33.). If so, this is a huge issue, as none of the modeling conducted is valid without adding this as a constraint.</p>	<p>Please refer to Appendix K, Revised Water Quality Control Plan, Table of Contents and Chapter IV, Program of Implementation, Part C, Recommendations to Other Agencies. The comment references text in part C, number 10, item v, which identifies control actions recommended for implementation by agencies other than the State Water Board. The recommendations in part C, number 10 are for non-flow actions that are complementary to the LSJR flow objectives for the protection of fish and wildlife. These recommended actions, together with the coordinated monitoring and adaptive implementation of the LSJR flow objectives, are expected to improve habitat conditions that benefit native fish and wildlife, or are expected to improve related science and management within the LSJR watershed. Part 10 San Joaquin River Non-Flow Actions, item v recommends actions to improve reservoir operations and/or physical structures to maintain adequate water temperature conditions contains. These are not</p>

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Ltr#	Cmt#	Comment	Response
			<p>requirements or model assumptions. These are recommendations for control actions to be implemented by agencies other than the State Water Board to achieve attainment of water quality objectives and to obtain additional information on the effects of flow and water quality on beneficial uses.</p> <p>The text in this section makes it clear that the section contains recommendations, not requirements or model assumptions.</p>
1239	266	<p>[From ATT3:]</p> <p>[Page:] K-62</p> <p>The newest data on the HORB suggests we are not getting much benefit from it at flows less than 2,500 cfs at Vernalis (Buchanan et al 2015). Found at https://www.fws.gov/lodi/salmonid_survival_studies/juvenile_salmonid_survival_reports.htm. The use of the HORB needs to be coupled with higher flows to be more effective. Flows of between 6,000 and 7,000 cfs resulted in survival of between 0.30 and 0.45 from Mossdale to Jersey Point. Survival of these levels is necessary to meet the narrative salmon protection and doubling goals. There should be a provision to at least test these type of conditions to see if we do get those levels of survival with that flow and with the HORB now.</p>	<p>Please refer to Appendix K, Revised Water Quality Control Plan, Table of Contents and Chapter IV, Program of Implementation, Part C, Recommendations to Other Agencies. The comment appears to reference text in part C, number 10, item viii, which identifies control actions recommended for implementation by agencies other than the State Water Board.</p> <p>The recommended change is not necessary because text in the SED makes it clear that the section contains recommendations, not requirements or model assumptions.</p> <p>The recommended study could be included in voluntary agreements and/or the San Joaquin River Monitoring and Evaluation Program (SJRMEP) or through other means. Please refer to Master Response 1.1, General Comments, and Master Response 2.1, Amendments to the Water Quality Control Plan for additional information regarding voluntary programs and the (SJRMEP).</p>
1239	267	<p>[From ATT3:]</p> <p>[Page:] K-64</p> <p>[Section:] 11.</p> <p>Shouldn't it be the SWRCB's responsibility to evaluate SRRRP flows into the LSJR as part of these efforts?</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the plan area and extended plan area and commenters' suggested modifications to the plan amendments. Please see Master Response 1.1, General Comments, regarding the San Joaquin River Restoration Program.</p>
1239	268	<p>[From ATT3:]</p> <p>[Page:] K-65</p> <p>Please add USFWS as a part of IEP.</p>	<p>Please see Master Response 1.1, General Comments, for responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues. USFWS is currently a member agency of the Interagency Ecological Program (IEP). Please refer to: water.ca.gov/iep.</p>