

Table 4-1. Responses to Comments

Ltr#	Cmt#	Comment	Response
3200	1	We need every drop we can get to sustain our crops. We are not planting new orchards, but maintaining what we have already planted.	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.
3201	1	A "taking" of water rights in the Valley with no regard for the people that depend in so many ways on the very surface and groundwater that will be taken.	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.
3202	1	Stop the taking of water and livelihoods of those who work so hard to provide a safe, plentiful food supply.	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.
3203	1	I think people's lives matter more than some fish but the truth of the matter is the root of all evil is 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.
3204	1	Stop the water grab that ignores the predation of salmon by striped bass and continues the relentless destruction of agriculture and the wasting of water to keep the fish happy!	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.
3205	1	Lawsuit--public outrage alone won't stop the rip-off.	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.
3206	1	California is number 1 in the nation with farming. How [are] we going to kill such a secure job field?	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.
3207	1	Think before you do. If the plan is approved it will decimate the whole Valley and then some. People will become ill and even die and those deaths will be on your hands. The Valley is a big part of the U.S.A's food supply and that will be on the hands of those involved. This is an extremely bad plan for the Valley and for California.	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.
3208	1	More water storage!	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.
3209	1	Stop stealing our water and lying to us about how bad the drought is. Farmers need the water for our food. You, Mr. Brown, hold us hostage with our water.	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.
3210	1	California's water belongs to California's citizens, not to Jerry Brown or legislators to do as they please. Control the water, you control the food, you control the people. That's the idea.	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.
3211	1	Our water bill was just increased, yet our trees and lawns are dying due to the water ration. Stop the ration that is allegedly due to drought, and give us the 40% or whatever amount is slated to go elsewhere, for our lawns and homes!	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.
3212	1	Stop the drought! We need water for our lawns, plants, and trees! They are dying!	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.
3213	1	Don't take our water. We need to grow food for this country and the world. These cities in this valley will literally dry up and blow away. Do not create another Dust Bowl!	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.
3214	1	California's water redistribution of our water is turning this most fertile valley, the San Joaquin Valley, into a famine for the whole world and is totally unnecessary!	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.
3215	1	Please don't waste our water to save the salmon. The economy and well-being of the	Please see Master Response 1.1, General Comments for responses to comments that either make a general

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		Central Valley is already strained because of the drought.	comment on the plan amendments or do not raise significant environmental issues.
3216	1	Please quit trying to steal our water for farming.	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.
3216	2	You are not assured that it will even help the fish. Other groups have done things without taking the water to help make sure the fish are taken care [of]. The road is paved with good intentions. Usually does not work out well for the people.	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.
3217	1	Please do not deplete our rivers. State water management is skewed. Our orchards are being lost. We need to save water for people and agriculture, not to save the Delta smelt.	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.
3218	1	This has got to stop. Congress needs to change the laws surrounding this issue and putting a smelt over human lives and our food and farming is wrong.	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.
3219	1	Please mitigate the plan to avoid an economic crisis in our area; this is our livelihood.	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.
3220	1	Don't take more water away from the people that need it most, the farmers. Without the farmers we will go hungry.	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.
3221	1	How can you share what you don't have? The Valley is struggling and now they want to stress our groundwater.	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.
3221	2	Quit building in Southern California if you do not have the water resources to sustain them.	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.
3222	1	California produces a large quantity of food and now you are trying to take away the water. We're already in a drought, what are you thinking? Do you really expect this nation to thrive when it will rely on other countries for food?	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.
3223	1	The Delta smelt is just a fish. Stop wasting water needed for people and food.	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.
3224	1	Very little sense can be made of a proposal to divert such a large percentage of water to the Delta unless this all about the SoCal votes and the proposed tunnel. Gov. Brown is just looking for something to hang his name on as a so-called legacy.	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.
3224	2	The fish have already changed their habits and reintroducing fingerlings doesn't work. They just become food for the striped bass.	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.
3225	1	I think we should give the farmers more water. We need the food--cut the grass water.	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.
3226	1	Stop or end regulations that cause drought conditions in the Valley; your food and mine depends on water!	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.
3227	1	Quit diverting our water. Build more reservoirs and desalination plants.	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.
3228	1	From what I can tell, this plan sounds like a disaster for our county, especially for	Please see Master Response 1.1, General Comments for responses to comments that either make a general

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		agriculture. Everyone has to eat. It's not optional. So preventing farmers from getting enough water to grow the food is not something you should be recommending.	comment on the plan amendments or do not raise significant environmental issues.
3228	2	Apparently, sending that much more water down the rivers won't accomplish much of anything except to waste it. I'm a strong environmentalist, but we have to be basing these kinds of decisions on the actual facts and the best science. Drying up our county is a terrible idea that will have long-term consequences for the aquifer.	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.
3229	1	Our lives depend on ag.	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.
3230	1	Agriculture is a vital part of California's economy. Please stop the attack on this industry.	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.
3231	1	Start building more water retention by building reservoirs for water storage and lower the water levels in rivers during severe drought years.	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.
3232	1	We need water for our farmers; without farmers there isn't any food or the cost of fruits, vegetables and dairy products go up. We are just making ends meet and the farmers are going from one season to the next wondering if they will be able to save their farms. Stop the abuse of power.	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.
3233	1	Screw the fish, save a farmer!	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.
3234	1	If people want to live in a part of the state that does not have enough water to sustain them then they should be thirsty. I'm tired of having no lawn or garden because of an imposed drought while the southern part of the state steals water from us. I feel the same way about the Bay Area as well. Enough is enough. Our lakes and water impounds are drying up and still they keep pumping water south then blame the decline of the Delta on invasive species. They are so very wrong; leave some water here and watch the change of health in the Bay and Delta region. Let them build some dams in Southern California.	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.
3235	1	Stop taking our water south. Stop building in southern California where there is not enough water to support the people that already live there. I have no nice green lawns or garden because of the drought that is in effect by our governor so he could try to pay off his political debts to the south with our water with his stupid tunnels. I say not another drop goes south until they do something to store or desalinate water down there.	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.
3236	1	Extend the comment period to March 31, 2017.	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.
3237	1	An increase in river flows may lead to more pumping from the aquifer. Predation and rising water temperatures are expected to negate any increase in flow. A well-timed extra release similar to previous releases but for shorter durations is enough.	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.
3238	1	I am very concerned with the State's proposed action. As you already heard from numerous people at the hearings, water is an integral part of the Central Valley and its economy. The Central Valley's employment and its economy is already well below the State's average and the reduction of available water will make the situation even worse.	Please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act for discussion regarding the groundwater analysis.

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		<p>We were very fortunate to receive some relief from the drought last winter. The previous winter was very dry and all irrigation districts had to reduce their water allocation to customers that summer season requiring them to rely on additional groundwater pumping. My comment will focus on groundwater.</p> <p>I live on a rural parcel that has a small domestic water well for household use. During that summer season, when there was a high demand on groundwater by heavy pumping, my well dropped five feet in just one summer. This is an enormous drop! And this is only from one season of high groundwater pumping. The State's plan would make heavy groundwater pumping more of a norm, as less water would be available for storage behind local dams.</p> <p>Most domestic wells are somewhat shallow and some wells did go dry during the drought. I suspect most of the remaining domestic wells will be able to tolerate Mother Nature's periodic drought conditions with aquifers replenishing themselves between drought years. With the State's plan, there will be more heavy groundwater pumping so there will not be enough periods of replenishment for these wells, causing them to go dry. So what happens at this point?</p> <p>I suspect individual homeowners will be forced to abandon their domestic wells and drill deeper. Some rough cost estimates I heard are about \$25,000 to \$50,000 per well depending on depth and other conditions. I don't know how many domestic wells there are but I suspect thousands, or perhaps tens of thousands, private wells in the Central Valley. This is an enormous cost passed on to a region that already is severely impacted economically.</p> <p>But it gets better, as more individuals are forced to drill deeper for water, the cycle continues to drill even deeper as the water levels keep dropping. Each time the cost increases as it costs more money to drill deeper into the ground.</p> <p>The State's plan has many flaws and I believe there are other alternatives to achieve the goals being pursued. I would suggest the State work in close coordination with the various irrigation districts, city, and county officials to reach those goals in a coordinated effort so they can be achieved with minimal sacrifice by all those involved.</p>	
3239	1	<p>Contrary to the State Water Board's characterization, the SED is not a recirculation of the 2012 Draft SED in any sense of the word. The State Water Board received approximately 4,000 responses to the 2012 Draft SED. Apart from providing a summary of certain concerns raised in 119 of those 4,000 responses, the Board has neglected the thousands of comments and criticisms of the 2012 Draft SED, and has released an entirely new document that bears no resemblance to the original, other than the flawed and incomplete analysis that plagues both documents. (SED, at Appx. M, p. 1)</p> <p>The stated purpose of the SED is to analyze the environmental impacts of the State Water Board's proposed revision to the Bay Delta Plan, and to fulfill the requirements of the California Environmental Quality Act ("CEQA") and the Porter-Cologne Water Quality Control Act ("PCWQA"). (SED, at ES-2.) The proposed revision to the Bay Delta Plan would, among other things, expand the geographic scope of 2006 Bay Delta Plan to cover certain tributary watersheds to the San Joaquin River, and replace the existing Lower San Joaquin River flow objective at the Vernalis compliance point with a requirement to maintain a percent of unimpaired flow between 30 and 50 percent on each of the Stanislaus,</p>	<p>See Master Response 1.1, General Comments, regarding the public review and recirculation process and the requirement to submit new comments on a recirculated document. Also see Master Response 1.1 for an explanation of how the 119 comments identified by the State Water Board covered the range of substantive comments. These comments are summarized in Appendix M, Summary of Public Comments on the 2012 Draft SED.</p> <p>Please also see Master Response 1.1 regarding the SED approach to analysis. The State Water Board prepared the SED with a sufficient degree of analysis to fully inform the decision-makers about the environmental consequences of their decision and in light of what is reasonably feasible considering the magnitude of the plan amendments and their geographic scope. The SED has been prepared pursuant to the State Water Board's certified regulatory program and is a program-level, not project-level, first-tier evaluation, consistent with the State CEQA Guidelines, section 15168.</p> <p>Please see response to comment 3239-154 regarding the Porter-Cologne Water Quality Control Act.</p> <p>Please see response to comment 3239-93 regarding Article X, Section 2 of the California Constitution.</p>

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		<p>Tuolumne, and Merced Rivers from February through June. (SED, at Appx. K, p. 1, 18.)</p> <p>The SED purports to analyze the environmental impacts--on a "programmatic level"--of requiring a range of unimpaired flow between 20 and 30 percent (LSJR Alternative 2), between 30 and 50 percent (LSJR Alternative 3), and between 50 and 60 percent (LSJR Alternative 4). (SED, at ES-2, ES-14.) The SED has identified LSJR Alternative 3 as the "Recommended LSJR Alternative," with an initial unimpaired flow of 40 percent and an adaptive range of 30 to 50 percent on each of the three tributaries ("Tributary Flow Objective"). (SED, at ES- 21.)</p> <p>The San Joaquin Tributaries Authority ("SJTA") [Footnote 1: The San Joaquin Tributaries Authority is a California Joint Powers Authority, duly organized and existing in accordance with the provisions of Sections 6500 et seq. of the Government Code, and comprised of Modesto Irrigation District, Oakdale Irrigation District, South San Joaquin Irrigation District, Turlock Irrigation District and the City and County of San Francisco, a Public Utilities District, all of which are authorized by the laws of the State of California to administer water supplies and to appear and represent their landowners in matters relating to water resources.] provides the following comments on the SED.</p> <p>In sum, the SED should not be adopted by the State Water Board because the environmental analysis does not comply with CEQA, nor with the Board's obligations for analyzing the environmental impacts of a water quality control plan as a certified regulatory program. In addition, the SED should not serve as a basis for the adoption of the proposed amendments to the Bay Delta Plan. The proposed water quality objectives and the program of implementation violate the PCWQA, Article X, Section 2 of the California Constitution, the rules of water right priority, and various other laws and regulations. For these reasons and others, all of which are set forth in detail below, the Board should decline to adopt the SED and the proposed revisions to the Bay-Delta Plan.</p> <p>The SJTA incorporates the comments of the City and County of San Francisco ("CCSF"), Modesto Irrigation District ("MID"), Turlock Irrigation District ("TID"), Oakdale Irrigation District ("OID"), and South San Joaquin Irrigation District ("SSJID"). The SJTA also incorporates by reference previous comments and information the SJTA and its member agencies provided the State Water Board in Phase 1 and Phase 2.</p>	<p>Please see response to comment 3239-92 regarding water rights priorities.</p> <p>The comment makes reference to comments submitted by other entities. To review responses to comments submitted by other entities within the comment period on the 2016 Recirculated Draft SED, please refer to the index of commenters in Volume 3 to locate the letter number(s) of interest.</p>
3239	2	<p>History of Water Quality Control Plans for the San Francisco Bay/Sacramento-San Joaquin Delta</p> <p>The State Water Board has long recognized that California's two massive water projects, the Central Valley Project ("CVP") operated by the United States Bureau of Reclamation ("USBR") and the State Water Project ("SWP") operated by the Department of Water Resources ("DWR"), have had significant impacts on fish, wildlife and water quality in the Sacramento-San Joaquin Delta ("Delta"). [Footnote 2: In 1959, the California Legislature fixed the legal boundaries of the Sacramento-San Joaquin Delta. (Water Code, § 12220.)) Indeed, the State Water Board has stated that the protection of all fishery species within the Delta, including the protection of salmon, "would require the virtual shutting down of the project export pumps" operated by USBR and DWR. (Water Rights Decision 1485, p. 13.) In recognition of these impacts, the Board has been developing and adopting water quality standards to protect the Delta since 1965. (United States v. State Water Resources Control Bd. (1986) 182 Cal.App.3d 82, 107 ("Racanelli. ")) [Footnote 3: Justice Racanelli's opinion in United States v. State Water Resources Control Bd. is commonly referred to as the</p>	<p>The comment provides opinion and the commenter's interpretation of background information. Please see Master Response 1.1, General Comments, regarding comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p>

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		<p>"Racanelli" Decision, and that reference is used throughout these comments.]</p> <p>The first set of comprehensive water quality standards for the Delta was developed by several agencies, including DWR and USBR. (Racanelli, supra, 182 Cal.App.3d at 110.) The State Water Board later incorporated these standards into DWR's permits for the operation of the SWP in Water Right Decision 1275. (Ibid.) In 1967, the State Water Board submitted these standards to the United States Secretary of the Interior for approval in accordance with the Federal Water Pollution Control Act, and the standards were approved on the condition that the Board consider adopting more stringent Delta salinity requirements. (Ibid.)</p> <p>Several years later, in 1971, the State Water Board established new water quality standards for the Delta in Decision 1379. (Racanelli, supra, 182 Cal.App.3d at 110.) The standards were denominated as "State Delta Standards," and established protections for agriculture, municipal/industrial supply, and fish and wildlife. (Water Rights Decision 1379, p. 37.) The State Delta Standards used a set of compliance points exclusively within the Delta, the southernmost point of which is at Vernalis. (Water Rights Decision 1379, p. 53; Water Code, § 12220.)</p> <p>In 1976, the State Water Board convened an evidentiary hearing lasting 11 months for the purpose of formulating a water quality control plan for the Delta, and to assess whether the plan should be implemented by amending USBR and DWR's permits for operation of the CVP and SWP. (Ibid.) The hearing culminated in the Board's adoption of the 1978 Water Quality Control Plan for the Sacramento-San Joaquin Delta and Suisun Marsh, and Water Rights Decision 1485. (Racanelli, supra, 182 Cal.App.3d at 111.) As with the previously-adopted water quality standards for the Delta, the Board sought to protect agriculture, municipal/industrial supply, and fish and wildlife within the Delta. (Water Rights Decision 1485, p. 10.)</p> <p>In addition, the Board once again sought to implement the plan by imposing conditions on USBR and DWR's permits for the operation of the CVP and SWP, and established a set of water quality control stations exclusively within the boundaries of the legal Delta. (Water Rights Decision 1485, p. 21-30; Plate 1, Tables 1-3.) Subsequent litigation seeking to invalidate the water quality control plan and Decision 1485 resulted in a decision from the First District Court of Appeal holding that the Board defined the scope of its water quality role too narrowly by limiting it in terms of enforceable water rights. (Racanelli, supra, 182 Cal.App.3d at 119-120.) However, the First District declined to invalidate the plan, or D-1485, because the State Water Board had already announced its intention to conduct hearings in 1986 to establish new and revised water quality objectives for the Delta. (Id. at 120.)</p> <p>The State Water Board adopted a Water Quality Control Plan for Salinity for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary on May 1, 1991, pursuant to State Water Board Resolution No. 91-34. (State Water Resources Control Bd. Cases (2006) 136 Cal.App.4th 674, 699-700; see Resolution 91-34.) As relevant here, water contributions from the San Joaquin River for the protection of the Bay-Delta estuary were controlled and measured at Vernalis (1991 Water Quality Control Plan, Table 6-3(B) & (C).) The United States Environmental Protection Agency (USEPA) approved the salinity and dissolved oxygen objectives in this plan, but disapproved the remaining fish and wildlife objectives. (State Water Resources Control Bd. Cases, 136 Cal.App.4th at 699-700.) In response, the Board reconvened proceedings to revise the water quality objectives for the Bay-Delta and</p>	

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		adopted a new water quality control plan in May 1995. (Id. at 700.)	
3239	3	<p>The 1995 Water Quality Control Plan and Water Right Decision 1641</p> <p>In 1995, the State Water Board adopted the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary ("1995 Bay-Delta Plan"). The 1995 Bay-Delta Plan identified 17 beneficial uses "both within the Delta and throughout the state, to be served by the waters of the Delta." (State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 701.) Consistent with past practice, and despite the broad reach of the beneficial uses to be protected, the Board confined all of the water quality control stations for its objectives to the legal Delta. (1995 Bay Delta Plan, p. 16-26, 45; Figure 2.) Again, water contributions from the San Joaquin River for the protection of the Bay-Delta estuary were controlled and measured at Vernalis, the southernmost point in the legal Delta. (1995 Bay Delta Plan, p. 19.)</p> <p>In order to implement the 1995 Bay Delta Plan, the State Water Board issued Water Rights Decision 1641 ("D-1641"). As part of D-1641, the Board imposed responsibility for meeting the objectives on USBR and DWR by amending their permits for the operation of the CVP and SWP. (D-1641, p. 146-166.) Notably, instead of implementing the Vernalis pulse flow objective from the 1995 Bay-Delta Plan, the Board implemented the Vernalis Adaptive Management Plan ("VAMP") pursuant to the San Joaquin River Agreement ("SJRA"), which was a 12-year experimental program that would provide flows at Vernalis at a level that would not meet the pulse flow objective. (State Water Resources Control Bd., supra, 136 Cal.App.4th at 706-709; D-1641, passim.)</p> <p>In subsequent litigation, the Third District Court of Appeal held that the Board had no authority to implement a lesser flow regime than was required by the 1995 Bay-Delta Plan because such an act would violate Water Code section 13247. (State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 727-730.) The Board ultimately amended the plan to authorize a staged implementation of the Vernalis pulse flow objective "to allow for scientific experimentation by conducting the Vernalis Adaptive Management Plan (VAMP) experiment." (2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, Plan Amendment Report, Appx. 1, p. 2.) None of the amendments changed USBR's responsibility for meeting the flow objectives at Vernalis, nor the location of the compliance point for San Joaquin River contributions at Vernalis.</p>	<p>The comment provides some information related to the 1995 Bay-Delta Water Quality Control Plan. 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>
3239	4	<p>Delta Reform Act</p> <p>In 2009, the State passed the historic Sacramento-San Joaquin Delta Reform Act, codified in Water Code section 85000 et seq. An important component of the Bay-Delta Reform Act was Water Code § 85086[c]. This section required the State Water Board to, among other things, "develop new flow criteria for the Delta ecosystem necessary to protect public trust resources" based upon a "review [of] existing water quality objectives" and using "the best available scientific information." (Water Code, § 85086[c][1].) The flow criteria needed to "include the volume, quantity, and timing of water necessary for the Delta ecosystem under different conditions." (Water Code, § 85086[c][1].) In 2010, the State Water Board adopted and sent to the Legislature a report entitled, "Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem" ("Delta Flow Criteria Report"). The purpose of the report was to inform decision makers about the flow necessary into the Delta to fully protect public trust resources.</p>	<p>Please see Master Response 1.1, General Comments regarding the Delta Reform Act and Master Responses 1.1, 1.2, Water Quality Control Planning Process, and 3.1, Fish Protection regarding the Delta Flow Criteria Report.</p>

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		<p>The State Water Board noted the scope of its report in the document itself: "Due to the limited nine-month time period . . . the notice for the informational proceeding requested information on what volume, quality and timing of Delta outflows are necessary . . . Delta outflows are of critical importance to various ecosystem functions. . . . This report recognizes the role of source inflows used to meet Delta outflows . . ." (p. 14.)</p>	
3239	5	<p>The 2012 Draft SED</p> <p>On December 31, 2012, the State Water Board released its draft substitute environmental document in support of potential changes to the San Joaquin River flow and southern Delta water quality objectives in the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary ("2012 Draft SED"). Consistent with prior iterations of the Bay-Delta water quality control plan, the 2012 Draft SED proposed a set of objectives with water quality control stations within the boundaries of the legal Delta, namely at Vernalis. (2012 Draft SED, Appx. K, p. 1). However, and for the first time, the 2012 Draft SED suggested that a set of objectives with water quality control stations might be established outside the boundaries of the legal Delta. Specifically, the 2012 Draft SED listed objectives for inflows from the Tuolumne, Merced and Stanislaus Rivers at locations to be decided later. (2012 Draft SED, Appx. K, p. 1.)</p> <p>Rather than addressing the needs of the Delta for the purpose of protecting fish and wildlife beneficial uses, the 2012 Draft SED concluded that "more flow is needed from the existing salmon and steelhead bearing tributaries in the LSJR watershed down to Vernalis." (2012 Draft SED, Appx. K, p. 3.) In addition, and again for the first time, the 2012 Draft SED indicated that responsibility for meeting the objectives would be placed on parties other than USBR. The 2012 Draft SED stated that the plan would be implemented, in part, through Federal Energy Regulatory Commission ("FERC") hydropower licensing processes. (2012 Draft SED). As USBR does not need a FERC license to operate its hydropower facilities on the Stanislaus River, and as DWR has no hydropower facilities on any of the tributaries to the San Joaquin, the plan of implementation clearly targeted water right holders on the Merced, Tuolumne and Stanislaus Rivers.</p> <p>Recirculated Staff Draft</p> <p>On September 16, 2016, State Water Board Staff ("Staff") recirculated a revised Draft of the Bay-Delta Plan and a revised SED ("Proposed Project"). The shift from a Bay-Delta plan to some type of hybrid Basin/Bay-Delta planning effort--which began in 2012--is solidified in the Proposed Project. Throughout these comments, it will become clear that the proposed water quality control plan, and the lack of focus therein on Bay-Delta issues, leads to unsolvable legal problems, procedural defects, and an un-implementable plan.</p>	<p>The comment provides opinion and commenter's interpretation of background information. Please see Master Response 1.1, General Comments, regarding comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the State Water Board's authority to define the geographic scope of the Bay-Delta Plan.</p>
3239	6	<p>Violations of Porter-Cologne Water Quality Control Act</p> <p>The Porter-Cologne Water Quality Control Act ("PCWQCA"), which is part of the California Water Code, controls the review and revision of water quality control plans ("WQCP"). Each WQCP must contain three components: (1) a list of beneficial uses to be protected by the plan, (2) water quality objectives to ensure the reasonable protection of those beneficial uses, and (3) a program of implementation for achieving the water quality objectives. (Water Code, §§ 13050[j], 13241, 13242.) Staff's proposed revisions to the Bay-Delta Plan violate the Porter-Cologne Act requirements in several ways.</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding how the plan amendments and SED comply with the Porter-Cologne Water Quality Control Act. Please also see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the level of specificity required in the flow objectives, how the narrative and numeric flow objectives in the plan amendments meet those requirements, and for clarifying modifications made to the plan amendments.</p> <p>Please see the Executive Summary, Chapter 1, Chapter 3, and Appendix K for a summary and definition of the plan amendments. The plan amendments do not propose any changes to the salmon doubling objective contrary to the comment that asserts the salmon doubling objective is proposed by State Water Board staff. All the objectives listed in Appendix K, Table 3, Water Quality Objectives for Fish and Wildlife Beneficial Uses,</p>

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		<p>The proposed objectives are unclear and will not protect the beneficial uses identified in the Plan.</p> <p>The WQCP identifies numerous beneficial uses to be protected. (SED, at Appx. K, p. 10- 11.) As relevant here, the revised water quality objectives in Table 3 are intended to protect fish and wildlife beneficial uses in the Bay-Delta Estuary, including (1) Estuarine Habitat (EST), (2) Cold Freshwater Habitat (COLD), (3) Warm Freshwater Habitat (WARM), (4) Migration of Aquatic Organisms (MIGR), (5) Spawning, Reproduction, and/or Early Development (SPWN), (6) Wildlife Habitat (WILD), (7) and Rare, Threatened, or Endangered Species (RARE). (SED, at Appx. K, p. 10-13.)</p> <p>State Water Board Staff proposes three different objectives to protect these beneficial uses: (1) the Narrative Flow Objective; (2) the numeric Tributary Flow Objective (30-50% unimpaired flow from the Stanislaus, Tuolumne and Merced Rivers); (3) the Vernalis Flow Objective; and (4) the Salmon Doubling Objective. Staff also proposes a southern Delta salinity objective for the protection of agricultural beneficial uses.</p> <p>The objectives intended to protect fish and wildlife beneficial uses are addressed in turn below. Each objective lacks the legally required clarity for a regulation. In addition, the analysis in the SED does not reflect a true implementation of these objectives, and thus does not demonstrate that the objectives will protect the beneficial uses as required by the Porter-Cologne Act. Even if the objectives were implemented in the manner set forth in the SED, the analysis fails to show that the identified beneficial uses will be protected. In response to Staff's failure to model a true implementation of the objectives, the SJTA and its member agencies have hired consultants to perform additional analysis of the proposed plan. That analysis shows that the revised objectives will not protect the beneficial uses identified in the plan, and will instead adversely affect those beneficial uses. Because the proposed objectives are unclear and do not protect the beneficial uses, the plan violates the Porter-Cologne Act (Water Code, § 13000 et seq.), and the Board should decline to adopt it.</p>	<p>are intended to protect fish and wildlife beneficial uses.</p> <p>Several changes were made to Appendix K in response to comments, including to the LSJR flow objectives in Table 3. These changes were made for clarity and consistency and do not substantively change the LSJR flow objectives or program of implementation from the Draft SED. These changes include modifying the LSJR unimpaired flow objective in Table 3 to include the starting 40 percent of unimpaired flow from the program of implementation. The adaptive range of 30-50 percent of unimpaired flow on each of the Stanislaus, Tuolumne, and Merced Rivers from February through June remains unchanged.</p> <p>In addition, the base flow objective text was simplified to clarify that the base flow must be met at all times during the February through June time period and that this is in addition to the required percent of unimpaired flow on the three eastside tributaries. The Vernalis base flow objective is in place to provide a minimal level of flow in the LSJR. This need for additional flow above the percentage of unimpaired flow would most likely happen during critically dry periods. The base flow requirement was also clarified to include that the minimum base flow value of 1,000 cfs at Vernalis, as stated in the program of implementation, is the starting point. The base flow adaptive range of 800-1,200 cfs at Vernalis remains unchanged. See Master Response 2.1, Amendments to the Water Quality Control Plan, for additional discussion regarding LSJR flow requirements, including base flow.</p> <p>The SED analyses provide reasonable estimates of implementing the LSJR flow objectives for a planning-level document and analysis. The primary utility of a planning-level model is a comparative analysis, where the physical system is represented at a sufficient level of precision in order to reasonably represent the most important effects of changes. In this case, the WSE model is configured to determine the change from baseline of water supply stored and available to meet diversion demands as a result of alternatives incorporating streamflow requirements. The general approach is to calculate available water for diversion in each water year based on inflows, net available water from storage after carryover guidelines, after streamflow targets are met.</p> <p>Please refer to Master Response 3.2, Surface Water Analyses and Modeling, for additional information and responses to comments regarding Water Supply Effects modeling for the LSJR flow alternatives and why the additional analyses provided by SJTA and its member agencies do not reasonably represent implementation of the plan amendments.</p> <p>Please refer to responses 3239-8, 3239-9, 3239-10, 3239-11, and 3239-12 regarding the narrative objective.</p> <p>The proposed objectives are clear, the SED analysis shows improved conditions for target beneficial uses (SED Chapter 7 and 19), and the SED adequately identifies the significant effects of the planning-level decision to update the Bay-Delta plan. The SED has been prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes into account environmental consequences (Cal. Code Regs., tit. 14, § 15151).</p>
3239	7	<p>Narrative Objective</p> <p>The State Water Board proposes a Narrative Objective that reads as follows: "Maintain inflow conditions from the San Joaquin River watershed to the Delta at Vernalis sufficient to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta. Inflow conditions that reasonably contribute toward maintaining viable native migratory San Joaquin River fish populations include, but may not be limited to, flows that more closely mimic the natural hydrographic conditions to which native fish species are adapted, including the relative magnitude, duration, timing, and spatial extent of flows as they would naturally occur. Indicators of viability include</p>	<p>The State Water Board complied with the standards applicable to water quality control plan objectives. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for an explanation as well as responses 3239-8, 3239-9, 3239-11, and 3239-12. State agencies are generally obligated to comply with water quality control plans, (Id., § 13247.) The plan amendments and Bay-Delta Plan make it clear that the State Water Board will require implementation of the LSJR flow objectives, pursuant to the program of implementation, in water right and water quality actions, both of which are directly enforceable.</p>

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		<p>population abundance, spatial extent, distribution, structure, genetic and life history diversity, and productivity." (SED, at Appx. K, p. 18.)</p> <p>The Narrative Objective lacks clarity.</p> <p>Any water quality control plan, or revision thereof, adopted by the State Water Board must be submitted to the Office of Administrative Law ("OAL") for review and a determination of compliance with "the standards of necessity, authority, clarity, consistency, reference, and nonduplication . . ." (Government Code, § 11353[b][4]; see Government Code, § 11349.1[a].) The term "clarity" means "written or displayed so that the meaning of regulations will be easily understood by those persons directly affected by them." (Government Code, § 11349[c].)</p> <p>A regulation is presumed not to comply with the clarity requirement if any of the following conditions exist: (1) "the regulation can, on its face, be reasonably and logically interpreted to have more than one meaning," or (2) "the language of the regulation conflicts with the agency's description of the effect of the regulation," or (3) "the regulation uses terms which do not have meanings generally familiar to those 'directly affected' by the regulation, and those terms are defined neither in the regulation nor in the governing statute," or (4) "the regulation uses language incorrectly," or (5) "the regulation presents information in a format this is not readily understandable by persons 'directly affected,'" or (6) "the regulation does not use citation styles which clearly identify published material cited in the regulation." (Cal. Code Regs., tit. 1, § 16.)</p> <p>The Narrative Objective is unlawful because, among other things, it can be interpreted to have more than one meaning, the language conflicts with the agency's description of the effect of the regulation, and it uses terms which do not have meanings generally familiar to those directly affected by the regulation. (Cal. Code Regs., tit. 1, § 16[a][1],[2],[3].)</p>	
3239	8	<p>The Narrative Objective can be interpreted to have different meanings.</p> <p>The phrase "support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta" is ambiguous, undefined, and could be logically interpreted to have multiple meanings.</p> <p>First, the words "support and maintain" are unclear and could have various interpretations. Merriam-Webster defines "support" as "to provide a basis for the existence or subsistence of." (http://www.merriam-webster.com/dictionary/support.) Thus, the regulated community could interpret the Narrative Objective to require the regulated entities provide a basis for the existence or subsistence of fish populations migrating through the Delta. The words "support and maintain" could also imply that upstream operations need to make up for losses in the Delta and the ocean (most notably, harvest) to support natural production. However, the Narrative Objective does not explain whether any of this is necessary, nor what must be done by regulated entities to provide support and maintenance, nor what level of support and maintenance is needed.</p> <p>Second, the term "viable" is unclear and could have various interpretations. Merriam-Webster defines "viable" as "capable of existence and development in an independent unit." (http://www.merriam-webster.com/dictionary/viable.) The Narrative Objective lists indicators to measure viability: "Indicators of viability include population abundance, spatial extent, distribution, structure, genetic and life history diversity, and productivity." (SED, at</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the required LSJR flow requirements, the narrative and numeric flow objective.</p> <p>The LSJR narrative flow objective is an expression of desired flow and biological conditions in the LSJR and three east-side tributaries.</p> <p>Narrative criteria are written in various ways but they commonly address two general components 1) a description of the resource to be protected and/or a resource protection goal and 2) one or more statements describing the hydrologic condition needed to be maintained to achieve the protection goal.</p> <p>The terms in the LSJR narrative objective are specific with precise scientific and dictionary definitions and the overall statement of desired conditions is not vague. The LSJR narrative flow objective identifies the desired flow condition by establishing that flows need to be sufficient for supporting and maintaining the natural production of viable native SJR watershed fish populations migrating through the Delta. It is a fundamental rule of statutory construction that in the absence of a statutory definition, terms are given their usual and ordinary meaning. (Trope v. Katz (1995) 11 Cal.4th 274, 280.) The phrase "support and maintain" means that there must be enough flow to provide, and continue providing, a basis for the existence of fish populations. The Merriam-Webster Dictionary definition 3(b) of the word support means to provide the basis for the existence or subsistence of something (https://www.merriam-webster.com/dictionary/support).</p> <p>As the commenter acknowledges, the plain text of the narrative objective includes indicators to measure viability (Appendix K, Table 3). In addition, the plan amendments require, within 180 days from their</p>

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		<p>Appx. K, p. 18.) However, the indicators do not have any benchmarks that must be achieved to ensure viability. For instance, there is no indication as to what level of population abundance is needed to achieve viability. Likewise, there is no indication as to what level of distribution, structure, diversity or productivity is needed to achieve viability. Without a specific measure of success, these indicators are meaningless and open to varied interpretations.</p> <p>Third, the term "natural production" is not defined anywhere in the WQCP. Both of these words need to be defined. A reasonable interpretation of natural would be that hatchery fish are not included. However, it is unclear whether the offspring of hatchery fish would be considered natural. Similarly, it is unclear whether the offspring of a hatchery and non-hatchery fish would be considered natural.</p> <p>Fourth, the phrase "flows that mimic the natural hydrographic conditions" is similarly confusing and vague. The extent to which the natural hydrograph needs to be mimicked is unclear. Specifically, it is unclear whether mimicking a general trend is sufficient, or whether exact quantities are required.</p> <p>Fifth, the objective lacks clarity with regard to which fish populations are covered. Specifically, the Narrative Objective calls for the maintenance of inflow conditions from the San Joaquin River "sufficient to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta." (SED, at Appx. K, p. 18.) Although the SED discusses many fish species in Section 19, most of these species are not targeted by the objective, primarily because most species do not migrate through the Delta.</p> <p>Of the fish species listed in Section 7.2.1, the following do not fall within the protection of the Narrative Objective because they do not migrate from the three eastside tributaries to the Delta:</p> <p>*Late Central Valley fall-run Chinook salmon: Late Central Valley fall-run Chinook salmon do not occur on the three Tributaries. Late Central Valley fall-run Chinook Salmon are not a separate Evolutionarily Significant Unit ("ESU") or Distinct Population Segment ("DPS") from Central Valley fall-run Chinook salmon. There is no evidence of genetic differences between Central Valley fall-run Chinook salmon that arrive late and those that arrive early.</p> <p>*Spring-run Chinook salmon: There are no spring-run Chinook salmon on the three tributaries. The tributaries are not designated as critical habitat. Rule 4[d] of the Endangered Species Act ("ESA") is currently in effect for an experimental population under the San Joaquin River Restoration Program ("SJRRP"). The SJRRP and its flows are not in the Plan Area and are not evaluated.</p> <p>*Green sturgeon: Do not migrate from the tributaries.</p> <p>*Delta smelt: Do not migrate from the tributaries.</p> <p>*Longfin smelt: Do not migrate from the tributaries.</p> <p>*Sacramento split-tail: Do not migrate from the tributaries.</p> <p>*Kern Brook lamprey: Do not migrate from the tributaries.</p>	<p>approval by the Office of Administrative Law, the development of biological goals for abundance; productivity as measured by population growth rate; genetic and life history diversity; and population spatial extend, distribution and structure. In addition, Appendix K is clarified in to reflect that the biological goals should be specific, measurable, and achievable. Please see Master Response 2.1, Amendments to the Water Quality Control Plan and Master Response 3.1, Fish Protection, regarding biological goals.</p> <p>The phrase natural production is unambiguous: it refers to fish spawned and reared in nature as opposed to spawned and reared in a fish hatchery. The term "natural production" is commonly used with respect to salmonids ("natural production during the baseline period [is] that portion of production not produced in hatcheries" and "production [is] the number of fish that recruit to adulthood..." (USFWS 1995).</p> <p>The commenter quotes the narrative objective with respect to flows mimicking natural hydrologic conditions, but omits part of the phrase. The full quote from the narrative objective is "flows that more closely mimic the natural hydrographic conditions to which native species are adapted" (emphasis added). When viewed in its entirety, the plain language does not mean "exact quantities are required." Instead, the narrative objective and numeric objectives are complementary. The numeric objective is based on unimpaired flow, which captures the natural pattern of variability and retains attributes of the natural flow regime. Please see Master Response 3.1, Fish Protection, regarding the unimpaired flow approach.</p> <p>The purpose of the narrative objective is to protect fish and wildlife beneficial uses. The comment states that unless species migrate they do not "fall within the protection of the narrative objective" but provides no support for that premise. Chapter 7, Aquatic Biological Resources and Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow Between February 1 and June 30, both describe the how the narrative objective, together with the numeric objective, will create environmental conditions that more closely mimic the natural flow regime to which native fish are adapted including, but not limited to, salmonids. Fish and wildlife are not required to fall "within" the narrative objective to benefit nor are they exempted from benefit if they do not migrate.</p> <p>As stated in Chapter 19, fall-run Chinook salmon are a key indicator species of environmental health as the eastside tributaries are salmon-bearing but have "had larger reductions in the natural production of adult fall-run Chinook salmon than any of the other tributaries." The program of implementation, Biological Goals, recognizes salmonids as "among the fish species most sensitive to LSJR flow modifications." Restoration of a more natural flow regime for these sensitive species will help provide reasonable protection to other native fish and wildlife that are likewise adapted to hydrologic variability and create an environment that is less hospitable to non-native fish that compete with and predate on native fish. (See Chapter 19, Appendix C, and Master Response 3.1, Fish Protection, for additional discussion of benefits to native fish.)</p> <p>Please also refer to responses 3239-9, 3239-11, and 3239-12 regarding the narrative objective.</p>

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		<p>*River lamprey: Do not migrate from the tributaries.</p> <p>*California roach: Do not migrate from the tributaries.</p> <p>*Hardhead: Do not migrate from the tributaries.</p> <p>*Rainbow trout: Do not migrate from the tributaries.</p> <p>*Largemouth bass: Do not migrate from the tributaries.</p> <p>*White sturgeon: Do not migrate from the tributaries.</p> <p>*American shad: Do not migrate from the tributaries.</p> <p>*Kokanee: Do not migrate from the tributaries.</p> <p>Thus, it appears--but is not clear-- that of the fish species listed in Section 7.2.1, the Narrative Objective is only intended to protect Central Valley fall-run Chinook salmon, Central Valley steelhead (<i>Oncorhynchus mykiss</i>) and Pacific lamprey, as these are the native San Joaquin River watershed fish that migrate through the Delta.</p>	
3239	9	<p>The language of the Narrative Objective conflicts with Staff’s description of the effect of the regulation.</p> <p>The language of the Narrative Objective is unclear because it "conflicts with the agency’s description of the effect of the regulation." (Cal. Code Regs., tit., 1, § 16.) Specifically, the Narrative Objective states that flows should more closely mimic the natural hydrograph from February through June by bypassing or releasing a percentage of unimpaired flow from the Stanislaus, Tuolumne and Merced Rivers. (SED, at Appx. K, p. 18.) However, the proposed program of implementation states that the percentage of unimpaired flow may be treated as a "total volume of water" that is shifted to other times of the year and shaped in such a way that is deemed--by some unspecified standard--to be better for fish than flows which mimic the natural hydrograph. (SED, at Appx. K, p. 30-31.)</p> <p>State Water Board Staff has repeatedly referred to the flow requirement as a "block" or "budget" of water that can be shifted or shaped, rather than an unimpaired flow requirement that tracks the natural hydrograph. [Footnote 4: Transcript of Public Hearing before the SWRCB, November 29, 2016, p. 14, Ins. 5-7 [Chair Marcus: Staff conceive the proposal "as a block of water that they hope groups will come together to shape and use in the most effective way as possible."]; Transcript of Public Hearing before the SWRCB, November 29, 2016, p. 26, Ins. 15-20 [Les Grober: "So it’s not intended to be rigid adherence with say a flat 40 percent. But you can use that as a block of water for that February through June time period, so that you can have a much higher amount to achieve a pulse flow as makes sense and less at other times."]; Transcript of Public Hearing before SWRCB, December 16, 2016, p. 31, Ins. 21-23 ["It’s intended to provide some of the natural variability, but also a budget of water that can be shifted."]; Transcript of Public Hearing before SWRCB, January 3, 2017, p. 28, ln. 10 [Les Grober: "but it’s also a block of water that can be used to the benefit of fish and wildlife."]]</p> <p>In comparing the unimpaired flow approach and the block of water approach, State Water Board Staff has explicitly stated, "you can’t do both those things . . ." (Transcript of Public Hearing before SWRCB, January 3, 2017, p. 27, Ins. 22-23.) Given these descriptions, it is</p>	<p>Please see Master Response 2.2, Adaptive Implementation, regarding the percent of unimpaired flow and the block of water or water budget approach in adaptive implementation and how adaptive implementation can be implemented. The flow shaping and flow shifting allowed under the program of implementation do not eliminate the benefits obtained by more closely mimicking the natural hydrograph. Rather, flow shaping and shifting will enhance many aspects of the natural hydrograph that are most functionally useful. The numeric February through June LSJR flow objective of 40 percent unimpaired flows in an adaptive range of 30 to 50 percent of unimpaired flows works together with the narrative objective. Since only a portion of the total unimpaired flow will be available for fish and wildlife, flow shaping allows short duration and higher magnitude flows to achieve the best possible biological responses using a limited quantity of water. Under current conditions, flows in most years are relatively flat, with no high flows during the February through June period. Even if flows under the flow proposal are shifted so that flows do not fully track the pattern of unimpaired February through June flows, the general pattern of higher February through June flows will still "more closely mimic the natural hydrographic conditions to which native fish species are adapted." Please see Master Response 2.2, Adaptive Implementation, for examples of how ecosystem functions can be improved by flow shaping and flow shifting.</p> <p>The comment cites a quote from SWB staff that is provided in response to a question from a SWB Board member. This quote is referring to tracking the hydrograph on a 7-day running average and shaping flows as a block of water. The quote means that you cannot rigidly adhere to the hydrograph on a 7-day running average with 40% unimpaired flow and shape flows at the same time. SED Appendix K states and Master Response 2.2, Adaptive Implementation, further explains that adherence to the 40% unimpaired flow on a 7-day running average or shaping flows for an increased biological response with the same volume of flow are two methods to implement the objective. The quote simply states that the two methods cannot be simultaneously implemented.</p>

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		<p>apparent that the Narrative Objective is unclear and unlawful because "the language of the regulation conflicts with the agency's description of the effect of the regulation." (Cal. Code Regs., tit. 1, § 16.)</p>	
3239	10	<p>The Narrative Objective uses terms which do not have meanings generally familiar to those directly affected by the regulation.</p> <p>The terms "support and maintain," "natural production," "viable," and "mimic the natural hydrographic conditions" are not defined in the WQCP. These terms do not have standard or consistent definitions within the regulated community, i.e., within the irrigation districts and water service providers that will be directly affected by the proposed project. The absence of any meaningful definition of these terms in the WQCP leaves the regulated community at a loss as to what must be accomplished to comply with the objective. For this reason, the Narrative Objective amounts to an unclear and unlawful regulation. (Cal. Code Regs., tit. 1, § 16[a][3].)</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the required LSJR flow requirements, the narrative and numeric flow objective.</p> <p>Please refer to response 3239-8, 3239-9, 3239-11, and 3239-12.</p>
3239	11	<p>The Narrative Objective is impermissibly vague.</p> <p>In addition to being unlawful for lack of clarity, the Narrative Objective is also impermissibly vague. Due process protections proscribe the enforcement of vague regulations like the Narrative Objective. (Cranston v. City of Richmond (1985) 40 Cal.3d 755 ("Cranston").) Similar to the clarity standard, due process precludes enforcement of a regulation based upon impermissible vagueness when the regulated party "could not reasonably understand that [their] contemplated conduct is proscribed." (Cranston, at 764.) The ambiguous terms, such as support, viable, natural production and mimic, make the Narrative Objective so vague the regulated community would not be able to understand whether their conduct is proscribed or authorized. To remedy this problem, the Narrative Objective needs to incorporate metrics by which the regulated community--and the regulators--can measure success or failure. As written, it will be impossible to determine if compliance has been achieved.</p>	<p>Adoption of the plan amendments, including the program of implementation, does not impose enforceable requirements on any entities and therefore does not violate due process. The plan amendments and Bay-Delta Plan make it clear that the State Water Board will require implementation of the LSJR flow objectives, pursuant to the program of implementation, in water right and water quality actions, both of which are directly enforceable. Please see Master Response 1.2 regarding authorities related to the Water Quality Control Planning Process for additional explanation.</p> <p>Please also see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the required LSJR flow requirements, the narrative and numeric flow objective. Please also refer to response 3239-8 regarding the terms used in the narrative objective.</p>
3239	12	<p>The Narrative Objective will not protect beneficial uses.</p> <p>The objectives must "ensure the reasonable protection of beneficial uses." (Water Code, § 13241.) Although the WQCP identifies numerous beneficial uses to be protected by the Narrative Objective, the objective will not protect those uses.</p> <p>Specifically, the objective provides no protection for cold or warm freshwater habitats (COLD and WARM). The language focuses solely on inflow to the Delta and does not include a water temperature component of any kind. Second, by focusing solely on inflows necessary to support native migratory San Joaquin River fish populations, the objective ignores all other conditions and components that are necessary to protect estuarine and wildlife habitat (EST and WILD), migration of aquatic organisms (MIGR), spawning, reproduction and/or early development of fish (SPWN), and rare, threatened or endangered species (RARE).</p> <p>The Narrative Objective lists conditions that will reasonably contribute towards maintaining viable native migratory San Joaquin River fish populations, but the list is extremely limited in scope, focusing exclusively on "flows that more closely mimic the natural hydrographic conditions . . . including the relative magnitude, duration, timing, and spatial extent of flows</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the required LSJR flow requirements, the narrative and numeric flow objective, biological goals and justification of the plan amendments. Please also refer to response 3239-8.</p> <p>Flow is the regulatory parameter for LSJR plan amendments because current flows are insufficient to protect fish and wildlife beneficial uses in the LSJR, increased flows improve river conditions and other instream habitat elements for fish, and flow is uniquely within the State Water Board's authorities to regulate. 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. See Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives; Executive Summary; Chapter 1, Introduction; and Chapter 3, Alternatives Description, for more information.</p> <p>Please refer to Master Response 5.2, Incorporation of Non-Flow Measures, for responses to comments regarding State Water Board authority to require and enforce implementation of non-flow actions. Thus, the plan amendments' focus on flow objectives and measures is in keeping with the State Water Board's authority and responsibility to protect the quality of the waters of the state and the beneficial uses of those waters. (Wat. Code, §§ 13000-13002, 13240, 13241, and 13050, subd. (g), (h), (i) and (j).) As a physical</p>

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		<p>as they would naturally occur." (SED, at Appx. K, p. 18.)</p> <p>Critically, the list fails to include any non-flow measures, such as predator control, changes in salmon ocean harvest regulations, changes in hatchery operations, and floodplain habitat restoration work. The omission of any non-flow measures in the objective renders it insufficient to protect the beneficial uses. The SED states, "flow alone cannot solve the many issues that native fish populations face in the SJR Watershed. To reach the goal of achieving and maintaining viable populations of native fish, many other non-flow actions must be taken." (SED, at 19-88 [internal parentheses omitted].)</p> <p>While the SED notes that the program of implementation identifies non-flow measures that should be taken to achieve the Narrative Objective (Ibid.) those measures should be identified in the objective itself in the same way that the flow measures are identified. A program of implementation need only describe the actions "necessary to achieve the objectives." (Water Code, § 13242.) If both flow and non-flow measures are needed to protect the beneficial uses (SED, at 19-88), then the Narrative Objective should contain a list of necessary non-flow measures as well. Without a list of the necessary non-flow measures, the Narrative Objective will not protect the beneficial uses.</p> <p>Moreover, history demonstrates that the Board will not implement non-flow measures if they are not included as objectives. The 2006 Water Quality Control Plan includes several non-flow measures in its plan of implementation. These measures include installation of screening facilities on diversions, modification of existing commercial and sport fishing regulations, expansion of the illegal harvest program, improvement of hatchery programs, and expansion of gravel replacement and maintenance. (2006 Bay Delta Plan, at 34-37.) However, the State Water Board never took any action to implement these measures, nor did it encourage other agencies to implement the measures.</p> <p>Narrative Objective Summary</p> <p>As the Narrative Objective is both unclear and insufficient to protect the beneficial uses identified in the WQCP, the Board should decline to adopt it.</p>	<p>attribute related to the quality of water, flow and the functions it provides are critical in protecting fish and wildlife beneficial uses. The State Water Board, however, recognizes the importance of non-flow measures in complementing flow to protect these uses. Accordingly, the proposed plan amendments include recommendations for non-flow measures, which, along with the coordinated and adaptive implementation of the LSJR flow objectives, are expected to improve habitat conditions that benefit native fish and wildlife or improve related science and management within the LSJR Watershed.</p> <p>The narrative and numeric LSJR flow objectives work together to improve protection of fish and wildlife beneficial uses in the LSJR watershed. The SED analysis shows substantial improvement in temperature profiles that support cold water fish habitat for indicator species. Please refer to SED Chapter 7, Aquatic Biological Resources, 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 fish benefits that result from the plan amendments.</p>
3239	13	<p>The Tributary Flow Objective</p> <p>The Tributary Flow Objective in the water quality control plan is as follows: "A percent of unimpaired flow between 30%-50%, inclusive, from each of the Stanislaus, Tuolumne and Merced Rivers shall be maintained from February through June" in accordance with a "[m]inimum 7-day running average flow rate." (SED, at Appx. K, p. 18.) Unimpaired flow is defined as "the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds." (SED, at Appx. K, p. 20 [fn. 14].)</p> <p>The Tributary Flow Objective lacks clarity in several key respects.</p>	<p>Please see response to comment 3239-6 regarding changes made to the LSJR flow objectives in Appendix K, Table 3 to increase clarity.</p> <p>Please also refer to responses 3239-14, 3239-15, 3239-16, 3239-17, 3239-18, 3239-21, and 3239-22.</p>
3239	14	<p>Relationship between the Narrative Objective and the Tributary Flow Objective is not clear.</p> <p>Staff suggests that the Tributary Flow Objective (and the adaptive adjustments that can be made thereto) is in place to further the Narrative Objective. (SED, at Appx K, p. 30.) However, it is unclear whether compliance with the Tributary Flow Objective alone is intended to constitute compliance with the Narrative Objective, or whether the Narrative</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the narrative and numeric LSJR flow objectives, calculating unimpaired flow, percent unimpaired flow, compliance methods, and modifications to the plan amendments.</p> <p>Compliance with the percent of unimpaired flow from February through June in each river is determined by dividing the 7-day average observed flow at the compliance stations (SED Appendix K Table 3) by the 7-day</p>

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		<p>Objective might be unachieved despite compliance with the Tributary Flow Objective. It is also unclear whether other measures are required or otherwise intended to meet the Narrative Objective. For these reasons, Staff must revise the WQCP to more clearly explain the relationship between the Narrative Objective and the Tributary Flow Objective.</p>	<p>average calculated Full-Natural-Flow (FNF) at the FNF stations. Refinements to methods and measurements used to estimate Full-Natural-Flow can be used for compliance if refinements improve accuracy and precision of Full-Natural-Flow estimates.</p> <p>The narrative and numeric LSJR flow objectives work together to improve protection of fish and wildlife beneficial uses in the LSJR watershed. Implementation of the LSJR flow objectives through regulation, water rights and/or water quality actions includes enforceable requirements on multiple entities to bypass flows sufficient to meet the percent of unimpaired flow objective as stated in SED Appendix K Table 3 or approved adaptive adjustments. The narrative objective and approved biological goals will be used to guide operations plans that identify actions to provide flows to meet the percent of unimpaired flow objective as stated in SED Appendix K Table 3 and/or adaptive adjustments that best support the narrative objective. Please refer to Master Response 2.2, Adaptive Implementation, for additional information regarding adaptive adjustments, operations, plans, and examples of using the narrative and numeric LSJR flow objectives together to improve protection of fish and wildlife beneficial uses in the LSJR watershed.</p> <p>Attainment of the narrative and numeric LSJR flow objectives in the Bay-Delta Plan requires actions by many entities. Compliance with the LSR flow objectives is a broad determination based on the actions of multiple entities. Compliance with the numeric LSJR flow objectives will be determined using flow monitoring data. Compliance methods are described in SED Appendix K, Table 3 and further explained in Master Response 2.2, Adaptive Implementation, and Master Response 3.2, Surface Water Analyses and Modeling. Broad, watershed compliance with the narrative LSJR flow objectives will be determined using monitoring data and biological goals for purposes of evaluating efficacy of the flow objectives and assessment under Clean Water Act section 303(d).</p> <p>Adoption of the plan amendments, including the program of implementation, does not impose enforceable requirements on any entities. The nature and extent of water right holders' responsibilities to meet the LSJR flow objectives will be determined in a future water rights or water quality proceeding (See SED Appendix K, Chapter IV, Program of Implementation). Compliance methods and responsibilities for water rights, water quality, and/or regulation, will be determined in these future proceedings.</p>
3239	15	<p>The relationship between the Tributary Flow Objective and the Vernalis Flow Objective is unclear.</p> <p>It is unclear whether flows from the upper San Joaquin River will be counted for purposes of determining compliance with the Vernalis requirement, or whether only flows from the three eastside tributaries will count towards the Vernalis requirement. In the SED, Staff seems to assume that flows from upstream of the Tributaries will contribute to flows at Vernalis. (SED, at 5-1.) However, Appendix K states that the Tributary Flow Objective is "in addition to flows in the Lower San Joaquin River from sources other than the Lower San Joaquin River tributaries," and "[w]hen the percentage of unimpaired flow requirement is insufficient to meet the minimum base flow requirement" at Vernalis, then the three eastside tributaries must contribute additional flows to maintain the required based flow at Vernalis. (SED, at Appx. K, p. 29.)</p> <p>Since only the tributaries contribute to the unimpaired flow requirement, it is not clear whether flows from the upper San Joaquin River will go to meet the Vernalis flow requirement or whether the requirement is in "addition" to upstream flows. For these reasons, the relation between the Tributary Flow Objective and the Vernalis Flow Objective is not clear and the regulated community cannot reasonably interpret the two regulations together.</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 2.2, Adaptive Implementation, for responses to comments regarding the project description, relationship between the narrative and numeric LSJR flow objectives and the plan area, specifically the upper San Joaquin River watershed.</p> <p>Adoption of the plan amendments, including the program of implementation, does not impose enforceable requirements on any entities or any member of the regulated community.</p> <p>The numeric LSJR flow objective compliance points are on the three eastside tributaries and do not include any flows from the upper SJR watershed. San Joaquin River flow at Vernalis includes water already in the lower SJR and water from the three eastside tributaries. Please see response to comment 3239-6 regarding clarification of the base flow requirement in Appendix K, Table 3. The base flow requirement will be engaged, likely in critically dry years, when despite implementation of the unimpaired flow percentage flows in the San Joaquin River flow at Vernalis drop below 1,000 cfs. Under these conditions, the program of implementation requires the three tributaries to provide sufficient flows to maintain 1,000 cfs. The 1,000 cfs base flow at Vernalis can be adaptively implemented between 800 and 1,200 cfs.</p> <p>The plan amendments establish the desired condition of water quality in a specific area consistent with state and federal law. Please refer to Master Response 1.2, Water Quality Control Planning Process, for a description of the distinction between establishing water quality objectives in the Bay-Delta Plan and future</p>

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			implementation of the plan in a regulation, water rights, or water quality proceeding.
3239	16	<p>There is no agreement on how unimpaired flow is to be calculated.</p> <p>The WQCP defines "unimpaired flow" as "the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds." (SED, at Appx. K, p. 20.) At best, this definition allows for a generalized conceptualization of unimpaired flow. It provides no indication as to how unimpaired flow should be calculated. Instead, the WQCP defers this critical component to the Stanislaus, Tuolumne and Merced ("STM") Working Group, which is charged with creating annual adaptive operations plans that will "identify how unimpaired flows are calculated" (SED, at Appx. K, p. 34.)</p> <p>In order to provide clarity to the Tributary Flow Objective so that the regulated community can comply with the objective, the method of calculation for unimpaired flow needs to be set forth in the plan itself. There is currently no agreed upon method of calculation for unimpaired flow, and this critical issue cannot be deferred to an outside group which the Board has no authority to create or compel participation in.</p>	<p>Several changes are made to Appendix K in response to comments. These changes are made for clarity and consistency and do not substantively change the LSJR flow objectives or program of implementation from the Draft SED. These changes include clarifying language in Appendix K Table 3, footnote 14, that compliance with the percent of unimpaired flow from February through June in each river is determined by dividing the 7-day average observed flow at the compliance stations by the 7-day average calculated Full-Natural-Flow (FNF) at the FNF stations. Refinements to methods and measurements used to estimate Full-Natural-Flow can be used for compliance if refinements improve accuracy and precision of Full-Natural-Flow estimates.</p> <p>Please see Master Responses 2.1, Amendments to the Water Quality Control Plan, 2.2, Adaptive Implementation, and 3.2, Surface Water Analyses and Modeling, for additional information and responses regarding calculation of unimpaired flow and percent of unimpaired flow including, but not limited to, additional information concerning the locations of the California Data Exchange Center FNF Stations on the Stanislaus, Tuolumne, and Merced Rivers and the structure and role of the STM Working Group.</p>
3239	17	<p>The quantity of water subject to regulation is not clear.</p> <p>A regulation will be deemed unlawful for lack of clarity if it "presents information in a format that is not readily understandable by persons 'directly affected'" by it. (Cal. Code Regs., tit. 1, § 16[a][5].) A regulation will also be deemed unclear if it "conflicts with the agency's description of the effect of the regulation." (Cal. Code Regs., tit. 1, § 16[a][2].) The Tributary Flow Objective violates these rules because it fails to clearly state the amount of water that the SJTA member agencies will be required to refrain from diverting to satisfy the objective. The objective states that between 30% and 50% of unimpaired flow must be left instream for the benefit of fish and wildlife.</p> <p>However, the objective does not specify the exact percentage within that range that must remain instream. Accordingly, based upon a plain reading of the language, the objective would seemingly be satisfied by simply maintaining any percentage of unimpaired flow at the compliance point between 30% and 50%, based on a running average of 7 days or more. However, the proposed program of implementation ("POI"), which is not a regulation, confuses the matter. The POI states, "[t]he LSJR flow objectives for February through June shall be implemented by requiring 40 percent of unimpaired flow, based on a minimum 7-day running average, from each of the Stanislaus, Tuolumne, and Merced Rivers." (SED, at Appx. K, p. 29.)</p> <p>This plan to implement a 40% unimpaired flow requirement conflicts with the language of the objective, which is written so broadly that compliance can be achieved with as little as 30% unimpaired flow. Accordingly, the proposal to require 10% more unimpaired flow through the POI creates confusion, rather than clarity. Simply stated, "the language of the regulation conflicts with the agency's description of the effect of the regulation." (Cal. Code Regs., tit., 1, § 16[a][2].)</p> <p>The POI confuses the matter further by stating, "[t]his required percentage of [40%] unimpaired flow . . . may be adjusted within the range allowed by the LSJR flow objectives through adaptive methods . . ." (SED, at Appx. K, p. 29.) These adaptive adjustments to the flow requirements must be "approved by the State Water Board on an annual or long-term</p>	<p>Please see Master Responses 2.1, Amendments to the Water Quality Control Plan, regarding the project description, narrative, and numeric flow LSJR objectives and the program of implementation.</p> <p>Several changes were made to the LSJR flow objectives in SED Appendix K Table 3 Water Quality Objectives for Fish and Wildlife Beneficial Uses (Table 3) of the Bay-Delta Plan. These changes were made for clarity and consistency and do not substantively change the LSJR flow objectives from the Draft SED. Please see response to comment 3239-6 regarding clarification of the LSJR unimpaired flow objective.</p> <p>The plan amendments establish the desired condition of water quality in a specific area consistent with state and federal law. Please refer to Master Response 1.2, Water Quality Control Planning Process, for a description of the distinction between establishing water quality objectives in the Bay-Delta Plan and future implementation of the plan in a regulation, water rights, or water quality proceeding.</p>

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		<p>basis, or by the Executive Director . . . if all members of the Stanislaus, Tuolumne, and Merced Working Group (STM Working Group) . . . agree to the changes. (SED, at Appx. K, p. 30.)" (SED, at Appx. K, p. 30.)</p> <p>Thus, it appears that the range set forth in the objective is not a range of compliance that the regulated community must achieve, but rather a range that the regulators must stay within while continually modifying the required percentage of unimpaired flow that the regulated community must achieve. The purpose of setting objectives in a water quality control plan is to clearly set forth regulations with which the regulated community must comply (see generally Government Code, § 11353[b][4]; § 11349.1[a]), not to create a broad range that the regulators must comply with as they continually modify the regulation without further oversight by OAL.</p>	
3239	18	<p>The flow rate calculation is not clear.</p> <p>The method for calculating the required amount of unimpaired flow is unclear. The objective states that the chosen percentage of unimpaired flow must be maintained based upon a minimum 7-day running average. (SED, at Appx. K, p. 18.) A plain reading of this requirement indicates that the unimpaired flow percentage must be calculated using a running average of 7 days or more. Unlike the unimpaired flow percentage which has an upper and lower boundary (i.e., 30% and 50%), this requirement has only a lower boundary (i.e., 7 days).</p> <p>Standing alone, this characteristic does not make the objective unclear; the regulated community could achieve compliance by using any running average of at least seven days. However, other aspects of the requirement create significant confusion. For instance, it is unclear how the running average should be calculated during the first six days of the Feb.-June time period. Prior to February 7th, there will not be a sufficiently long historical record of unimpaired flows during the Feb.-June period to calculate a 7-day running average within the regulated time period.</p> <p>While it may be the regulators' intent that the initial running average be calculated using unimpaired flow data from January and the year before, that intent is not made clear in the WQCP. Moreover, if this is the intent of the regulators, then the absence of an upper boundary on the running-average requirement would theoretically allow for a calculation using unimpaired flow rates that date back to July of the previous year, when unimpaired flow is at its lowest due to minimal summer precipitation and runoff. While such a computation would be permissible under a plain reading of the Tributary Flow Objective, it would be antithetical to the Narrative Objective which prioritizes flows that mimic natural hydrographic conditions.</p> <p>The program of implementation creates further confusion regarding the minimum 7-day running average component of the Tributary Flow Objective. The POI states that the required percentage of unimpaired flow from February to June "may be managed as a total volume of water" and "released on an adaptive schedule," rather than on a minimum 7-day running average of unimpaired flow. (SED, at Appx. K, p. 30.) However, the POI does not explain how the "total volume of water" (also known as a block or budget of water) will be calculated. While estimates of precipitation and snowmelt runoff can be made in February, such early estimates are frequently inaccurate. Moreover, the authority to make this change to the objective is granted to the Executive Director, provided that s/he receives a recommendation from "one or more members of the STM Working Group." (SED, at Appx.</p>	<p>Please see Master Responses 2.1, Amendments to the Water Quality Control Plan, 2.2, Adaptive Implementation, and 3.2, Surface Water Analyses and Modeling, for additional information and responses to comments regarding calculation of unimpaired flow and percent of unimpaired flow.</p> <p>The modifiers "minimum" and "maximum" in SED Appendix K Tables 1 through 3 apply to the unit for the water quality parameter. The parameter in Table 3 for the LSJR flow objective is flow rate. The description for the LSJR flow objective is minimum 7-day running average flow rate (cfs) for February through June. The modifier "minimum" applies to the entire phrase "7-day running average flow rate." The modifier "minimum" does not apply to the averaging period. The modifier "minimum" applies to the flow rate as calculated from measurement data on a 7-day running average. This interpretation has been successfully applied to objectives in Tables 1 through 3 since 1995 and no change is necessary for the LSJR plan amendments. Table 3 Footnote 2 provides an explanation for calculating the running average. It states, "Determination of compliance with an objective expressed as a running average begins on the last day of the averaging period. The averaging period commences with the first day of the time period of the applicable objective. If the objective is not met on the last day of the averaging period, all days in the averaging period are considered out of compliance."</p> <p>Adoption of the plan amendments, including the program of implementation does not impose enforceable requirements on any entities, even though state agencies are generally obligated to comply with water quality control plans. (Id., § 13247.)</p> <p>Compliance with or attainment of water quality objectives in the Bay-Delta Plan is distinct from compliance with directly enforceable obligations on specific entities contained in water rights permits, water quality certifications, or regulation. The nature and extent of water right holders' responsibilities to meet the LSJR flow objectives will be determined in a future regulation, water rights or water quality proceeding (See SED Appendix K, Chapter IV, Program of Implementation). Compliance methods and responsibilities for water rights, water quality, and/or regulation, will be determined in these future proceedings.</p> <p>The plan amendments establish the desired condition of water quality in a specific area consistent with state and federal law. Please refer to Master Response 1.2, Water Quality Control Planning Process, for a description of the distinction between establishing water quality objectives in the Bay-Delta Plan and future implementation of the plan in a regulation, water rights, or water quality proceeding.</p> <p>Please refer to Master Response 2.2, Adaptive Implementation, for responses to comments and additional information regarding adaptive adjustments and shaping flows and how adaptive implementation can be implemented. The percent of unimpaired flow and adaptive adjustments are designed to meet the overall goals of the plan amendments. The flow shaping and flow shifting allowed under the program of implementation are not in conflict with or eliminate the benefits obtained by mimicking the natural</p>

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		<p>K., p. 18.) The plan does not specify what action the Executive Director should take if one member of the STM Working Group recommends the change, but all others recommend against it.</p> <p>Moreover, unlike the unimpaired flow percentage requirement, which has a range that the Executive Director must work within, the authority granted to the Executive Director to deviate from the minimum 7-day running average is unchecked by anything other than his or her own assessment as to whether "scientific information" indicates that another flow pattern would "better protect fish and wildlife beneficial uses." (SED, at Appx. K., p. 30.) This grant of authority to the Executive Director and the STM Working Group renders the 7-day running average component of the objective uncertain and unclear.</p> <p>At the very least, the language of the regulation (which speaks in terms of unimpaired flow based on a running average) conflicts with the agency's description of the effect of the regulation, insofar as the agency states that the water will be managed as a "total volume of water" that is "released on an adaptive schedule" with no requirement of adhering to a running average of any kind. (Cal. Code Regs., tit., 1, § 16[a][2] [a regulation is presumed to be unclear if "the language of the regulation conflicts with the agency's description of the effect of the regulation"].)</p>	<p>hydrograph as the commenter asserts. Flow shaping and shifting will enhance many aspects of the natural hydrograph that are most functionally useful and target the best biological response with the available volume of water.</p>
3239	19	<p>WSE modeling makes the Tributary Flow Objective unclear.</p> <p>The Tributary Flow Objective requires the maintenance of between 30% and 50% unimpaired flow on each of the Stanislaus, Tuolumne and Merced Rivers from February through June, based upon a minimum 7-day running average. (SED, at Appx. K, p. 18.) The analysis Staff presents in the SED does not portray an accurate implementation of these objectives. Instead, the analysis assumes the implementation of numerous operational constraints that are not required by the Tributary Flow Objective and, in some cases, contradict the Tributary Flow Objective, thereby making the objective unclear to the regulated community. The unrequired operational assumptions are as follows.</p> <p>Flow Shifting</p> <p>The Tributary Flow Objective requires the maintenance of a percentage of unimpaired flow from February through June. The Water Supply Effect ("WSE") model used in the SED assumes that when the required unimpaired flow percentage is 40% or higher, some of the required instream flows (not to exceed 25% of the total quantity of instream flow required from Feb.-June) will be shifted to the July-November period, mostly in wet years. (SED, at Appx. F1, p. F.1-13, F.1-17, F.1- 36-38, F.1-43-45.) In the SED, this modeling assumption is referred to as flow shifting. Staff also used another type of flow shifting in the SalSim model, where a full 25% of the required unimpaired flow from February through June was shifted to the months of September-December in all water years. (SED, at 19-80.)</p> <p>The document acknowledges that flow shifting is "not part of the unimpaired flow objective." (Ibid.) Nevertheless, it is used in the modeling "to provide temperature control, to reduce the likelihood of negative effects [on fish and wildlife], and to increase the overall potential benefit" of the objectives. (SED, at Appx. F1, p. F.1-17.) Flow shifting contradicts the Tributary Flow Objectives by (1) requiring flows outside the February through June time period, and (2) reducing the amount of unimpaired flow required during the February through June period to a lower percentage than would otherwise be required by the objective. It is unclear from the WQCP whether the regulated community should comply</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the definition of the narrative and numeric LSJR flow objectives. The percent of unimpaired flow is only one part of the plan amendments. Other components such as adaptive implementation (e.g., flow shifting) and minimum reservoir carryover storage targets or other requirements (e.g., operations to maintain carryover storage) are also part of the plan amendments as described in Appendix K, Revised Water Quality Control Plan, and are modeled in the SED analysis for comparative purposes consistent with the programmatic level of analysis. Please refer to Master Response 3.2, Surface Water Analyses and Modeling, for additional information regarding WSE modeling of the plan amendments and adaptive implementation.</p> <p>The comment does not correctly characterize adaptive implementation method 3, also referred to as "flow shifting." As stated in Appendix K, Revised Water Quality Control Plan, flow shifting is available when the unimpaired flow percentage is greater than 30% not, as stated in the comment, "40% or higher." Flow shifting does not contradict the tributary flow objective but is part of the program of implementation for the both the narrative and numeric objectives, which work together to provide reasonable protection for fish and wildlife beneficial uses. Although the actual degree of flow shifting will depend upon the annual operations, the percent of unimpaired flow remains a set volume of water starting at 40 percent that can be modified within a range of 30-50 percent under adaptive implementation method 1. Please see Master Response 2.2, Adaptive Implementation, for more explanation.</p> <p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, LSJR Flow Program of Implementation, for an explanation of the difference between carryover storage targets or other requirements in the program of implementation and the use of carryover assumptions in order to credibly represent how the plan amendments could be implemented for purposes of evaluating environmental impacts.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, for information about modeling of reservoir operations and modeling with a monthly time step and minimum reservoir storage. The WSE is a model used in the SED to describe and compare the water supply effects of the baseline and LSJR flow alternatives. Current stream flow requirements from other agencies are part of baseline for the purpose of comparative analysis. Modeling, modeling assumptions, comparison of modeling results, and/or significance</p>

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		<p>with the objectives which do not require flow shifting (and which will supposedly harm beneficial uses), or with the flow shifting modeling assumptions that are purportedly needed to ensure that the objectives do not adversely impact fish and wildlife.</p> <p>Minimum Reservoir Storage</p> <p>The Tributary Flow Objective requires the maintenance of a percentage of unimpaired flow on the Stanislaus, Tuolumne and Merced Rivers, irrespective of how those flows might impact reservoirs on those rivers. However, the analysis in the SED assumes that reservoirs will be operated in such a way that adherence to the Tributary Flow Objective will not result in a drawdown of storage in New Melones Reservoir, New Don Pedro Reservoir and Lake McClure below certain points. (SED, at Appx. F1, p. F.1-2.) This minimum reservoir storage assumption is needed "to minimize impacts on instream temperature that would be caused by lower reservoir levels and a limited coldwater pool." (SED, at Appx. F1, p. F.1-31.)</p> <p>According to the SED, the minimum reservoir targets "do not represent regulatory requirements of how the reservoir storage and use system must be operated . . ." (SED, at Appx. F1, p. F.1-31, fn. 4.) In fact, the SED explicitly states, "[t]hese operational constraints, as components of modeling simulations, do not by themselves comprise a plan of implementation or otherwise carry the weight of regulatory requirements." (SED, at Appx. F1, p. F.1-31.) However, after the release of the SED, Staff has taken the opposite position, insisting that minimum reservoir storage is "very much a part of the project." (Transcript of Public Hearing before SWRCB, January 3, 2017, p. 22, ln. 17.) This contradiction creates confusion as to whether carryover storage--which is not included in the objectives--is nevertheless intended to constitute a requirement with which the regulated community must comply.</p> <p>Refill Criteria</p> <p>The analysis in the SED assumes that when the required unimpaired flow percentage is 40 percent or higher, reservoir withdrawals will be restricted if reservoir levels are below a certain point. This assumption is not required by the Tributary Flow Objective, but it is included in the modeling of the Tributary Flow Objectives so that "coldwater pools recover more quickly after a drought," thereby avoiding adverse temperature impacts. (SED, at Appx. F1, p. F.1-32.) The inclusion of this modeling assumption creates confusion as to whether the regulated community must comply with the refill criteria or not.</p> <p>Minimum Base Flows</p> <p>If adherence to the unimpaired flow requirement in the Tributary Flow Objective results in instream flows dropping below current instream requirements (such as instream flow requirements contained in Federal Energy Regulatory Commission ("FERC") licenses or in Biological Opinions issued as part of a Section 7 consultation under the Endangered Species Act), then the analysis in the SED assumes that the current regulatory requirements will be followed, rather than the Tributary Flow Objective. (SED, at Appx. F1, p. F.1-13.) The "[p]roposed percentages of unimpaired flow are considered an additional requirement, and thus the greater of either the baseline flow requirements or the unimpaired flow requirement was selected for each month" for modeling purposes. (Ibid.)</p> <p>However, these minimum flows are not included in the objectives and could be changed at any time through separate legal processes. It is unclear from the SED whether the regulated</p>	<p>determinations based on modeling in the SED do not impose enforceable obligations that require individual compliance by specific entities in the regulated community. The SED is not a permit; the SED does not impose enforceable flow requirements on specific entities that require compliance with flow objectives in the Bay-Delta Plan or other flow obligations required by other regulatory agencies (e.g., flow requirements in a Biological Opinion, FERC license, or Clean Water Act 401 certification). The SED analysis, including modeling, does not change enforceable compliance requirements for the regulated community.</p> <p>As described in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, three different 40 percent unimpaired flow scenarios are run through the SalSim model to show that under flow shifting scenarios, increases in total adult production can be further improved with refined flow, reservoir storage, and temperature management. However, it is important to understand the limitations of SalSim, and the limitations of making optimized temperature and flow modeling runs and then inputting those results into SalSim. Chapter 19 provides a use advisory for SalSim, and specifically describes the limitations of SalSim and the limitations of optimized modeling runs. Please also see Master Response 3.1, Fish Protection, regarding the State Water Board's limited use of SalSim, and the acknowledgement of limitations of the model.</p> <p>The commenter also expressed concern regarding minimum flows required by other agencies. Adoption of LSJR flow objectives (minimum and tributary requirements) does not impose enforceable requirements on entities to comply with the plan amendments. Assigning responsibility to meet the plan amendments requires a specific exercise of the State Water Board's authority to impose enforceable obligations on specific entities in water rights permits and licenses. This water rights proceeding will occur after adoption of the plan amendments. At that time, any compliance requirements will be made clear in water rights, licenses, water quality certifications, and/or regulation. Please refer to Master Response 1.2, Water Quality Control Planning Process, for additional information regarding the distinction between adopting the plan amendments and implementation through water rights proceedings.</p>

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		<p>community should comply with Tributary Flow Objective or the minimum flows that are incorporated into the modeling. This confusion will create a significant problem if the current instream requirements that were modeled are ever changed through separate processes.</p> <p>Monthly Modeling</p> <p>The Tributary Flow Objectives require that flows be maintained on the Stanislaus, Tuolumne and Merced rivers based upon a 7-day running average. (SED, at Appx. K, p. 18.) Adhering to a 7-day running average means that flows will change on a daily basis. Despite the fact that daily modeling programs are available, the analysis in the SED used a monthly model, where flows remain the same over the course of an entire month. Specifically, "the WSE model calculates monthly flow targets for each eastside tributary based on the existing regulatory minimum flow schedules or user-specified percent of unimpaired flow." (Ibid.) The SED states, "[t]he February-June minimum instream flow requirement is calculated as a percentage of that month's unimpaired flow, for each month in February-June." (Ibid.)</p> <p>The difference between a daily model and a monthly model is striking. The following hypothetical demonstrates the discrepancies. Assume that in the month of March there is 60,000 acre-feet of unimpaired flow on the Stanislaus River. A monthly model would spread the 60,000 acre-feet evenly across the entire 31 days of March, resulting in approximately 2,000 acre-feet of water per day. Using a conversion rate of 1 cfs = 2 acre-feet/day, the flow rate would be approximately 1,000 cfs for the entire month. Assuming an unimpaired flow requirement of 40 percent, the model would assume releases of 400 cfs every day in the month of March (40% of 1,000 cfs). This assumption would remain in place even if total inflow during the first 10 days of March was 50,000 acre feet (i.e., 5,000 acre feet per day, or 2,500 cfs), and total inflow during the last 20 days was a mere 10,000 acre feet (i.e., 500 acre feet per day, or 250 cfs). If these flows were modeled based on the required 7-day running average, then the unimpaired flow requirement on March 7 would be 1,000 cfs (i.e., 40% of 2,500 cfs), while the unimpaired flow requirement on March 17 would be 100 cfs (i.e., 40% of 250 cfs). This result is drastically different than the steady 400 cfs under the monthly model.</p> <p>The following graph [ATT11] shows the difference between using a monthly model and a daily model. The dark red and dark blue lines depict flows on the Tuolumne River at Modesto and LaGrange, respectively, in 1978 using the Tuolumne River Daily Flow model. [Footnote 5: Additional examples of the inconsistency between monthly and daily flow modeling is presented in the comments submitted by MID and TID.] The light red and light blue lines depict flows at Modesto and LaGrange, respectively, in the same year using the monthly WSE model. It is evident from this graph that the monthly WSE model fails to capture the numerous high and low flow events that occurred in February, March and April of that year.</p> <p>The conflict between the minimum 7-day running average requirement and the monthly model used in the SED creates confusion as to which flow regime should be followed. This is particularly true because the supposed benefits of the project set forth in the SED are based on monthly modeling, and the "minimum" 7-day running average requirement would technically allow for a smoothing of the flows by using a 30, 60, or even 90-day running average that more closely mimics the SED's monthly model.</p>	

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3239	20	[ATT11: SJTA Figure 2-1. Graph of monthly vs. daily model results.]	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.
3239	21	<p>The time period of compliance is not clear.</p> <p>The objective states unimpaired flow will be required from February through June. However, the February-June component of the objective is made uncertain by the program of implementation. Specifically, the POI [program of implementation] states that "a portion of the February through June unimpaired flow may be delayed until after June" or even "until the following year." (SED, at Appx. K, p. 30-31.) The authority to make this change to the temporal component of the objective is again granted to the Executive Director, provided s/he receives a recommendation from one or more members of the STM Working Group. This grant of authority to the Executive Director and the STM Working Group to change the time period of the objective renders it uncertain and unclear. Again, the language of the regulation is in direct conflict to the agency's description of the effect of the regulation. (Cal. Code Regs., tit., 1, § 16[a][2].)</p> <p>It is also unclear when and to what extent flood flows will reduce the unimpaired flow requirement. The program of implementation states: "The required percentage of unimpaired flow does not apply to an individual tributary during periods when flows from that tributary could cause or contribute to flooding or other related public safety concerns as determined by the State Water Board or Executive Director through consultation with federal, state, and local agencies and other persons or entities with expertise in flood management." (SED, at Appx. K, p. 29.)</p> <p>The text states the unimpaired flow requirement would "not apply" when flows contribute to flooding. It is unclear whether the requirement would "not apply" to the localized area that was experiencing flood flows or if it would not apply to the entire tributary. It is unclear whether the requirement would "not apply" for a whole year or just until the flood risk subsided. It is unclear which public health and safety concerns would trigger the relaxation of the requirement. Therefore, the flood and public safety component of the regulation is not clear and the regulated community can reasonably interpret the regulation to have more than one meaning.</p>	<p>Please see Master Responses 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the project description. The time period of compliance is February through June. SED Appendix K, Implementation of LSJR Flow Objectives, explains that a portion of the block of water provided by the percent of unimpaired flow objective may be applied outside the February through June time period if the flow shifting action will prevent adverse effects to fisheries, including temperature, that would otherwise result from implementation of the February through June flow requirements. This does not change the requirement, it supports the narrative flow objective by preventing temperature impacts related to the implementation of the numeric flow objective. Moreover, the comment does not correctly characterize the authority to approve the adaptive implementation methods. Authority is not granted to the STM Working Group. It is granted to the State Water Board and the Executive Director. The Executive Director, prior to acting, must have either consensus of, or recommendation from one or members of, the STM Working Group, in accordance with each adaptive implementation method. Please refer to Master Response 2.2, Adaptive Implementation, for additional information regarding adaptive methods and their approval.</p> <p>The Bay-Delta Plan is a planning-level document and the program of implementation does not contain the specificity of localized areas of flooding identified in the comment. The statement regarding flood flows provides a framework for the next steps in the regulatory process. Subsequent State Water Board activities in the program, such as discretionary actions to implement the plan amendments, will be examined in light of the SED to determine whether an additional environmental document must be prepared. It is not necessary for the program of implementation to identify actions in each localized area that may experience flooding. Please refer to Master Response 1.1, General Comments, for additional information regarding planning-level documents.</p> <p>Adoption of the plan amendments, including the program of implementation does not impose enforceable requirements on any entities, even though state agencies are generally obligated to comply with water quality control plans. (Id., § 13247.)</p> <p>Compliance with or attainment of water quality objectives in the Bay-Delta Plan is distinct from compliance with directly enforceable obligations on specific entities contained in water rights permits, water quality certifications, or regulation. The nature and extent of water right holders' responsibilities to meet the LSJR flow objectives and the hydrologic circumstances under which permit conditions may be relaxed with respect to floods or droughts will be determined in a future regulation, water rights or water quality proceeding (See SED Appendix K, Chapter IV, Program of Implementation). Compliance methods and responsibilities for water rights, water quality, and/or regulation, will be determined in these future proceedings.</p>
3239	22	<p>The compliance point location is not clear.</p> <p>The objective identifies specific compliance points on each of the three tributaries. (SED, at Appx. K, p. 18.) However, the program of implementation allows the Executive Director to change the compliance locations on the regulated rivers "if information shows that another location . . . more accurately represents the flows of the LSJR tributary at its confluence with the LSJR." (SED, at Appx. K., p. 29.) The Executive Director's authority to make this change is not tied to a recommendation or consultation with the STM Working Group, and is entirely unchecked. This arrangement fails to provide any certainty to the regulated community with respect to the location of the compliance points.</p>	<p>The compliance points identified in SED Appendix K, Table 3 will be used to determine attainment of, compliance with, the plan amendments.</p> <p>The authority the State Water Board delegates to the Executive Director in response to implementation of the plan amendments is within the scope of the Board's delegation. The Plan amendments delegate authority to take actions related to implementation of the water quality objectives and performance of monitoring and special studies to the Executive Director. With respect to the LSJR flow objectives, this authority includes approval of the following: (1) changes to compliance locations and gage station numbers for flow requirements (SED Appendix K, p. 29); (2) adaptive adjustments to the flow requirements (Id., pp. 30-31); (3) procedures for implementation of adaptive methods (Id., p. 34); and annual adaptive operations plans (Id., p. 34). The Executive Director is also delegated authority to approve plans in connection with</p>

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Ltr#	Cmt#	Comment	Response
		<p>In sum, every component of the Tributary Flow Objective (i.e., the percentage of unimpaired flow, the 7-day running average, the regulated months, and the compliance points) is rendered unclear by the POI and/or subject to further change by the Executive Director. This lack of clarity or certainty with respect to every component of the objective contravenes the stated purpose of the objective, which is to "provide certainty to the regulated community . . ." (SED, at 3-2.) More importantly, the objective lacks clarity and will not be approved by OAL pursuant to Government Code section 11353[b][4].</p>	<p>implementation and monitoring associated with the southern Delta salinity objectives. (Id., pp. 44-45.) The Executive Director is not delegated authority to adopt or amend the Bay-Delta Plan. The program of implementation delegates management of implementation activities, not fundamental policy determinations regarding the establishment of the water quality objectives, to the Executive Director. Please see Master Responses 2.1, Amendments to the Water Quality Control Plan, for additional information and responses to comments regarding Executive Director authority.</p> <p>The Bay-Delta Plan is a planning-level document and the proposed amendments establish the desired condition of water quality in a specific area consistent with state and federal law. Please refer to responses 3239-14, 3239-15, 3239-16, 3239-17, 3239-18, and 3239-21.</p>
3239	23	<p>The State Water Board's analysis of the Tributary Flow Objective fails to demonstrate protection of beneficial uses.</p> <p>The Board must set water quality objectives that provide reasonable protection to beneficial uses. (Water Code, §§ 13000, 13241.) Although the WQCP identifies several beneficial uses to be protected by the Tributary Flow Objective (SED, at Appx. K, p. 13), Staff does not analyze the impact of this objective on these beneficial uses. Instead, Staff focuses exclusively on the impact that the objective will have on water temperature and floodplain inundation. (SED, at 19.2 and 19.3.) Staff then uses the SalSim program in an attempt to extrapolate the changes to water temperature into benefits to Central Valley fall-run Chinook salmon production. (SED, at 19.4.)</p> <p>In focusing exclusively on the impacts to water temperature, floodplain inundation and production of fall-run Chinook salmon, Staff fails to demonstrate that the specific beneficial uses identified in the WQCP will be protected by the objectives. Moreover, to the extent that cooler water temperatures, additional floodplain inundation and improvements to salmon production might serve as proxies for the protection of the various beneficial uses identified in the WQCP, the State Water Board's own analysis shows no benefits to water temperature, floodplain habitat or Central Valley fall-run Chinook salmon production.</p>	<p>Please See Master Response 1.2, Water Quality Control Planning Process, for discussion on State Water Board consideration of beneficial uses within the context of the water quality control planning process. As discussed in Appendix K, Revised Water Quality Control Plan, and the Executive Summary, Section ES10, Intended Uses of This SED, Water Code section 13241 identifies certain factors that must be evaluated when establishing water quality objectives. The State Water Board appropriately considered the factors listed in Water Code section 13241 in developing the LSJR flow objectives and SDWQ objectives. Table ES-27 summarizes the primary locations in the SED where information regarding the Water Code section 13241 factors may be found.</p> <p>For information regarding the benefits of unimpaired flow, water temperature, floodplain inundation, and the limited use of SalSim, please see Master Response 3.1, Fish Protection.</p>
3239	24	<p>Central Valley fall-run Chinook salmon are the sole focus of the SED analysis.</p> <p>The purpose of the Tributary Flow Objective and the Narrative Objective is to protect native fish migrating to and from the eastside tributaries through the Delta. The Narrative Objective explicitly states that Delta inflow conditions from the San Joaquin River watershed must be "sufficient to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta." (SED, at Appx. K, p. 18.) The Tributary Flow Objective is similarly singular in its protective goal; the WQCP states that the Tributary Flow Objective will be adaptively implemented "to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta," i.e., the Tributary Flow Objective will be adaptively implemented to achieve the Narrative Objective. (SED, at Appx. K, p. 30.)</p> <p>The SED lists 16 native and nonnative fish species that are present in the lower San Joaquin River, the three eastside tributaries and the southern Delta. (SED, at 7-9-7-29) As written, the objectives concede they offer no protection to any of the nonnative species. Furthermore, of the 16 species listed in the SED, only 3 migrate to and from the eastside tributaries: Central Valley fall-run Chinook salmon ("CVFRCS") [Footnote 6: Late Central Valley fall-run Chinook salmon do not occur on the three tributaries, and are not a separate evolutionarily significant unit (ESU) or distinct population segment (DPS). There is no</p>	<p>This comment includes opinion and the commenter's interpretation of information. 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>The analyses presented in the SED do not focus solely on Central Valley Chinook salmon. As described in Chapter 7, Aquatic Biological Resources, key evaluation species are used to determine impacts of the LSJR alternatives on aquatic resources include anadromous fish, reservoir fish, and warmwater reservoir fish (including non-natives). Indicator species were selected because of their utility in evaluating broader ecosystem and community-level responses to environmental change. In particular, the responses of Central Valley fall-run Chinook salmon to changes in flow, water temperature, and other flow-related variables have been well studied and provide a general indication of the overall response of the ecosystem to hydrologic change. This also applies to the benefits evaluations provided in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30. Please see response to comment 3239-8 regarding benefits to fish and wildlife from the plan amendments.</p> <p>Please refer to Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, for more information regarding the potential benefits of higher flows in the spring and cooler water temperatures to native fish and multiple levels of the aquatic ecosystem.</p> <p>Please see Master Response 3.1, Fish Protection, for more information regarding benefits from the plan</p>

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		<p>evidence of genetic differences between Central Valley fall-run Chinook salmon that arrive late and those that arrive early. Moreover, Central Valley spring-run Chinook salmon do not occur in the three eastside tributaries.], Central Valley steelhead (<i>Oncorhynchus mykiss</i>) [Footnote 7: Rainbow Trout do not migrate. The anadromous form of Rainbow Trout, referred to in the SED as steelhead, do migrate from the Stanislaus River (SED, at 7-3.) The Tuolumne River does not have a viable, sustainable <i>O. mykiss</i> population. (SED, at 7-18.)) and Pacific lamprey (<i>Entosphenus tridentatus</i>). Thus, of the 16 species listed in Section 7.2.1 of the SED, only 3 fit the description of the fish populations to be protected by the objectives.</p> <p>Staff's analysis narrows the focus of protection even further. Chapter 19 of the SED, which addresses benefits to native fish populations, does not discuss Pacific lamprey at all. With respect to Central Valley steelhead (<i>O. mykiss</i>), the Stanislaus River is the only one of the three eastside tributaries that has a self-sustaining population, and that population is admittedly small. (SED, at 7- 18.) The SED asserts that there is a "paucity" of information regarding C.V. steelhead run sizes (SED, at 7-17), and <i>O. mykiss</i> production was not analyzed in the SED. In short, the SED focuses solely on the protection afforded by the objectives to the production of fall-run Chinook salmon. Accordingly, a review of the current status of C.V. fall-run Chinook salmon is set forth so that the results of Staff's analysis can be put into perspective.</p>	<p>amendments for the protection of fish.</p>
3239	25	<p>Current status of Central Valley fall-run Chinook salmon</p> <p>CVFRCS are the predominate focus of the Proposed Project and therefore must be put into context. The evolutionarily significant unit ("ESU") of Central Valley fall-run/late fall-run Chinook salmon includes all fall-run Chinook salmon in the Sacramento and San Joaquin River Basins; there is no independent ESU for San Joaquin River fall-run Chinook salmon, nor for late fall-run Chinook salmon. (SED, at 7-9, 7-15.) CVFRCS are not a Distinct Population Segment ("DPS") under the ESA. (SED, at 7-9.) Because CVFRCS are only identified as a species of concern under the ESA (SED, at 7-9), the ESU is not currently protected under the ESA because it was not found to be at risk of extinction or at risk of becoming endangered in the foreseeable future.</p> <p>Average annual production [Footnote 8: Production is defined as ocean commercial harvest, ocean sport harvest, in-river harvest, escapement and returns to hatchery.] of CVFRCS from 1976-2014 was 707,598. [Footnote 9: Chinookprod, June 2016, available at http://www.casalmon.org/PDFs/Chinookprod_CompleteDraft2015Reports6.30.16.pdf.] The vast majority of these fish were harvested. Under current fishing regulations, CVFRCS cannot be legally harvested in the Plan Area [Footnote 10: California Freshwater Sport Fishing Regulations, 2016-2017; California Department of Fish and Wildlife, available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=117095&inline], and thus provide no harvest value in the Plan Area itself.</p> <p>As for the harvest value outside the Plan Area, average annual commercial ocean harvest from 1976-2014 was 426,949 (SED, at 20-62); average annual recreational ocean harvest over the same time period was 128,189 (SED, at 20-65); and average annual in-river catch from 1992-2010 was 64,900. (SED, at 20-65.) Using these figures, the average annual harvest is approximately 620,038 CVFRCS. Thus, on average, slightly more than 700,000 CVFRCS are produced each year, with more than 600,000 being harvested.</p> <p>The Staff analysis estimates that the Proposed Project will result in an additional production</p>	<p>Please see responses to Comments 3239-8, and 3239-24 regarding the use of indicator species.</p> <p>The State Water Board does not protect species based on their degree of listing under the Endangered Species Act. The State Water Board protects water quality that affects multiple beneficial uses of water including municipal and industrial, agricultural, and fish and wildlife. In addition, the comment mischaracterizes staff's conclusions regarding the anticipated benefits of the project by referencing model results from SalSim. Please see Master Response 3.1, Fish Protection, for an explanation of why the State Water Board did not rely upon SalSim due to limitations in the model.</p> <p>Please also see Master Response 1.2, Water Quality Control Planning Process, regarding the State Water Board's consideration of beneficial uses in the context of the water quality control planning process, and its authorities.</p> <p>Economic considerations associated with the recreation and commercial fishing industry are discussed in Chapter 20, Economic Analysis, Section 20.3.5, Effects on Fisheries and Associated Regional Economics. Please see Master Response 1.1, General Comments, regarding general responses to economic-related comments, including those attempting to compare costs and benefits. Please also see Master Response 8.0, Economic Analyses Framework and Assessment Tools, regarding the types of economic assessments and the tools used to consider economics in Chapter 20. Master Response 8.4, Non-Agricultural Economic Considerations, discusses the economic contribution of the plan amendments to fish and wildlife habitat and other beneficial uses.</p> <p>Please also see Master Response 3.1, Fish Protection, regarding the consideration of hatcheries as another stressor to fish populations.</p>

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		<p>of 1,103 CVFRCS annually (SED, at 19-84), at the cost of reducing water supply by 293,000 acre feet annually (assuming supply is subsidized by maximum groundwater pumping). (SED, at 5-73.) With average annual production of more than 700,000 CVFRCS, the increase in production expected to be achieved from the objectives amounts to an incremental gain of approximately 0.15%, or less than a quarter of 1 percent.</p> <p>The average dress weight of CVFRCS is approximately 10.7 pounds. [Footnote 11: Review of 2015 Ocean Salmon Fisheries: Stock Assessment and Fishery Evaluation Document for the Pacific Coast Salmon Fishery Management Plan, Table D-1, p. 309 (available at http://www.pcouncil.org/wpcontent/uploads/2016/02/Review_of_2015_Salmon_Fisheries_FullDocument.pdf.)] The SED states that the price per pound at the dock is \$5.54. (SED, at 20-63.) Using these numbers and the average annual commercial ocean harvest number of 426,949 to calculate a crude estimate of annual economic value, the amount exchanged at the dock is approximately \$25.4 million annually (426,949 fish * 10.7 lbs/fish = approx. 4.57 million lbs. * \$5.54/lb = approx. \$25.4 million). Assuming an increase in production of 1,103 fish, and assuming a commercial ocean harvest rate of 60%, the total increase in commercially harvested fish would be approximately 662 fish. With an average dress weight of 10.7 pounds, the increase in food production would be approximately 7,083 pounds. At a price per pound of \$5.54, the increase in economic production would be approximately \$39,242.00, which is 0.15% of the \$25.4 million that is exchanged annually.</p> <p>A review of the scientific data on migration of CVFRCS juveniles in the San Joaquin River system is also illuminating, as juvenile migration is a common subject of study and analysis. California Department of Fish and Wildlife ("CDFW") has estimated the number of CVFRCS juveniles entering the Delta on the San Joaquin River at Mossdale. The yearly numbers, as well as 11 the average annual number, are depicted in SJTA Table 2-1 [ATT12]. The numbers vary from as low as 13,286 to as high as 2,677,063.</p> <p>The total number of juvenile Chinook salmon from the entire Central Valley that migrate through the Delta can be measured at Chipps Island. As shown in SJTA Table 2-2 [ATT13], the average annual number of juvenile Chinook salmon from the entire Central Valley is more than 4 million, which is more than 5 times the number that leave the San Joaquin River.</p> <p>In addition, fall-run Chinook salmon are raised at five major Central Valley hatcheries that release more than 32,000,000 smolts each year. (SED, at 7-15.) The SED is silent as to how many more juveniles will be produced at Mossdale or Chipps Island by the increase in flow. However, an independent SalSim run conducted by SJTA consultants (SJTA Attachment 3 [ATT3] showed an average increase in the number of juveniles at Mossdale under the SWB's 40% unimpaired flow of 146,503 over the SWB baseline (SJTA Attachment 3.) If survival through the Delta is roughly 5% (Ferguson, et al. 2016 [Footnote 15: Ferguson et al 2016. see page 235 at http://scienceconf2016.deltacouncil.ca.gov/sites/default/files/2016-10-29-Accepted-Oral-Abstracts.pdf.)], then approximately 7,325 of these juveniles would be expected to survive to Chipps Island. With hatchery releases of approximately 32,000,000, the additional 7,325 fish at Chipps Island are essentially immeasurable, amounting to approximately 0.02% of the hatchery releases alone.</p>	
3239	26	[ATT12: SJTA Table 2-1. Yearly number of juvenile Chinook at Mossdale.]	The commenter provided this attachment for reference purposes in support of their comments. Those

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			comments are addressed in these responses to comments; therefore, no additional response is required.
3239	27	[ATT13: SJTA Table 2-2. Yearly Chipps Island estimates.]	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.
3239	28	[ATT14: SJTA Table 2-3. Yearly total hatchery releases in the Central Valley.]	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.
3239	29	<p>Delta Flow Criteria Report on protection of Chinook salmon</p> <p>The State Water Board’s Delta Flow Criteria Report from 2010 analyzes the flows necessary at Vernalis to protect juvenile fall-run Chinook salmon moving down the San Joaquin River into and through the Delta. (Delta Flow Criteria Report, at 55.) In Section 5.3 of the Report, the State Water Board sets forth the flows necessary at Vernalis. On page 119, the Report states: "San Joaquin River inflows are important for much of the year to support various life stages of San Joaquin basin fall-run Chinook Salmon . . . However, given the focus of this proceeding on inflows to the Delta and the lack of information received concerning spring-run flow needs on the San Joaquin River, the San Joaquin River inflow criteria included in this report focus on flows needed to support migrating fall-run Chinook Salmon from and to natal streams through the Delta." (Delta Flow Criteria Report, at p. 119.) As this paragraph makes clear, there was no analysis conducted on the flows needed from the three eastside tributaries; the focus was solely on flows from the San Joaquin River at Vernalis.</p> <p>Focusing on inflow to the Delta, the Report makes two key findings. First, the Report states that average March through June flows of 5,000 cfs on the San Joaquin River at Vernalis is a "flow threshold" where survival of juveniles and adult abundance of fall-run Chinook salmon is "substantially improved." (Delta Flow Criteria Report, p. 119.) Second, the Report states that average flows of 10,000 cfs at Vernalis during the same time period may provide conditions necessary to double San Joaquin basin fall-run. (Delta Flow Criteria Report, p. 119.) The State Water Board then determined what percentage of unimpaired flow would be necessary to achieve these flow rates of 5,000 and 10,000 cfs at Vernalis. In doing so, the drafters of the Report examined all of the flows in the San Joaquin Valley. Specifically, unimpaired flow was computed as "the sum of estimates from nine sub-basins in the watershed and are understood to represent the flow that would occur on the San Joaquin River at Vernalis." (Delta Flow Criteria Report, p. 97.)</p> <p>The nine sub-basins include "the Stanislaus River at Melones Reservoir, San Joaquin Valley Floor, Tuolumne River at Don Pedro Reservoir, Merced River at Exchequer Reservoir, Chowchilla River at Buchanan Reservoir, Fresno River near Daulton, San Joaquin River at Millerton Reservoir, Tulare Lake Basin Outflow, [and the] San Joaquin Valley West Side Minor Streams." (Delta Flow Criteria Report, p. 97.) [Footnote 16: The average unimpaired flow at Vernalis for the months of February through June (1921-2003) is 529,000 acre feet (February), 668,000 acre feet (March), 929,000 acre feet (April), 1,467,000 acre feet (May), 1,117,000 acre feet (June), for a summed average amount of 4,710,000 acre feet over all five months. (Delta Flow Criteria Report, p. 97; California Central Valley Flow Data, Fourth Edition Draft (May 2007), p. 45.)] The report concluded that "60% of the unimpaired flow [of the entire San Joaquin River basin upstream of Vernalis] from February through June is needed in order to achieve a threshold flow of 5,000 cfs or more in most years (over 85% of years) and flows of 10,000 cfs slightly less than half of the of time (45% of years)." (Delta Flow Criteria Report, p. 120.)</p>	<p>The quoted language concerns the lack of information regarding the needs of spring-run Chinook salmon, not fall-run Chinook salmon. Please see Master Response 1.1, General Comments, Master Response 1.2, Water Quality Control Planning Process, and Master Response 3.1, Fish Protection, regarding the Delta Flow Criteria Report. Please also see Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, and Master Response 3.1 regarding the benefits to fish and wildlife of increasing unimpaired flow in the three eastside tributaries.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, for a description of the calculation of unimpaired flow.</p>

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		<p>The analysis presented in the SED demonstrates that these flow thresholds of 5,000 cfs and 10,000 cfs will rarely be met by requiring 40% unimpaired flow from only the Stanislaus, Tuolumne and Merced Rivers (three of the nine sub-basins that contribute to San Joaquin River flows at Vernalis). Figure F.1.4-4a in the SED [ATT15] shows that average flows of 5,000 cfs from February to June (or 1,500 TAF) are only achieved in about 50 percent of water years under a 40% unimpaired flow requirement. [Footnote 17: The flows in Figure F.1.4-4a are expressed in acre feet, not cfs.</p> <p>Using a conversion rate of 1 cfs = 2 acre feet per day, which is the same conversion rate used in Appendix F1 (SED, at F.1-143), average flows of 5,000 cfs are equivalent to approximately 1,500 TAF because there are 150 days in the February to June time period: 5,000 cfs * 2 acre feet/day = 10 TAF/day * 150 days = 1,500 TAF. The SED does not contain a similar graph for the February to June time period using cfs.] (see also SED, at Appx. F1, Table F.1.4-4, p. F.1-168.) The graph also shows that average flows of 10,000 cfs (or 3,000 TAF) are only achieved in about 15% of water years under a 40% unimpaired flow requirement. (see also SED, at Appx. F1, Table F.1.4-4, p. F.1-168.)</p> <p>The frequency of achieving 5,000 cfs and 10,000 cfs flow thresholds are significantly lower under the Proposed Project than under the 60% unimpaired flow proposal in the Delta Flow Criteria Report where the flow thresholds were expected to be achieved in 85% of years and 45% of years, respectively. This reduction is due in large part to the fact that only three basins are contributing to the flows at Vernalis, as opposed to all nine. Indeed, the median annual unimpaired flow of the upper San Joaquin (which is not required to contribute any percentage of unimpaired flow under the objectives) is 1.44 MAF, whereas the Stanislaus, Tuolumne and Merced are only 1.08 MAF, 1.72 MAF, and 0.85 MAF, respectively.</p> <p>The Delta Flow Criteria Report concludes that the benefit to fall-run Chinook salmon migrating through the Delta is dependent on Vernalis flow. The SED fails to explain how the Vernalis-centric flow analysis which covered the entire San Joaquin River basin evolved into a narrowly focused objective covering only the three eastside tributaries. There is also no explanation of the impact of reducing unimpaired flow from 60% of the entire San Joaquin basin to 30-50% of the three eastside tributaries. If there will not be significant improvements to fall-run Chinook salmon under the proposed flow objectives because the flow thresholds from the Delta Flow Criteria Report will rarely be met, then there is a disconnect between the proposed objectives and the beneficial uses that they are intended to protect.</p>	
3239	30	[ATT15: SED Figure F.1.4-4a. WSE-Simulated Cumulative Distribution of SJR at Vernalis February- June Flow Volumes (TAF) for Baseline Conditions and 20%, 40%, 60% Unimpaired Flow (LSJR Alternatives 2-4).]	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.
3239	31	<p>The water temperature analysis in the SED is flawed and does not show improvements that will benefit fall-run Chinook salmon.</p> <p>Staff has asserted in several public hearings that the Tributary Flow Objective will protect fall-run Chinook salmon by improving water temperature conditions on the Stanislaus, Tuolumne and Merced Rivers, irrespective of the fact that the SalSim analysis only shows an increase in production of 1,103 fish. [Footnote 18: Transcript of Public Hearing before SWRCB, November 29, 2016, p. 272, Ins. 15-23 [Les Grober: "the main thing to say is that we're not relying on [SalSim results] to say this is the benefit. We're relying on the things that we showed that we have temperature improvements, we have floodplain habitat</p>	<p>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 adequacy of the modeling to support the analyses.</p> <p>Chapter 19 also provides a use advisory for SalSim; and specifically describes the limitations of SalSim. In addition, Master Response 3.1, Fish Protection addresses the State Water Board's SalSim evaluation and the acknowledgement of limitations in the SalSim model.</p> <p>Please see response to comment 3239-19 regarding how flow shifting is an adaptive implementation provision that is part of the program of implementation for the LSJR flow objectives. Please also see Master</p>

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		<p>improvements, and these are things that have been shown to lead to increases in populations and resiliency and all sorts of measures elsewhere in other systems. So that's what we're relying upon to show the benefit."]]</p> <p>Before addressing the results of the temperature analysis in the SED, it must be noted again that the analysis does not presume implementation of the Tributary Flow Objective as written. Rather, flows were shifted outside the February-June period to the July-November period to avoid "an undesirable result of elevated temperatures when compared to baseline." (SED, at Appx. F1, p. F.1-43.)</p> <p>In other words, Staff found that without the flow shifting measures, water temperatures were cooler under Baseline conditions than under the Tributary Flow Objective conditions. Since flow shifting is "not part of the unimpaired flow objective" (SED, at Appx. F1, p. F.1-17), any assertion by Staff that the Tributary Flow Objective itself will improve water temperature conditions is belied by the information in the SED, assuming acceptance of Staff's premise that cooler temperatures are universally better for Chinook salmon production. In any event, even with the flow shifting measures, the analysis in the SED does not demonstrate that the temperature changes will result in improved conditions for fall-run Chinook salmon.</p> <p>First, the temperature analysis in the SED uses monthly data and converts the monthly output to daily values. (SED, at 19-18.) As a result, the model assumes that the same flow rate will occur every day of the month. This result is contrary to the Tributary Flow Objective which requires a percentage of unimpaired flow based upon a minimum 7-day running average. Using a daily running average approach means that flows will change every day, not once per month. Accordingly, the analysis in the SED does not capture the daily changes in flow that would occur if the Tributary Flow Objective were implemented. As these changes in flow will cause corresponding changes to water temperature, the results shown in the SED are not reflective of what temperature impacts might occur, and thus do not demonstrate that the Tributary Flow Objective will protect beneficial uses.</p> <p>Furthermore, in modeling the temperature impacts, State Water Board Staff used the San Joaquin River Basin-Wide Temperature and EC Model, also known as the SJR HEC-5Q model. (SED, at 19-17.) The temperature thresholds were based on the USEPA recommended temperature criteria for protection of salmonids using the 7-day average of the daily maximum (7DADM) metric. (SED, at 19-18.) The analysis presented in the SED examines the percentage of days during each month over the modeled 34-year period that USEPA criteria are expected to be met at various locations on the Stanislaus, Tuolumne and Merced Rivers. (SED, at 19-18.) The SED characterizes a "significant benefit" as being a 10% change in the amount of time that USEPA criteria are met. (SED, at 19-18.)</p> <p>However, there was no legitimate or scientific basis for characterizing a 10% change as a "significant benefit," or a benefit at all. Specifically, the SED acknowledges there is no data to support the position that a 10% change will have any impact on population metrics such as survival or abundance. (SED, at 19-18 [noting that there is a lack of "quantitative relationships between a given change in environmental conditions and relevant population metrics (e.g. survival or abundance)"].) The only apparent reason for choosing 10% as a marker is that it purportedly covers the expected margin of error of the model, although this reasoning seems to be based on guesswork rather than statistics. (SED, at 19-18 ["Ten percent was selected because it accounts for a reasonable range of potential error</p>	<p>Response 2.2, Adaptive Implementation regarding how implementation of the LSJR flow objectives, with flow shifting, increases benefits to fish and wildlife during the critical February through June period while maintaining baseline temperature conditions July through November.</p> <p>As described in Chapter 19, the average daily 7DADM values for each month, and the 90th percentile daily 7DADM values for each month were also evaluated for both baseline and unimpaired flows during the 34-year temperature model period. The 90th percentile temperature represents the 7DADM value in which temperatures are lower 90% of the time and temperatures are higher 10% of the time. These two temperature metrics provide additional insight into expected effects on native salmonids from different unimpaired flows. Results of the temperature benefits analysis showed that temperature targets protective of salmonids are achieved more frequently than under baseline for all life stages from February-June under the percentages of unimpaired flow. These improvements are low estimates of the temperature improvements that can be achieved with increased flow because flow patterns were not optimized to achieve temperature benefits. There are small reductions in temperature attainment in some months under some unimpaired flow percentages: these reductions, however, will not occur with the flow shifting and optimization of flows allowed under adaptive implementation in the program of implementation. Finally, the comment mischaracterizes a statement made in Chapter 19 (SED, at 19-18). Page 19-18 states that the relationship between environmental conditions and population metrics has not been quantified. It does not state that there is no data in support of the relationship.</p> <p>Please also see Appendix K, Revised Water Quality Control Plan; Master Response 2.1, Amendments to the Water Quality Control Plan; and Master Response 2.2, Adaptive Implementation, for more information regarding the 7-day averaging period for the unimpaired flow objective.</p> <p>Please see Master Response 3.2 Surface Water Analyses and Modeling, subsection titled "Temperature Model, HEC-5Q and Modifications", regarding the HEC-5Q model.</p> <p>The State Water Board prepared the SED with a sufficient degree of analysis to inform the decision-makers about the environmental consequences of its decision and in light of what is reasonably feasible considering the magnitude and complexity of the plan amendments and their geographic scope. The level of analysis performed is suitable for a program-level project such as the plan amendments. Furthermore, the State Water Board analyzed effects at different percentages of unimpaired flow to provide a wide ranging and conservative approach to the analysis. Evaluating and showing effects at low and high percentages of unimpaired flow, allows full disclosure of the possible types of impacts and benefits that could occur. Please see Master Response 3.1 regarding the use of best available science, benefits of the unimpaired flow approach, the adequacy of the temperature analysis, temperature improvements on the three major eastside tributaries during June, and the benefits of unimpaired flow.</p> <p>Please also see Master Response 1.2, Water Quality Control Planning Process, regarding the State Water Board's consideration of beneficial uses in the context of the water quality control planning process.</p> <p>The comment makes reference to comments submitted by other entities. To review responses to comments submitted by other entities within the comment period on the 2016 Recirculated Draft SED, please refer to the index of commenters in Volume 3 to locate the letter number(s) of interest.</p>

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		<p>associated with the assumptions used in the various analytical and modeling techniques").)</p> <p>In acknowledging these many uncertainties, the drafters of the SED provided the following statement for the State Water Board to consider: "a 10% change was considered sufficient to potentially result in beneficial or adverse effects to sensitive species at the population level." (SED, at 19-18.) In light of the significant impacts to water supply that will be caused by the proposed objectives, the Board should demand a more reliable and scientifically-grounded conclusion as to what measure of temperature change will result in a benefit to salmon population. The potential for a benefit does not justify the drastic reduction to surface water supply, nor the significant impact to groundwater supply, that will be caused by the objectives.</p> <p>In any event, a review of the SED analysis demonstrates that this 10% change is rarely achieved under Alternative 3. [Footnote 19: The temperature analysis is also addressed in the comments from Oakdale Irrigation District and South San Joaquin Irrigation District at 19-34. The Board's temperature analysis is also addressed in comments submitted by MID and TID.] For instance, on the Stanislaus River, the 10% change over Baseline is only consistently achieved under 40% UIF in the month of October, and only for purposes of adult migration. (SED, at Table 19-3, p. 19-22.) The month of October is not targeted by the objectives, and presumably this increase in temperature is only achieved as a result of the flow shifting that is not part of the Proposed Project. Notably, the percentage of time when the USEPA criteria is met in October for adult migration purposes under Baseline is already fairly high, i.e., it is achieved between 71% and 88% of the time at all locations on the river. (SED, at Table 19- 3, p. 19-22.)</p> <p>Apart from the 12% change seen in October for adult migration purposes, the 10% change threshold is only achieved at two other times and locations on the Stanislaus River under 40% UIF, namely for spawning, egg incubation, and fry emergence in March at the ½ and ¾ locations on the river. (SED, at Table 19-3, p. 19-22.) On the Tuolumne River, there are no reported improvements in February at 40% unimpaired flow, and there are no relevant temperature changes in March for the simple fact that the temperature threshold of 60.8 degree Fahrenheit for fall-run Chinook juvenile rearing is already established under baseline conditions. (SED, at 19-26, Table 19- 7.) As explained in the comments submitted by MID and TID, the remainder to the Tuolumne temperature results reported in the SED do not demonstrate a benefit to fall-run Chinook salmon. [Footnote 20: See Comments submitted by MID and TID.]</p> <p>Given the results reported in the SED, and given the fact that there is no evidentiary support for the assertion that a 10% improvement will have a positive impact on survival or abundance of salmonids, it cannot be said that the Tributary Flow Objectives--even as modeled in the SED--protect the beneficial uses identified in the plan.</p>	
3239	32	<p>The SED's floodplain habitat analysis is flawed and does not show improvements to floodplain habitat.</p> <p>Section 19.3 of the SED describes expected benefits to salmon and steelhead from floodplain inundation under the Alternatives. Achieving a certain amount of floodplain inundation is not a WQCP objective. Rather, the State Water Board provides an analysis of floodplain inundation as justification for the proposed instream flows. Based on the analysis, the SED concludes that: "Implementation of the proposed project will produce substantial increases in floodplain habitat which is available to native fish and wildlife</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding LSJR flow requirements for an explanation of how the numeric and narrative flow objectives complement each other and how flow, and the functions it provides, are critical to protecting fish and wildlife beneficial uses.</p> <p>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, provide the scientific justification for providing higher and more</p>

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		<p>populations, and it is expected that there will be significant positive population responses by native salmonids, and other native fishes." (SED, at 19-74.)</p> <p>The SED does not provide adequate support for this conclusion. Specifically, the SED (1) does not define floodplain habitat, nor does it properly distinguish between inundated land and habitat, (2) does not consider the quality of newly inundated areas, omitting factors such as depth, flow rate, timing, duration, dissolved oxygen, temperature and substrate; (3) does not integrate findings of the temperature assessment with the floodplain assessment to evaluate the expected thermal suitability of inundated areas; (4) does not consider other reasonable measures such as floodplain restoration to create more frequently inundated off-channel habitats, and (5) does not address empirical findings which validate that wetted area does not always equate to usable habitat.</p>	<p>variable flow during February–June time period.</p> <p>Please see Chapter 7, Aquatic Biological Resources, for a description of the two analyses performed with regard to physical habitat availability: weighted useable area (WUA) and floodplain inundation area. Both indices are necessary to address changes in habitat availability for the juvenile rearing life stages over the full range of modeled flows. Since the WUA-discharge relationships are limited to the range of flows that generally fall within the bankfull width of the channel, the floodplain inundation-flow relationships were used to evaluate potential changes in juvenile rearing habitat within the upper range of flows that inundate adjacent floodplains that are outside the bankfull width of the channel.</p> <p>The State Water Board recognizes that non-flow measures have a complementary role to flow-based restoration. Please see Master Response 5.2, Incorporation on Non-Flow Measures, regarding the role of non-flow measures in the overall health of the tributaries and how non-flow measures relate to the plan amendments.</p> <p>Please see Master Response 3.1, Fish Protection, regarding the use of best available science, benefits of the unimpaired flow approach, and the adequacy of modeling to support the analysis as it pertains to the floodplain analyses.</p> <p>Please also 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.</p>
3239	33	<p>The SED does not define floodplain habitat.</p> <p>In order to properly assess whether the additional flows required by the proposed objectives will create floodplain habitat, as opposed to inundated land unsuitable as habitat, the term floodplain habitat must first be defined and distinguished from inundated land. However, the SED does not provide such a definition. Before the Board makes any decision as to whether the proposed objectives provide reasonable protection to fish and wildlife due to the creation of additional floodplain habitat, the term floodplain habitat must first be defined so that the Board can assess whether the objectives merely inundate more land or create habitat that will be beneficial to fish and wildlife.</p> <p>Floodplain habitat is characteristically broad flat, low-lying land that is accessible to rising river conditions (Sommer et al. 2001 [Footnote 21: Sommer, T. R., Nobriga, M. L., Harrell, W. C., Batham, W., & Kimmerer, W. J. (2001). Floodplain rearing of juvenile Chinook salmon: Evidence of enhanced growth and survival. <i>Canadian Journal of Fisheries and Aquatic Sciences</i>, 58(2), 325-333.], Jeffres 2008 [Footnote 22: Jeffres, C. A., Opperman, J. J., & Moyle, P. (2008). Ephemeral floodplain habitats provide best growth conditions for juvenile Chinook salmon in a California river. <i>Environmental Biology of Fishes</i>, 83(4), 449-458.], Katz et al. 2013 [Footnote 23: Katz, J., Jeffres, C., Conrad, L., Sommer, T., Corline, N., Martinez, J., Brumbaugh, S., Takata, L., Ikemiyagi, N., Kiernan, J., & Moyle, P. (2013). Experimental agricultural floodplain habitat investigation at Knaggs Ranch on Yolo Bypass, 2012-2013. Sacramento, CA: US Bureau of Reclamation.]). The otherwise dry area becomes inundated and floods terrestrial invertebrates, providing an abundant, otherwise inaccessible, food-source for fish. As waters warm, productivity increases key food sources like zooplankton in densities greatly exceeding the main channel.</p> <p>The relatively shallow, open-water habitat, spread over a large expanse also creates several important features. First, it allows for water to warm from ambient exposure. Second, the large area has slower moving water (low-velocity) requiring minimum effort for juveniles to</p>	<p>Please see response to comment 3239-32 regarding the definition of floodplain.</p> <p>Please see Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, (see Sections 3.7.3 and 3.7.4) and Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, (see Section 19.3.1) regarding the benefits of having increased floodplain habitat.</p> <p>See Master Response 3.1, Fish Protection, regarding the use of best available science, benefits of the unimpaired flow approach, the adequacy of modeling to support the analysis as it pertains to the floodplain analysis, beneficial effects of floodplain inundation, and the reliance on evidence from other rivers outside the plan area.</p> <p>Please also 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.</p>

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		<p>search for food or hold in place. Finally, the inundated terrestrial vegetation and broad expanse lower the potential for predator-prey interactions. None of these key factors are addressed in the SED’s determination of how floodplain habitat is identified.</p> <p>The SED compares floodplain creation on the three eastside tributaries to the Yolo Bypass. This is not a proper or helpful comparison. The Yolo Bypass is a 59,000-acre area that doubles the inundated area of the Delta and is "equivalent to about one-third the area of the San Francisco and San Pablo bays" (Sommer et al. 2001). The sum of the fragmented, wetted areas in the San Joaquin Basin that the SWRCB is referencing is not comparable in size or function. This disparity alone highlights a fundamental misunderstanding of what floodplain habitat is and how it works. This misunderstanding was further highlighted in the SED when it stated, ". . . exactly how much faster salmon grow on a floodplain depends on many variables that are not completely understood in California . . ." (SED, at 19-74). As just explained, the "many variables" are understood from past research, but clearly not addressed within the SED analyses</p>	
3239	34	<p>The SED does not examine the quality of the inundated areas, nor the suitability of the inundated areas as habitat.</p> <p>The SED analysis relies upon the United States Fish & Wildlife Service ("USFWS") (2013) model to estimate floodplain inundation for the Stanislaus River. (SED, at 19-57.) The USFWS abandoned use of its own model in light of a superior model being developed by NewFields (2013). The USFWS used the NewFields model in its assessment of survival relative to floodplain inundation. (Identification of the Instream Flow Requirements for Anadromous Fish in the Streams Within the Central Valley of California and Fisheries Investigations (2014) USFWS Annual Progress Report Fiscal Year 2014, Sacramento, CA ("USFWS 2014").) Annual Progress Report Fiscal Year 2014. Sacramento, CA.)</p> <p>The SED references the USFWS 2014 analysis, and therefore the SWRCB must be aware that the NewFields model exists. It is unclear why the SWB chose not to use the best available science in its assessment of floodplain inundation in the Stanislaus River. A presentation by Paul Frank (NewFields, February 2014) of the reported conclusions of the NewFields (2013) findings state that rearing habitat is best increased by creating perennially accessible habitat through habitat restoration, not temporary habitat from elevated overbanking flows.</p> <p>Even if the SWRCB accurately identified the quantity of created floodplain habitat (which appears highly unlikely), there is little consideration of the habitat quality differences that occur across a river. The SWRCB briefly broached the idea of ‘differences in habitat quality’ by stating, ". . . as an example, flooding a parking lot with sufficient timing, frequency, magnitude, and duration necessary for fish will not produce the kinds of ecosystem responses that are desired" (SED, at 19- 55). Each river does have its ‘parking lots’ of unusable habitat. For such an important model, outputs should be validated in the field. At a minimum, the SED should provide a reasonable correction factor to its floodplain estimates bringing numbers into a more realistic representation. Not only did the SED not conduct any validation, but it assumed 100 percent of the newly wetted area was not only usable by juvenile Chinook salmon or other native fishes, but that it provided greater benefit than other wetted areas. As a result, the modeled wetted area increases from additional flow cannot be confirmed as quality usable habitat or verified as floodplain habitat at all.</p> <p>One of the key factors in determining whether a newly inundated area will create suitable</p>	<p>Please see Master Response 1.1, General Comments, regarding the program-level document and program-level analysis. Please also see the discussion of general methods and modeling regarding how differing opinions on modeling do not equate to inadequacy. In addition, the comment states that the USFWS abandoned its model but the cited literature does not support this contention. In the cited literature the USFWS applied the NewField model experimentally on the Stanislaus River and compared it to their modeled results from the previous year concluding “the flow-floodplain area relationship [shown in Figure 12] is robust, based on the similarities between the FWS and NewFields floodplain area-flow relationships.” (USFWS 2014 at p.13).</p> <p>Please also see Master Response 3.1, Fish Protection, regarding the use of best available science, benefits of the unimpaired flow approach (including the difference between unimpaired flow and natural conditions), and the adequacy of modeling to support the analysis as it pertains to the floodplain analysis.</p> <p>Non-flow measures, such as habitat restoration, have a complementary role to the flow-based restoration and are an important component of fish protection. Please see Master Response 5.2, Incorporation of Non-Flow Measures, regarding the role of non-flow measures in the overall health of the tributaries and how non-flow measures relate to the plan amendments.</p> <p>The adaptive implementation (see Appendix K) process will allow the fine tuning of flows to achieve desired floodplain timing, magnitude, and duration. The flow-shaping element of adaptive implementation will enable flows to be shifted within the February through June time period, if best available scientific information indicates that flows should be shifted from the latter months to earlier months, in order to protect fish and wildlife. Please see Master Response 2.2, Adaptive Implementation, regarding clarification and examples of how adaptive implementation would work, and specifically flow shaping.</p>

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		<p>floodplain habitat is timing. The proposed objectives require significant amounts of additional flow with questionable resulting benefits to floodplain habitat that are poorly timed. Under current conditions in the San Joaquin River basin the total capacity for floodplain creation is relatively limited. Even under the most optimistic scenario, the maximum amount of floodplain that is predicted to be inundated on the Stanislaus River is 789 acres during the month of May. (SED, at 7- 87, Table 7-15a [Alternative 4].) This figure represents the amount of area that is inundated with water, not necessarily the amount of area that will provide significant ecological benefits to native fish.</p> <p>Moyle et al. (2007) [Footnote 24: Moyle, P., Crain, P., & Whitener, K. (2007). Patterns in the use of a restored California floodplain by native and alien fishes. San Francisco and Estuary Watershed Science, 5(3), 1-29.] stated that "Re-creation of floodplains with a high degree of ecological function is not easily accomplished . . ." and provided a set of guidelines for restoring native fishes to floodplains. The most relevant recommendations were to: (1) provide early opportunities for flooding, primarily from January through April, which were important to increase algal and invertebrate production; and (2) maintain a mosaic of habitats, with a primary focus on large open areas covered with annual terrestrial plants. The authors also note that limited sampling in more forested habitats yielded few fish, relative to the nearby open areas. These considerations should be more fully recognized in the SED as quality of floodplain habitats are not addressed and the timing of inundation may tend to favor non-native species over native species based on results from Moyle et al. (2007).</p> <p>The timing of floodplain inundation is a critical component to restoring this particular habitat for native fish. For Chinook salmon in particular, usage of the floodplain in the Cosumnes River occurred primarily in late-winter and early spring with most fish observed in February and March (Moyle et al. 2007, Table 4 therein). Native fish (e.g., Splittail, Sacramento sucker, and Chinook salmon) made up less than half of the observed catch beginning in the month of May (Moyle et al. 2007; Figure 3 therein). By June, a high proportion of observed catches were made up of non-native fishes.</p> <p>While Jager (2014) [Footnote 25: Jager, H. I. (2014). Thinking outside the channel: Timing pulse flows to benefit salmon via indirect pathways. Ecological Modelling, 273, 117-127.] showed increased recruitment of Chinook salmon under a pulse flow scenario (used for floodplain inundation) that had relatively late timing, the author also found that a late-winter pulse was also associated with increased recruitment rates. These differing viewpoints highlight the need for a more thorough evaluation of the timing of floodplain inundation in the SED. Jager (2014) also noted "the natural hydrograph may not always be the best solution for fishes in regulated rivers because relationships with mediating factors have changed."</p> <p>Under the proposed alternative, floodplain inundation appears to increase more substantially (over baseline conditions) during the months of April and May (SED, at Tables 7-15a-d, p. 7-87-7-90.) Slight decreases, increases, or no change in available floodplain habitat are predicted to occur during the months of February and March. The impact of creating more inundated areas in the later months, while achieving similar available floodplain habitat in the earlier months, needs to be further evaluated. There may be more benefit to more-numerically-abundant fry- and parr-sized Chinook salmon during the early months, and an increase in the risk of favoring non-native species during the later months.</p>	

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3239	35	<p>The SED does not consider the physical and biological interconnected relationships between temperature and flow as they relate to floodplain habitat.</p> <p>The SED does not fully consider the effect of temperature and flow in the timing and presence of juvenile salmon in the river. Floodplain created in later months from mid-April through June offers little benefit to juvenile salmon. As shown above, this is the time when the greatest amount of wetted area is created under the objectives. (SED, at Tables 7-15a-c, p. 7-87-7-89.) This oversight occurs because the SED addresses interrelated factors (such as flow and temperature) individually and cites to segments of scientific findings without providing much needed empirical results from the rivers being analyzed. This error further ignores the implicit and fundamental relationship of flow, temperature, rearing habitat, and food resources in the development and migration of a young salmonid.</p> <p>The SED inappropriately attributes survival to floodplain acre-days. On page 19-53, the SED states: "On the Stanislaus River, USFWS (2014) found a significant relationship between juvenile survival and floodplain acre-days, with floodplain acre-days explaining 77% of the year to year variation in juvenile survival." While the statistical correlation may be valid, the biological causation or underlying mechanism may be different. Survival indices are almost entirely driven by whether fry survive during migration, not while rearing. In wetter years with freshets, fry have shown good survival rates to the lower rotary screwtrap at Caswell. This is not due to floodplain inundation. These fry are actively migrating and quickly moving from the primary spawning and rearing reach to the Delta. These fry are not rearing on the floodplains, they are exiting the system.</p> <p>In addition to the freshet-influenced survival of fry, temperature also becomes an issue in May and June. The SED states that 14°C (57.2°F) should be maintained to the confluence of all eastside tributaries from April to June for smoltification (SED, at 7-122 -7-125). While most outmigration already occurs in February and March, water temperature conditions in the Stanislaus River historically remain cool (mean of approximately 15°C or 59°F) through April (SJTA Figure 2-2 [ATT16]) as remaining fish leave the system as smolts. Ambient warming drives elevated water temperature in May through June (SJTA Figure 2-3 [ATT17]) beyond the control of reservoir releases and outside of desirable outmigration conditions. By failing to integrate results of the temperature assessment with the floodplain assessment, the SED neglects to recognize that temperatures in most of the floodplain areas will exceed the criteria set forth in Tables 19-1 and 19-2. For example, on the Stanislaus River at Ripon (RM 16) water temperatures exceed 14°C (57.2°F) from April-June which is the primary period that the SWB concluded that the majority of floodplain inundation and benefit to salmon would occur.</p> <p>Outside of the Stanislaus River, warming occurs earlier and more rapidly. In the San Joaquin River, water temperature steadily rises from median temperatures near 16°C (60.8°F) in early April to approaching 20°C (68°F) by early May (SJTA Figure 2-4 [ATT18]). Again, increased flow releases did not appear to counteract the ambient warming conditions. Monthly water temperatures collected at Vernalis show a nonlinear pattern, with a clear threshold at which water temperature operates independently of discharge. Monthly discharge levels below 2,500 cfs appear to have a strong negative relationship with water temperatures. However, above 2,500 cfs, the relationship between monthly discharge and water temperature changes to a different pattern. Data in this portion of the relationship clearly shows that water temperature is not associated with increased discharge (SJTA Figure 2-5 [ATT19]). This result also shows that the water temperature above approximately</p>	<p>Please see Master Response 3.1, Fish Protection, regarding the use of best available science, benefits of the unimpaired flow approach, and the adequacy of modeling to support the analysis as it pertains to the floodplain analysis. Please also see the discussion regarding seasonal flows from February through June.</p> <p>Please see response to comment 3239-34 regarding the State Water Board’s non-flow recommendation for floodplain and riparian habitat restoration, and the adaptive implementation element of flow shaping.</p>

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		<p>20°C (68°F) cannot be reliably managed by flow and any out-migrant salmonid in May and June will experience uncontrollably high and potentially undesirable water temperature conditions in the San Joaquin River.</p> <p>The SWRCB’s goal to increase floodplain and to meet unreasonable water temperature thresholds during the latter portion of the outmigration period will provide little benefit to a numerically small number of native salmonids and may carry with it higher risks than other potential alternatives. The primary risk is to the coldwater pool in the upstream rim reservoirs, a risk that may carry many unintended consequences that will affect summer rearing areas of O. mykiss and fall migration and spawning conditions for adult Chinook salmon. A secondary risk is that later inundation of floodplains may favor non-native fish species, not the native species that it is intended to benefit. Therefore, a more biologically beneficial alternative is to provide off-channel habitat that is available at a wide range of flows, specifically designed to function for multiple life stages of native salmonids.</p>	
3239	36	[ATT16: SJTA Figure 2-2. Minimum, average and maximum of daily water temperatures at Ripon (RM 16) 1998-2016 (USGS Station 11303000).]	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.
3239	37	[ATT17: SJTA Figure 2-3. Minimum, average and maximum average air temperatures at Stockton Metro Airport, 1950-2016.]	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.
3239	38	[ATT18: STJA Figure 2-4. Minimum, mean, and maximum of average maximum water temperatures at (a) Vernalis 1973-2011 (USGS station 113035000), (b) Mossdale 2002-2011 (CDEC station MSD), and (c) Rough and Ready Island 2001-2011 (CDEC station RRI).]	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.
3239	39	[ATT19: SJTA Figure 2-5. Average river flow (cfs) and average maximum water temperature (°C) at Vernalis, 1973-2011 (USGS station 113035000).]	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.
3239	40	<p>The proposed objectives ignore the only viable solution of bringing habitat to flow, rather than flow to the habitat.</p> <p>The objectives narrowly focus on using sizeable flows to bring water to floodplain habitat. This focus ignores other potential solutions that should be considered in a resource-limited landscape. The SED acknowledges that the Central Valley historically contained approximately one million hectares (2.47 million acres) of floodplain habitat, and that 90% of this habitat has been lost due to land-use changes and habitat conversion. (SED, at 19-53). This leaves 247,105 acres remaining in the entire Central Valley. Combined, the Yolo bypass (59,305 acres) and Cosumnes River Preserve (45,999 acres) amount to approximately 105,000 acres, or nearly 43 percent of the total floodplain habitat. The combined inundated areas on the Stanislaus, Tuolumne, Merced, and San Joaquin Rivers at flows of 5,000 cfs on the tributaries and 15,000 cfs on the San Joaquin (which is well above 60% unimpaired flow), equal 11,418 acres of fragmented "floodplain" habitat--less than 5% of the remaining floodplain habitat in the Central Valley. (SED, at Tables 19-22 - 19-27, p. 19-63 - 19-68.)</p> <p>Instead of focusing exclusively on flow, the objectives should include restoration of off-channel habitat, which has already been shown to provide salmonid habitat at base case flow levels in the Stanislaus River. Recent restoration projects, including Honolulu Bar, Russian Rapids side-channel complex, and Lancaster Road restoration area, have utilized alterations to channel morphology and the riparian community to provide continuously</p>	<p>The State Water Board recognizes the importance of complementary non-flow measures, such as habitat restoration, predator removal and local hatchery practices, for protection and recovery of salmon populations. 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. 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. The potential cost and environmental impacts of those actions are evaluated at a programmatic level in Section 16.3.</p> <p>However, the plan amendments are fundamentally about addressing water quality by providing more flows necessary to reasonably 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, and the State Water Board’s authority related to non-flow actions, please see Master Response 5.2, Incorporation of Non-Flow Measures. Please also see Master Response 5.2 for further discussions on the cost of non-flow measures, and for an explanation of why non-flow measures are not alternatives to the plan amendments.</p> <p>Best available science has shown that flow is the primary limiting factor to survival of salmon, and that non-flow factors, such as predation, are affected by flow, because a reduced, flattened flow regime favors</p>

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		<p>wetted and accessible habitat for native fish. These projects are a more appropriate and reasonable means of providing salmonid habitat for multiple life stages, year-round rather than increasing flows to provide relatively small amounts of temporary marginal floodplain habitat.</p>	<p>nonnative species. Increasing flow in the river will enhance the effect of predator removal.</p> <p>Flow restoration is inevitably part of habitat restoration. Outcomes of the three restoration projects referenced in the comments include increased wetted areas, which could not be achieved without flow restoration. For further explanation regarding flow as the critical element of habitat restoration, please refer to Master Response 5.2.</p> <p>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 Objective.</p> <p>Please see Master Response 3.1, Fish Protection, for more discussion regarding the scientific justification for flow in protecting fish and wildlife, and a detailed clarification of predation as the non-contributing factor to salmon population decline.</p>
3239	41	<p>Empirical findings validate that wetted area does not always equate to usable habitat.</p> <p>The analysis in the SED fails to acknowledge empirical findings which have shown that wetted area does not always equate to usable habitat. On the Stanislaus River, FISHBIO was able to sample fish use of off-channel "floodplain" habitats identified from NewFields model outputs (2013) during periods of increased flow from Goodwin Dam in 2013 and 2014. A report on this sampling was sent to the Stanislaus River Forum and is attached hereto as SJTA Attachment 4 [ATT4].</p> <p>Sampling in 2013 occurred between April 25 and May 9 at flows ranging from 3,009 to 3,045 cfs at Goodwin Dam. No juvenile fall-run Chinook salmon were observed in 2013 despite an estimated passage of over 145,000 individuals at the Oakdale rotary screw trap between April 25 and May 10. Sampling in 2014 occurred between April 21 and April 30 at flows ranging from 2,400 to 2,700 cfs. With an estimated passage of 48,600 individuals at the Oakdale rotary screw trap during the sampling period, a total of 265 juvenile fall-run Chinook salmon were observed in off-channel habitats during 2014. However, 199 of the 265 fish were observed in recently restored side-channel habitats (i.e., Honolulu Bar, Russian Rapids side-channel complex, and Lancaster Road restoration area) that remain connected at all flow levels. Therefore, the presence of fish in these areas cannot be attributed to increased flow from Goodwin Dam.</p> <p>Non-restored off-channel areas surveyed in the Stanislaus River did not have the characteristics of productive and beneficial floodplain habitat that was assumed from the NewFields model outputs. Large, shallow, warm-water floodplains (like Yolo Bypass) provide refuge from high flows, high biotic diversity, and abundant food sources, which have been shown to be ideal conditions for growth of juvenile salmonids (Jeffres 2008, Katz et al. 2013, Sommer et al. 2001). However, floodplain areas in the Stanislaus River were generally comprised of narrow bands of flooded margin habitat where riparian encroachment, resulting in very dense vegetation, was common.</p> <p>Temperatures in the off-channel areas remained low (12.0-18.7°C or 53.7-65.7°F) throughout the duration of each sampling period. Water temperatures on average were less than 0.55°C (1°F) warmer in off-channel habitats compared to surface waters of the main channel, though some areas with limited water circulation (i.e., backwater areas with no current) warmed to greater than 2.8°C (7°F) above in-river temperatures. Sampling of specific habitat types in 2014 showed that in wetted margin habitat and side channels,</p>	<p>Please see Master Response 3.1, Fish Protection, regarding the use of best available science, benefits of the unimpaired flow approach, the current pattern and fish decline and the need for increased flow, and the adequacy of modeling to support the analyses as it pertains to the floodplain analysis. Please also see the discussion regarding seasonal flows from February through June.</p> <p>Please see response to comment 3239-34 regarding the State Water Board's non-flow recommendation for floodplain and riparian habitat restoration.</p>

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		<p>average temperatures were only 0.144°C and 0.10°C (0.26 F and 0.18 F) warmer than the main channel. Temperatures in this range do not promote optimal growth rates in juvenile salmonids, but they are within tolerable limits for rearing. Thermal benefits (i.e., warmer water temperatures) are frequently associated with floodplain rearing of juvenile salmonids, and are thought to provide increased food productivity and, subsequently, improved growth conditions compared to the main channel (Sommer et al. 2001). The minimal differences in temperature between most off-channel areas and the corresponding mid-channel were indicative of the lack of suitable floodplain at 2,400 to 3,000 cfs.</p> <p>Although it is clear that fragments of off-channel habitat, some of which may be considered floodplain, are created by increasing discharge out of Goodwin Dam, the quality and usefulness of this habitat is questionable. Environmental conditions of inundated areas varied greatly (i.e., relative quality or potential for usage of habitats). While most sampled locations were determined to have conditions that were within thresholds for juvenile salmonid rearing, most lacked the warmer temperatures, shallow depths, and open sunlit areas more typical of the larger floodplain areas in the Sacramento-San Joaquin basin. Essentially the habitats did not ecologically function like a floodplain.</p> <p>Throughout the duration of the study, no Chinook salmon were documented in any of the off-channel habitats sampled below Oakdale (river mile 42.4), despite large numbers of juvenile salmon migrating through the system. This finding is consistent with findings by Moyle et al. (2007), who reported prevalence of non-native species on floodplains and very limited habitat use by Chinook salmon after April. A limited number of Chinook salmon were observed in side channels in 2014, with the majority of these fish seen in recently restored areas including Honolulu Bar, the Russian Rapids side-channel complex, and Lancaster Road restoration area in the upstream reaches (i.e., between Oakdale and Knights Ferry).</p> <p>Given that the majority of juvenile salmon that remain in the system after April are smolts, and considering evidence that larger migrating juveniles typically use mid-channel, higher velocity areas for migration (Kemp et al. 2005 [Footnote 30: Kemp, P. S., Gessel, M. H., & Williams, J. G. (2005). Seaward migrating subyearling Chinook salmon avoid overhead cover. <i>Journal of Fish Biology</i>, 67(5), 1381-1391.]; Svendsen et al. 2007 [Footnote 31: Svendsen, J. C., Eskesen, A. O., Aarestrup, K., Koed, A., & Jordan, A. D. (2007). Evidence for non-random spatial positioning of migrating smolts (Salmonidae) in a small lowland stream. <i>Freshwater Biology</i>, 52(6), 1147-1158.]), it is likely that these salmon do not utilize the floodplain habitat for extended rearing, but instead migrate rapidly through the lower reaches of the Stanislaus River.</p> <p>Summary of Floodplain Habitat Analysis in SED.</p> <p>In sum, the floodplain habitat analysis in the SED fails to examine whether the additional flows required by the Tributary Flow Objective will create suitable floodplain habitat on any of the three eastside tributaries. Inundating more land with higher flows does not translate directly into suitable habitat for Salmonids. The Board should consider the studies cited above and the work performed by outside entities such as FishBio, which perform the vast amount of studies on the impacted tributaries. Without proper consideration of this work, the Board cannot determine whether the Tributary Flow Objective will create suitable floodplain habitat, much less determine that the objective provides reasonable protection to the beneficial uses identified in the Water Quality Control Plan.</p>	

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3239	42	<p>The SalSim analysis in the SED shows no benefit to Central Valley fall-run Chinook salmon production.</p> <p>The Narrative Objective states that flows are needed to "support and maintain" the migratory fish population from the San Joaquin River through the Delta. (SED, at Appx. K, p. 18.) Table 19-32 shows the current population under Baseline conditions. Approximately 11,373 Central Valley fall-run Chinook salmon are produced annually on the three tributaries. There is no indication or analysis that the current flow regimes on the three tributaries would not "support and maintain" this population. If Baseline conditions are continued with no changes to the systems, there will be 11,373 Central Valley fall-run Chinook salmon annually, on average. It can be inferred from the document that the current flow regimes will maintain this productivity on the three tributaries.</p> <p>The SED goes further than the Narrative Objective of "support and maintain" the population. It states there will be a benefit to the Central Valley fall-run Chinook salmon. Reading between the lines, this means that the Narrative Objective is not the standard being analyzed. Instead, the analysis focuses on improving production, not supporting and maintaining the population. The SED states, "it is expected that there will be substantial increases in fall-run Chinook salmon abundance on these tributaries from unimpaired flows at or greater than 40%." (SED, at 19-87.)</p> <p>The supposed substantial increase in Central Valley fall-run Chinook salmon production is depicted in Figure 19-13 of the SED [ATT20], which is reproduced below with the addition of the specific numbers taken from Table 19-32. The total increase in production from the baseline (SBBASE) to the 40% unimpaired flow requirement (SB40%UF) will be 1,103 Central Valley fall-run Chinook salmon annually. (SED, at Table 19-32, p. 19-84.) Given average annual production of CVFRCS of 707,598 (yrs. 1976- 2014) [Footnote 32: http://www.casalmon.org/PDFs/Chinookprod_CompleteDraft2015Reports6.30.16.pdf], an increase of 1,103 is essentially immeasurable, amounting to an increase of less than a quarter of one percent, or 00.16%.</p> <p>For purposes of SalSim analysis only, SWB Staff created an alternative flow-shifting scenario where 25% of the total volume of unimpaired flow from the February-June period was shifted to the months of September through December on all three eastside tributaries and in all water years. (SED, at 19-80.) This flow-shifting scenario, known as maximum flow shifting (SB40%MaxFS) differs from the flow shifting scenarios modeled in the rest of the SED, where up to 25% of the volume of unimpaired flow from the February-June period was shifted to July- November, mostly in wet years. (SED, at Appx. F1, p. F.1-43.) The maximum flow shifting scenario was not modeled for any other purpose, and the impacts of maximum flow shifting on water temperature, floodplain habitat, storage, agriculture, groundwater pumping and hydropower were never analyzed in the SED.</p> <p>In touting the benefits of maximum flow shifting, Staff has failed to point out that by shifting 25% of the February-June flow to later in the year, much of the floodplain habitat that is supposedly created by the 40% unimpaired flow from February through June will be forfeited. Reducing February-June flows by 25% will reduce unimpaired flow from 40% to 30%. The SED measures floodplain inundation changes in acre*days. The percentage increase in acre*days under 40% unimpaired flow as compared to baseline is 35%. (SED, at 19-71.)</p> <p>However, the percentage increase in acre*days under 30% unimpaired flow as compared to</p>	<p>Please see Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, and Master Response 3.1, Fish Protection, regarding the current fish declines on the three eastside tributaries and the need for increased and more variable flows. Please see Appendix K, Revised Water Quality Control Plan and Master Response 2.1, Amendments to the Water Quality Control Plan, regarding clarifying modifications made to the plan amendments, including flow shifting as part of the program of implementation.</p> <p>The commenter partially quotes the first sentence of the narrative objective. The full quote of the first sentence of the narrative objective is "[m]aintain inflow conditions from the San Joaquin River watershed to the Delta at Vernalis sufficient to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta." Please see response to comment 3239-8 regarding the definition of natural production.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling for a description of the modeling assumptions. The SED analyzes effects at different percentages of unimpaired flow under various alternatives to provide a wide ranging and conservative approach to the analysis. Evaluating and showing potentially significant effects from baseline conditions to 60% unimpaired flow allows full disclosure of the possible types of impacts and benefits that could occur from implementation of the plan amendments. Please also see response to comment 3239-8 and Master Response 2.2, Adaptive Implementation, regarding flow shifting. Flow shifting is not allowed at 30% unimpaired flow but incorporated into the modeling runs at 40% and above. This means that flow shifting is already integrated into the 40% UIF modeling run prior to evaluating benefits such as floodplain inundation.</p> <p>The SalSim flow shifting scenarios are not alternatives but are used to demonstrate the benefits that could be realized under adaptive implementation in the program of implementation. Flow shifting of water to the fall allows a portion of the February through June unimpaired flow to be delayed until after June when assessment of real time water availability and fish conditions indicates that the benefits of achieving temperature or other goals outside of the February through June time period exceeds the benefit of using the flows entirely during the February through June period.</p> <p>As described in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, under the flow shifting scenarios, increased in total adult production can be further improved with refined flow, reservoir storage, and temperature management. Please see Chapter 19 for a SalSim use advisory and description of the limitations of both SalSim and optimized modeling runs. Please also see Master Response 3.1, Fish Protection, regarding the State Water Board's use of SalSim, the acknowledgement of limitations of the model, and the estimated fish produced from various SalSim runs. Please also see Master Response 3.1 regarding the use of best available science, benefits of the unimpaired flow approach, and current fish decline and the need for increased flow.</p> <p>The analyses presented in the SED do not focus solely on Central Valley Chinook salmon. As described in Chapter 7, Aquatic Biological Resources, key evaluation species are used to determine impacts of the LSJR alternatives on aquatic resources include anadromous fish, reservoir fish, and warmwater reservoir fish (including non-natives). Indicator species were selected because of their utility in evaluating broader ecosystem and community-level responses to environmental change. In particular, the responses of Central Valley fall-run Chinook salmon to changes in flow, water temperature, and other flow-related variables have been well studied and provide a general indication of the overall response of the ecosystem to hydrologic change. This also applies to the benefits evaluations provided in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30.</p>

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		<p>baseline is only 16%. (SED, at 19-71.) Since maximum flow shifting under 40% unimpaired flow will reduce unimpaired flow during the February-June period to 30%, Staff cannot claim both the 35% increase in floodplain inundation under 40% unimpaired flow, and the supposed increase in Chinook salmon production under maximum flow shifting. Simply put, Staff cannot have it both ways. This trade-off should be identified in the SED. Before the Board decides whether it will adopt the water quality control plan, Staff should analyze how maximum flow shifting will impact floodplain inundation, water temperature, storage, agriculture, groundwater pumping and hydropower.</p> <p>In sum, the benefits to Chinook salmon production under the 40% unimpaired flow requirement are essentially immeasurable, amounting to an increase of less than a quarter of one percent. Although the SED suggests that production numbers could be increased under the maximum flow shifting scenario, Staff failed to account for the impact of such flow shifting on floodplain inundation.</p> <p>Since Staff has indicated that benefits should be measured in terms of floodplain creation and water temperature improvements (rather than SalSim results) [Footnote 33: Transcript of Public Hearing before SWRCB, November 29, 2016, p. 272, Ins. 15-23 [Les Grober: "the main thing to say is that we're not relying on [SalSim results] to say this is the benefit. We're relying on the things that we showed that we have temperature improvements, we have floodplain habitat improvements, and these are things that have been shown to lead to increases in populations and resiliency and all sorts of measures elsewhere in other systems. So that's what we're relying upon to show the benefit."]], the benefit of maximum flow shifting, if any, is unknown.</p> <p>As the SalSim analysis fails to demonstrate that the Tributary Flow Objective will achieve any meaningful benefit to Chinook salmon production (which Staff has used as a proxy for protection of all fish and wildlife beneficial uses), the Board should decline to adopt the proposed objective because it does not protect a beneficial use.</p>	
3239	43	[ATT20: SED Figure 19-13. SalSim average total adult fall-run Chinook salmon production per year from 1994 to 2010 resulting from different flow cases. These results are the combined results for the Stanislaus, Tuolumne, and Merced Rivers. (Actual numbers from Table 19-32).]	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.
3239	44	<p>The SJTA Analysis demonstrates that the objectives do not protect the beneficial uses.</p> <p>The SED does not analyze a true implementation of the Tributary Flow Objective. The various modeling assumptions which Staff added to the Objective are outlined above. Accordingly, the SJTA hired consultants to analyze the impacts of implementing the Tributary Flow Objective without the various modeling assumptions included in the SED analysis. The SJTA consultants evaluated impacts on reservoir storage, water temperature, Chinook salmon production, and the fate of San Joaquin River flows in the Delta. Consulting engineer Daniel B. Steiner coordinated the development of two modeling runs on the Stanislaus, Tuolumne and Merced Rivers: (1) a baseline run, and (2) a 40% unimpaired flow run. Mr. Steiner performed the studies for the Stanislaus and Tuolumne Rivers, and MBK Engineers performed the studies for the Merced River.</p> <p>The tributary studies were combined with information from a contemporary CalSim study to derive results for the San Joaquin River and Vernalis. The results were used to examine impacts to storage on the Stanislaus River at New Melones Reservoir, Don Pedro Reservoir</p>	<p>Please see Master Response 1.1, General Comments, regarding the program-level document and program-level analysis. Please also see section on general methods and modeling regarding how differing opinions on modeling do not equate to inadequacy.</p> <p>The State Water Board has strived to use the best available science throughout the impacts analysis, consistent with the requirements of the certified regulatory planning process, and, in accordance with CEQA, used its best efforts to find out and disclose what it reasonably can. The State Water Board recognizes that different modeling assumptions can be used to evaluate environmental impacts associated with the plan amendments. Through the official public review process for the plan amendments, the State Water Board provided opportunities for formal public comment on the plan amendments. Comments were received on the 2012 Draft SED regarding the assumptions used in developing the Water Supply Effects (WSE) model and the use of the model to analyze impacts. In response, the WSE model was refined for use in the Recirculated Draft SED. Please see Chapter 4, Introduction to Analysis, and Appendix F.1, Hydrologic and Water Quality Modeling, for descriptions of the refinements.</p> <p>The comment references modeling runs performed for the commenter where any requirement for carryover</p>

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		<p>on the Tuolumne River, and Lake Exchequer on the Merced River. Consultant Avry Dotan of AD Consultants used the two sets of modeling runs to perform temperature analysis using HEC-5Q, and Chinook salmon production analysis on all three tributaries and the San Joaquin River using SalSim. Using Mr. Steiner’s data, consultant Dr. Susan Paulsen performed an analysis of the fate of San Joaquin River flows in the Delta.</p> <p>The first run reflects current baseline conditions (SJTA Baseline). The full set of modeling assumptions and results of the SJTA Baseline can be found in SJTA Attachment 5 [ATT5]. Stated briefly, the SJTA Baseline conditions on the Stanislaus River at times differ from the WSE baseline conditions: (1) VAMP flow requirements were not used, (2) CVP contractor allocations were revised to current assumptions (0-49-155 at <1,400<1,800>), and (3) a flow surrogate was used to represent minimum releases (June-September) for satisfaction of dissolved oxygen requirements. Differences in the modeling of Baseline conditions on the Tuolumne River were again VAMPrelated and associated with water demand and water diversion protocols. The same differences occurred with the Merced River modeling.</p> <p>The second set of modeling runs (SJTA 40% UIF) reflected the Tributary Flow Objective assuming the 40% unimpaired flow requirement, without several modeling assumptions embedded into the WSE model. The modeling assumptions and results of the SJTA 40% UIF condition can be found in SJTA Attachment 5. Briefly stated, the differences between the STJA 40% UIF and the SED’s Alternative 3 on the Stanislaus River were as follows: (1) the carryover storage requirement at New Melones Reservoir was reduced from 700 TAF to 80 TAF, effectively eliminating the carryover storage requirement, while retaining a minimum reservoir level to ensure continued operation of the model, (2) the refill criteria used in the WSE was eliminated entirely, (3) the minimum required diversions to OID and SSJID were eliminated, (4) flow shifting was eliminated, (5) CVP contractor allocation was revised to current assumptions (0-49-155 at <1,400<1,800>), and (6) a flow surrogate was used to represent minimum releases (June-September) for satisfaction of dissolved oxygen requirements. Differences in the modeling of the SJTA 40% UIF and the SED’s Alternative 3 on the Tuolumne River included a reduction of the required carryover storage target at Don Pedro Reservoir, elimination of reservoir refill criteria and minimum diversion requirements, and elimination of the flow shifting. Similar differences occurred with the Merced River modeling.</p> <p>The SJTA’s results show drastically different impacts to reservoir storage than those shown in the SED. In addition, the SJTA’s water temperature analysis shows increases in temperature across the entire stretch of the Stanislaus River from July through January that are not reflected in the Alternative 3 results. With respect to Chinook salmon production, the SJTA Baseline conditions show higher production numbers than the SJTA 40% UIF, and all the alternatives analyzed in the SED except for the maximum flow shifting alternative known as SB 40%MaxFS. The SJTA analysis also showed that San Joaquin River flows do not support the migration of fish through the Delta, insofar as approximately 1% of San Joaquin River flow would contribute towards Delta outflow under a true 40% unimpaired flow regime.</p>	<p>storage was “effectively eliminated.” However, the program of implementation requires carryover storage targets or other requirements to ensure that providing flows to meet the flow objectives will not have adverse temperature or other impacts on fish and wildlife. Therefore, the referenced modeling runs do not appear to reasonably represent implementation of the plan amendments as they omit requirements an operator would need to consider in implementing the program of implementation. Please see response to comment 3239-19 regarding carryover storage targets. Please also see Master Response 3.2, Surface Water Analyses and Modeling, regarding the reasonableness of the WSE model assumptions, the use of best available information to describe water use, the representation of surface water demand and reservoir operations, including carryover storage guidelines, and the use of the HEC-5Q temperature model.</p> <p>The State Water Board analyzed effects at different percentages of unimpaired flow in the SED to provide a wide-ranging and conservative approach to the analysis. Evaluating and showing effects from baseline to a high of 60% unimpaired flow allows full disclosure of the possible types of impacts and benefits that could occur from implementation of the plan amendments.</p> <p>Please see Master Response 3.1, Fish Protection, regarding the adequacy of modeling to support the analysis, benefits of the unimpaired flow approach, and the use of best available science.</p> <p>Please also see response to comment 3239-42 regarding flow shifting and the optimization of flows.</p>
3239	45	<p>Reservoir Storage</p> <p>The Stanislaus River was chosen as an example for examining impacts to reservoir storage caused by the Tributary Flow Objective. The modeling assumptions used in Alternative 3 of the SED to avoid depleting New Melones Reservoir were removed in the STJA 40% UIF model run. Among the assumptions eliminated were carryover storage, refill criteria, flow</p>	<p>Please see response to comment 3239-19 regarding carryover storage targets and response to comment 3239-44 regarding the modeling parameters required to reasonably represent implementation of the plan amendments.</p> <p>Please see Master Response 1.1, General Comments, regarding mitigation as defined by CEQA. Reservoir storage targets are part of the program of implementation, not a form of mitigation. The State Water Board</p>

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		<p>shifting and minimum diversions for OID and SSJD (SJTA Attachment 5 [ATT5]). A comparison of 40% unimpaired flow with those conditions and without those conditions is below.</p> <p>New Melones Storage under 40% unimpaired flow</p> <p>A complete summary of would-be storage levels in New Melones Reservoir at the end of September for the years 1922 through 2003 under a 40% unimpaired flow regime is reported in the SED in Appx. F1, Attachment 1 thereto, pages 7-9, Table 3. The storage levels reflected in this Table include all the assumptions in the WSE model, including carryover storage, refill criteria, flow shifting, and minimum district diversions. (SED, at Appx. F1, p. F.1-36.) The end-of- September storage levels were plotted on the graph below (SJTA Figure 2-6 [ATT21]).</p> <p>When the WSE storage target modelling assumptions are removed, storage in New Melones Reservoir changes drastically. The following graph (SJTA Figure 2-7 [ATT22]) shows reservoir storage under SJTA 40% UIF, i.e., without carryover storage, refill criteria, flow shifting, or minimum district diversions.</p> <p>The difference between SED Alternative 3 and SJTA 40% UIF are shown in the following graph (SJTA Figure 2-8 [ATT23]), where the blue bars represent end-of-September Storage in New Melones Reservoir under SJTA 40% UIF, and the red line represents storage under SED Alternative 3.</p> <p>The impact of the WSE modeling assumptions in Alternative 3 is clear. Without carryover storage requirements, refill criteria and various other assumptions that are not required by the water quality objectives, New Melones storage is repeatedly depleted down to the 80 TAF level used as a minimum for purposes of the SJTA model run. In other words, the model shows that New Melones Reservoir will repeatedly drain to dead pool in drier years if the Tributary Flow Objective is implemented at 40% unimpaired flow.</p> <p>SWB Staff did not model a 40% unimpaired flow requirement without carryover storage, refill criteria or flow shifting, and thus the true impact of the Tributary Flow Objective on reservoir storage is not included in the SED. As shown in this example for New Melones, the difference between the Tributary Flow Objective with carryover storage and refill criteria, and the Tributary Flow Objective without carryover storage and refill criteria, is substantial. Before the Board decides whether to adopt the proposed changes to the Bay-Delta Plan, Staff needs to present the Board with an analysis that shows the true impact of the Tributary Flow Objective on all the reservoirs impacted by the project, without carryover storage, refill criteria and the other modeling assumptions designed to mitigate the impact of the project on storage.</p>	<p>modeled potential reservoir operations for the purpose of 1) analyzing impacts of the plan amendments and 2) showing the range of potential impacts in such a way that the public and the State Water Board can compare the relative effects. The modeled operations are not intended to be prescriptive. Specific carryover storage requirements will be established when implementing the plan amendments through water rights and water quality proceedings. Please see Master Response 3.2, Surface Water Analyses and Modeling, for information on carryover storage assumptions in the WSE model and a comparison of the WSE model to the modeling analyses presented by commenters.</p>
3239	46	[ATT21: SJTA Figure 2-6. Storage levels (TAF) for New Melones Reservoir under 40% unimpaired flow, as reported in the SED for Alternative 3.]	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.
3239	47	[ATT22: SJTA Figure 2-7. Storage levels (TAF) for New Melones Reservoir with SJTA 40% UIF assumptions (no carryover storage, no refill criteria, no flow shifting and no minimum district diversions).]	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.
3239	48	[ATT23: SJTA Figure 2-8. Comparison of New Melones Reservoir storage-SJTA 40% UIF v. SED	The commenter provided this attachment for reference purposes in support of their comments. Those

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		Alternative 3.]	comments are addressed in these responses to comments; therefore, no additional response is required.
3239	49	<p>Water Temperature</p> <p>Consultant Avry Dotan of AD Consultants performed an analysis of water temperature on the Stanislaus River using HEC-5Q, the same modeling program used to perform the temperature analysis in the SED (SJTA Attachment 3 [ATT3]). The Stanislaus River modeled operations simulation developed by Mr. Steiner for the SJTA 40% UIF were used for this analysis, meaning that carryover storage, refill criteria and flow shifting were not included in the modeling assumptions.</p> <p>In the table below (SJTA Table 2-4 [ATT24]), SJTA Baseline was compared to SJTA 40% UIF, with increases in temperature shown in red, and decreases in temperature shown in blue. The results show increases in temperature across the entire stretch of the Stanislaus River from July through January, i.e., the months during which unimpaired flows are not required under the Tributary Flow Objective. Without flow shifting, carryover storage and refill criteria, there will be higher temperatures in all months outside the February-June period.</p> <p>The SED assumes that higher water temperatures are adverse to fish and wildlife beneficial uses. These adverse impacts are not reflected in the SED’s analysis because SWB Staff used a trial and error approach to avoid these impacts by iteratively tweaking the modeling assumptions to minimize (or mitigate against) adverse impacts to water temperature caused by implementation of the Tributary Flow Objective. Staff refers to this trial and error approach as an iterative process: "we had to iterate multiple times to find a set of operational constraints that did not make temperatures worse." (Transcript of Public Hearing before SWRCB, November 29, 2016, p. 62, lns. 5-7 [Will Anderson, Water Resources Control Engineer].)</p> <p>Of course, one of the many problems with this approach is that real-world operations do not allow for an iterative process where different constraints are tested in real time to minimize or avoid adverse results. This is critical because the temperature modeling is for "comparative analysis" purposes; it is not a predictive tool. (SED, at Appx. F1, p. F.1-190.) Thus, even if operators chose to follow all the operational constraints devised by State Water Board Staff during the iterative process, the water temperature results shown in the SED would not necessarily be achieved, and the model would not necessarily provide any guidance as to how they could be achieved.</p> <p>Before the State Water Board decides whether to adopt the proposed revisions to the Bay-Delta, Staff must present the Board with an analysis that shows the actual impact of the Tributary Flow Objective on water temperature in all three tributaries--without the operational constraints that were added to the model through trial and error to mitigate against higher instream temperatures.</p>	<p>Please see response to Comment 3239-42 regarding flow shifting scenarios.</p> <p>Please see response to comment 3239-44 regarding the assumptions used and refinements made in the SED and the modeling parameters required to reasonably represent implementation of the plan amendments.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the reasonableness of the WSE model assumptions, the representation of surface water demand and reservoir operations, including carryover storage guidelines, and the use of the HEC-5Q temperature model.</p> <p>Please see Master Response 3.1, Fish Protection, regarding the purpose of modeling and standards used, the adequacy of floodplain modeling, benefits of the unimpaired flow approach, and the use of best available science.</p> <p>As described in Appendix K, Revised Water Quality Control Plan, the State Water Board will establish a STM Working Group to assist with the implementation, monitoring and effectiveness assessment of the February through June LSJR flow requirements. This working group will be required to submit proposed annual plan for adaptive implementation actions for the coming season. The State Water Board recognizes that these plans will be based on a forecast from the best available information and may not accurately reflect actual conditions that occur during the February through June period. Accordingly, the State Water Board will consider this factor, and whether the hydrologic condition could have been planned for, in evaluating deviations (such as modifications to prevent undesirable temperature conditions) from these plans during real-time operations. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 2.2, Adaptive Implementation, for more information regarding the STM Working Group.</p>
3239	50	[ATT24: SJTA Table 2-4. Comparison of water temperature on the Stanislaus River under SJTA Baseline and SJTA 40% UIF.]	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.
3239	51	<p>Floodplain Habitat</p> <p>The SJTA incorporates the comments of TID, MID, OID, and SSIJID on floodplain habitat into these comments.</p>	To review responses to comments submitted by other entities within the comment period on the 2016 Recirculated Draft SED, please refer to the index of commenters in Volume 3 to locate the letter number(s) of interest.

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3239	52	<p>SalSim</p> <p>SJTA consultant Avry Dotan performed a SalSim analysis for SJTA Baseline and SJTA 40% UIF. (SJTA Attachment 3 [ATT3].) The SJTA Baseline does not include VAMP flows, as that program has ended. As shown in SJTA Figure 2-9 [ATT25], the SJTA Baseline run produces higher numbers (13,490) than all of the State Water Board’s runs, except for the SB40% MAX Flow Shifting run. SJTA Baseline also produces more fish than SJTA 40% UIF (12,680). (SJTA Figure 2-9). The specific production numbers for each model run for water years 1994 through 2009 are set forth in SJTA Table 2-5 [ATT26].</p> <p>These SalSim results suggest that current conditions will result in higher Chinook salmon production numbers (13,490 fish) than Staff’s proposed project, regardless of whether that project is modeled with carryover storage, refill criteria and WSE flow shifting (SB40% UF) (12,476 fish), or without those assumptions (SJTA40% UIF) (12,680 fish). The only conditions under which SalSim produces better results than current conditions are under Staff’s maximum flow shifting scenario, where 25% of the volume of unimpaired flow from February-June is shifted to September-December in all water years. (SED, at 19-80.)</p> <p>This maximum flow shifting scenario differs from Staff’s other flow shifting scenario where no more than 25% of the volume of unimpaired flow from February-June is shifted to July-November in wet water years. Notably, Staff did not analyze the impacts of its maximum flow shifting scenario on floodplain habitat. Thus, any benefits to floodplain habitat that Staff perceived from Alternative 3 will not coexist with these supposed benefits to Chinook salmon production shown in SalSim under maximum flow shifting. Moreover, Staff did not analyze the impacts of maximum flow shifting on any other components, including water temperature, storage, agriculture, groundwater or hydropower. As such, it is not a viable option for the SWB to choose at this time.</p> <p>If the SalSim model is to be trusted, then the current conditions, as reflected in SJTA Baseline, are superior to any of the analyzed options set forth in the SED. Before the State Water Board decides whether it will adopt the proposed revisions to the Bay-Delta Plan, these results need to be analyzed. If current conditions would result in higher production numbers for Chinook salmon, and if the goal of the water quality control plan is to increase those production numbers, then Staff’s proposed plan does not achieve the goal and must be rejected.</p>	<p>Please see response to comment 3239-42 regarding SalSim results and the flow shifting scenarios.</p>
3239	53	<p>[ATT25: SJTA Figure 2-9. SalSim for SJTA Baseline and SJTA 40% UIF compared to SalSim results in SED.]</p>	<p>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.</p>
3239	54	<p>[ATT26: SJTA Table 2-5. SalSim results for SJTA Baseline and SJTA 40% UIF compared to SalSim results in SED.]</p>	<p>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.</p>
3239	55	<p>Fate of San Joaquin River flows in the Delta</p> <p>Dr. Susan Paulsen is a renowned expert in the hydrodynamics, hydrology, and water quality of the Delta. In collaboration with Dan Steiner, Dr. Paulsen used the Delta Simulation Model II (DSM2) [Footnote 34: For more information, see http://baydeltaoffice.water.ca.gov/modeling/deltamodeling/models/dsm2/dsm2.cfm.] to analyze the fate of San Joaquin River flows that reach the Delta under baseline conditions (Case 1) and under the SJTA’s 40% unimpaired flow scenario (Case 2). (SJTA Attachment 6 [ATT6].) Specifically, she examined the fate of San Joaquin River inflow in a below-normal</p>	<p>Please see Chapter 7, Aquatic Biological Resources, Impact AQUA-12, for a discussion of the analysis of changes in southern Delta and estuarine habitat. The SED method for approximating limitations on export pumping is appropriate for characterizing baseline conditions in the 2009 time frame. Please see Master Response 2.5, Baseline and No Project, for how baseline characterizes the existing environment at the time of the Notice of Preparation.</p> <p>Although increased spring inflows from the San Joaquin River in response to implementation of Alternative 3 could result in increased export pumping and entrainment risk for juvenile salmonids entering the Delta, the proposed plan amendments significantly improve conditions for fish spawning, rearing, and migration in the</p>

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		<p>year (1966), a dry year (1968), and a critically dry year (1988). The results demonstrate that very little San Joaquin River inflow to the Delta--even at 40% unimpaired flow on the three eastside tributaries (Case 2)--moves through the Delta and exits via the San Francisco Bay. The table [ATT27] is a summary of Dr. Paulsen's results comparing Delta Inflow from the San Joaquin River, Delta exports and Delta outflow under baseline (Case 1) and 40% unimpaired flow (Case 2) conditions.</p> <p>As can be seen in the table [ATT27], very little San Joaquin River inflow to the Delta contributes to Delta outflow under baseline or 40% unimpaired flow conditions. Instead, most of the water is exported by the CVP and SWP. (SJTA Attachment 6, p. 7, 18.) In fact, under 40% unimpaired flow, more water is exported by the CVP and SWP than under baseline conditions. The increased Delta inflow from the San Joaquin River under 40% unimpaired flow simply does not translate to an increase in Delta outflow for the benefit of fish "migrating through the Delta." (SED, at Appx. K, p. 18.) As shown in the table [ATT28]--also derived from Dr. Paulsen's results--approximately 1% of San Joaquin River inflow contributes to Delta Outflow. (SJTA Attachment 6, p. 7, 17.)</p> <p>The following graphs [ATT29 - ATT31] depict the amount of San Joaquin River inflow (February 1-June 30) that leaves the Delta via exports, diversions, and as Delta outflow in the three exemplar water years under 40% unimpaired flow.</p> <p>Without any analysis, the WQCP assumes that the Tributary Flow Objective can be adaptively implemented to support and maintain San Joaquin River watershed fish "migrating through the Delta." (SED, at Appx. K, p. 30.) In light of Dr. Paulsen's results regarding the fate of San Joaquin River inflow, the SJTA submits that the Board should reject this assumption. The imposition of a 40% unimpaired flow requirement on the three eastside tributaries will increase the amount of San Joaquin River water contributing to Delta outflow by 1.1% or less (e.g., from 0.2% to 1.3% in WY 1966) compared to baseline conditions in below normal, dry and critically dry years. (SJTA Table 2-7 [ATT28].) Even with the increased inflow under 40% unimpaired flow, far less than 2 percent of San Joaquin River inflow will leave the Delta as Delta outflow.</p> <p>In stark contrast, more than 50% of San Joaquin River inflow will be exported out of the Delta by the CVP and SWP under 40% unimpaired flow. In fact, with the increased flows at Vernalis under 40% unimpaired flow, exports and diversion (CVP + SWP + CCWD) can be expected to increase by 291,000 acre-feet in below normal years, by 190,000 acre feet in dry years, and by 158,000 acre feet in critically dry years. (SJTA Table 2-6 [ATT27].) The real beneficiary of the increase in San Joaquin River flows is the exporters, not the fish migrating through the Delta.</p> <p>Moreover, Dr. Paulsen's results call into question the conclusions from the Board's Delta Flow Criteria Report of 2010, which found that 60% unimpaired flow from the San Joaquin River would result in significant benefits to fall-run Chinook salmon migrating through the Delta. The Delta Flow Criteria Report focused solely on San Joaquin River inflow, neglecting to analyze Delta outflow. It is evident from Dr. Paulsen's results that San Joaquin River inflow provides very little contribution to Delta outflow, and thus the Delta Flow Criteria Report does not provide a complete picture of what is necessary to create significant benefits to migrating Chinook salmon. In sum, the Board should reject the assumption in the WQCP that the Tributary Flow Objective can be adaptively adjusted to benefit San Joaquin River watershed fish in their migration through the Delta. San Joaquin River flows do not provide any significant contributions to Delta outflow, and will not assist in migratory fish</p>	<p>LSJR. In fact, a primary purpose of the plan amendments is to make fall-run Chinook populations, which are a sensitive indicator species, more robust and therefore less susceptible to a host of stressors, including entrainment at the CVP and SWP. In addition, SJR inflow generally counteracts the adverse effects of the CVP/SWP export pumps on fish by providing higher inflows, which tend to result in movement of fish and larvae away from the southern Delta where the CVP/SWP export pumps are located. Thus, any increase in LSJR inflow is a fisheries benefit. Please see Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, regarding fish benefits that result from the plan amendments. Please also see Chapter 7, Section 7.2.4 Southern Delta and Master Response 3.1, Fisheries Benefits for more explanation. Please also see Master Response 2.1, Amendments to the Water Quality Control Plan, Suggested Modifications Not Made for a description of why the LSJR program of implementation is sufficient to protect LSJR flows.</p> <p>It should be recognized that 2010 Delta Flow Criteria report does not focus solely on San Joaquin River inflow but provides a comprehensive review of the flow and operational requirements for fishery protection in the entire Delta ecosystem, including criteria to protect fish from mortality in the central and southern Delta resulting from operations of the State and federal export facilities. Please see Master Responses 1.1, General Comments; 1.2, Water Quality Control Planning Process; and, 3.1, Fish Protection regarding the Delta Flow Criteria Report.</p> <p>The calculation of permissible exports pumping rates at the CVP and SWP facilities in the southern Delta is complicated and tied to facility capacity as well as multiple regulatory requirements, including the NMFS BiOp, the USFWS BiOp, D-1641, and permits from the Army Corps of Engineers.</p> <p>Prior to implementation of the 2009 NMFS BiOp, when D-1641 export limits were controlling, the maximum export rate in April and May was indexed on 100% of SJR outflow or greater (up to 35% of Delta inflow in certain periods). It is crucial to note that an index of 100% does not mean 100% of the molecules of the SJR are being exported as the SJR mingles with other flows in the Delta. Currently, under the 2012 requirements of NMFS BiOp RPA IV.2.1, the only time the export rate is permitted to be 100% is in critically dry years for health and safety reasons. This means that in every year but a critically dry year, any increase in the percentage of SJR inflow that occurs due to the proposed plan amendments is improving SJR inflow contributions to outflow in an amount that either equals or exceeds the index that is allowed for export pumping. In other words, while the overall volume of water for export could increase, the volume of water for outflow is likewise increasing.</p> <p>The Paulsen report cited in this comment provides DSM2 results for the amount of February-June San Joaquin River water that is estimated to be exported from the Delta by the CVP, SWP, and CCWD but selectively considered only three years that were below normal, dry, and critically dry. That means that the degree of improvement to outflow is masked in an analysis that only considers three years with one of those three being critically dry. Importantly, as identified in Appendix F.1, Hydrologic and Water Quality Modeling, F.1.7.2, Methods to Estimate Changes in Delta Exports and Outflow, the average annual contribution of the SJR during water years 1995-2013 was only about 14 percent of the combined average exports and Delta outflow. To the extent that implementation of the plan amendments increases SJR outflow, it would still remain a nominal percentage of the exports and outflow because the hydrodynamics of the Delta are dominated by inflows from the Sacramento River watershed (DWR 2013).</p>

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		moving through the Delta, even at 40% unimpaired flow.	
3239	56	[ATT27: SJTA Table 2-6: Summary of Delta Inflow, Exports and Outflow derived from SJTA Attachment 6 [ATT6].]	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.
3239	57	[ATT28: SJTA Table 2-7: Summary of Delta Outflow in TAF; Percentage of SJR inflow contributing to Delta Outflow.]	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.
3239	58	[ATT29: SJTA Figure 2-10: Consumption of San Joaquin River inflow that reaches Vernalis under 40% unimpaired flow in a below normal year (1966).]	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.
3239	59	[ATT30: SJTA Figure 2-11: Consumption of San Joaquin River inflow that reaches Vernalis under 40% unimpaired flow in a dry year (1968).]	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.
3239	60	[ATT31: SJTA Figure 2-12: Consumption of San Joaquin River inflow that reaches Vernalis under 40% unimpaired flow in critically dry year (1988).]	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.
3239	61	<p>Summary: Comparison of SWB results and SJTA results for Tributary Flow Objective</p> <p>The analysis provided by the SJTA demonstrates that when the Tributary Flow Objective is modeled without the various operational constraints that are not required by the objective itself, such as carryover storage, refill criteria and flow shifting, the impact to reservoir storage is far more significant than what is portrayed in the SED. In addition, the supposed benefits of the project, such as lower water temperatures, will not be achieved in the manner suggested in the SED. Specifically, water temperatures in the July-January period will increase compared to baseline.</p> <p>Moreover, the SalSim results show that current conditions are actually superior to any of the analyzed proposals set forth in the SED. Assuming Staff is correct that improved conditions for fall-run Chinook salmon will translate to protection of all the beneficial uses identified in the water quality control plan, then the proposed project needs to be rejected. The SJTA analysis demonstrates that the supposed temperature benefits achieved by the Tributary Flow Objective will not occur, nor will the supposed benefits to Chinook salmon production numbers.</p> <p>Finally, as nearly none of the San Joaquin River water contributed to Delta outflow, the Board should reject the assumption in the SED that increased flows on the three eastside tributaries will assist fish migrating through the Delta. Given the SJTA's analysis, the Board must decline to adopt the proposed Tributary flow objective.</p>	<p>Please see response to comment 3239-19 and Master Response 3.2, Surface Water Analyses and Modeling, for responses to comments regarding the analysis provided by SJTA. The SED modeling is credible because it is based on reasonable assumptions and allows comparative analyses between baseline and alternative conditions. The WSE model inputs were derived from CALSIM, and at the watershed scale, WSE model results are comparable to evaluations of changes in available supply in other models (e.g., CALSIM, or the water balance models for individual tributaries developed by irrigation districts). The WSE model is an appropriate and sufficiently correct tool to reasonably represent and disclose types of potential effects associated the amendments to the water quality control plan.</p> <p>Please see Chapters 7 and 19 for information regarding how implementation of the proposed plan amendments would provide substantial improvements to cold water habitat and potential benefits to fall-run chinook salmon. Please also see Master Response 1.1, General Comments regarding the approach to analyses and how differing opinions on modeling do not equate to inadequacy.</p> <p>Please see Master Response 3.1, Fish Protection, for an explanation of why the State Water Board did not rely upon SalSim due to limitations in the model. Please also see the SalSim use advisory in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, which explains why SalSim information should be interpreted with caution because of the identified errors in SalSim equations such as responses to temperature and floodplain changes.</p> <p>Please see response to comment 3239-55 regarding fish and wildlife benefits from SJR contributions to outflow with implementation of the proposed plan amendments.</p> <p>The SED adequately identifies the significant effects of the planning approval at hand, while deferring the development of detailed site-specific information to future project-specific review. The SED has been prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes into account environmental consequences (Cal. Code Regs., tit. 14, § 15151). The SJTA analysis does not invalidate the analysis produced in the SED and used for decision-making purposes regarding plan amendment adoption.</p>
3239	62	<p>Salmon Doubling Objective</p> <p>The narrative objective for the protection of salmon is set forth as: "Water quality conditions shall be maintained, together with other measures in the watershed, sufficient to</p>	The salmon protection objective in the 2006 Bay-Delta Plan remains unchanged and is not part of plan amendments. Comments regarding the adoption of the salmon protection objective and the program of implementation, including the quote provided by the commenter, are beyond the scope of the plan

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		<p>achieve a doubling of natural production of chinook salmon from the average production of 1967-1991, consistent with the provisions of State and federal law." (SED, at Appx. K, p. 17.)</p> <p>The 2012 version of the draft WQCP did not reference the salmon doubling objective and was silent on whether it would remain a requirement or not. However, the 2016 draft version makes clear that Staff "expects that implementation of the numeric flow-dependent objectives and other non-flow measures will implement this objective." (SED, at Appx. K, p. 53.) This statement was written in reference to the flows required under D-1641, but it remains unchanged in the revised WQCP, suggesting that the Board anticipates the implementation of the new flow objectives will result in doubling of the natural production of Chinook salmon. (SED, at Appx. K, p. 52-53.)</p> <p>Both the history of the salmon doubling objective, and existing science (as reported in the 2010 Delta Flow Criteria Report), demonstrate that the Doubling Objective cannot be achieved through the implementation of the proposed flow objectives. When the Board chooses a method of implementation that is shown to be incapable of meeting the objectives, then that aspect of the program of implementation will be deemed "illusory" and in violation of the Board's obligation to implement its own plan. (State Water Resources Control Bd. Cases (2006) 136 Cal.App.4th 674, 734 [if it had been shown that DWR and USBR were incapable of meeting the salinity objectives in the water quality control plan, then the Board's allocation of that responsibility to DWR and USBR in D-1641 would have been "illusory" and a violation of the Board's obligation to implement its own plan]; see Water Code, § 13247 [requiring the Board to comply with its own water quality control plan].)</p> <p>By choosing a method of implementation that has been shown to be incapable of achieving the Salmon Doubling Objective, the revised WQCP will violate Water Code section 13247, which requires the Board to comply with its own water quality control plan.</p>	<p>amendments.</p> <p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the relationship between the plan amendments and the salmon protection objective.</p>
3239	63	<p>The Doubling Objective lacks clarity.</p> <p>As a preliminary matter, it is noted that the Doubling Objective lacks clarity. The plain language of the objective is clear that it refers only to the natural production of Chinook salmon. (SED, at Appx. K, p. 17.) Fish & Game Code section 6900, et seq., and the Central Valley Project Improvement Act ("CVPIA") are also clear that the regulation is limited to the natural population.</p> <p>As part of these comments on the WQCP, the SJTA submits a letter from the San Joaquin River Group Authority to Charlie Hoppin of the State Water Resources Control Board, dated October 12, 2011, which more fully summarizes the legislative history of SB 2661, Fish & Game Code § 6900 et seq. (SJTA Attachment 7 [ATT7]). The Pacific Coast Federation of Fisherman's Association requested the word "natural" be inserted in front of "production" throughout the bill. The legislation was changed accordingly to include the modifier of "natural" before the word "production" throughout the bill. In every section except the "Definitions" section, the term "natural production" occurs. In the "Definitions" section, the term "Production" is not limited to "natural." (Fish & Game Code, § 6911.) This change to "natural production" made the ascertainment of the Doubling Objective impossible to discern.</p> <p>The interpretation of the regulation with regard to natural production has lacked clarity and is simply fraught with error. The Department of Fish & Game was tasked with determining the elements of the fish doubling program and transmitting a report to the Legislature</p>	<p>The salmon protection objective in the 2006 Bay-Delta Plan remains unchanged and is not part of plan amendments. Comments regarding the adoption of the salmon protection objective and the program of implementation, including the quote provided by the commenter, are beyond the scope of the plan amendments. No further response is required.</p>

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		<p>describing those elements. (Fish & Game Code, § 6924.) The report includes a fundamental flaw: it makes no distinction between hatchery fish and natural fish. The Department of Fish & Wildlife relied on carcass surveys on the three tributaries to arrive at a population number. Carcass surveys are inherently unreliable due to the level of effort extended, timing of the survey, expertise of the spotters and predation. Carcass surveys are conducted by two to three people in a boat moving downstream looking for carcasses. When a carcass is found, it is counted and the head is removed for otolith sampling and its body is returned to the River. This leads to human error, double counting and the inability to distinguish between hatchery and natural fish populations.</p> <p>In contrast, the Stanislaus and Tuolumne Rivers have weirs which automatically count and photograph every Central Valley fall-run Chinook salmon returning to the river to spawn. While not 100% accurate, direct counts from the weirs are more accurate and precise than estimates from the Department of Fish & Wildlife carcass surveys. Comparing the direct counts at the weirs and the estimates generated by the carcass surveys with the early Department of Fish & Wildlife carcass survey reveals a large margin of error which may have overstated the 1967-1991 population by more than 50% due to the lack of distinction between natural and hatchery fish. This renders the baseline unreliable.</p> <p>This failure violates the Fish and Game Code section 6901[e][f], which requires distinction:</p> <p>"[e] Proper salmon and steelhead trout resource management requires maintaining adequate levels of natural, as compared to hatchery, spawning and rearing.</p> <p>"[f] Reliance upon hatchery production of salmon and steelhead trout in California is at or near the maximum percentage that it should occupy in the mix of natural and artificial hatchery production in the state. Hatchery production may be an appropriate means of protecting and increasing salmon and steelhead in specific situations; however, when both are feasible alternatives, preference shall be given to natural production."</p> <p>Department of Fish & Wildlife made no such distinction. The numbers to set the goal are wrong.</p>	
3239	64	[ATT32: SJTA Table 2-8: Comparison of weir data and carcass survey data.]	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.
3239	65	<p>The salmon doubling objective cannot be met for many reasons.</p> <p>Doubling requires state-wide contribution.</p> <p>The doubling requirement contemplates the doubling of natural salmon production across the entire State, not merely the San Joaquin River or the three eastside tributaries. (see Fish & Game Code, § 6912 [defining the term "program" as "the program protecting and increasing the naturally spawning salmon and steelhead trout of the state"]; CVPIA, P.L. 102-575, § 3402[a] [stating the purpose of the act as being "to protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River basins in California"].) Thus, if the total natural production of salmon in the Central Valley is doubled, the statute will be satisfied irrespective of whether the natural production is doubled in any particular river. The SJTA provided a letter to the State Water Board to this effect on October 12, 2011, when the Board indicated that it was considering adoption of a doubling</p>	The salmon protection objective in the 2006 Bay-Delta Plan remains unchanged and is not part of plan amendments. Comments regarding the adoption of the salmon protection objective and the program of implementation, including the quote provided by the commenter, are beyond the scope of the plan amendments. No further response is required.

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		objective. (SJTA Attachment 7 [ATT7].)	
3239	66	<p>The fishery is dominated by hatchery fish.</p> <p>There is no natural production of Central Valley fall-run Chinook Salmon. The entire Central Valley fall-run Chinook salmon fishery has been overrun by hatchery practices. Currently, hatcheries dump 32,000,000 smolts (not fry or parr) into the Bay-Delta. (SED, at 7-15.) The natural production of Central Valley fall-run Chinook salmon smolts pales in comparison to this number. In determining whether a natural population exists, the term "natural production" must be explained and examined. In the true sense of the word "natural," there is no such production on the tributaries. Starting in Spring 2007, Department of Fish & Wildlife began the Constant Fractional Marking ("CFM") program to determine, among other things, the proportions of hatchery and natural origin returning fish. Under the program, 25% of hatchery releases for fall-run Chinook salmon were marked by the removal of the adipose fin (ad-clipped) and tagged with an internal Code Wire Tag ("CWT"). Since 2010, the Stanislaus River weir has recorded 22% to 86% ad-clipped fish, and the Tuolumne River weir has recorded 11% to 50% ad-clipped fish.</p> <p>Approximately 25% of hatchery production is marked through the CFM Program. So only 1 out of 4 hatchery fish released is identifiable by an adipose fin clip. As the proportions of tagged fish observed at the Stanislaus and Tuolumne weirs in recent years is also roughly 25%, (and sometimes higher) this indicates that adult abundance in these streams continues to be dominated by hatchery fish. There are no hatcheries on the Stanislaus or Tuolumne Rivers so these are fish straying to these streams to spawn.</p>	<p>The salmon protection objective in the 2006 Bay-Delta Plan remains unchanged and is not part of plan amendments. Comments regarding the adoption of the salmon protection objective and the program of implementation, including the quote provided by the commenter, are beyond the scope of the plan amendments.</p> <p>Please see Master Response 3.1, Fish Protection, and SED Chapter 7, Aquatic Biological Resources, for responses to comments and information regarding fish hatcheries.</p>
3239	67	[ATT33: SJTA Table 2-9. Stanislaus River weir data.]	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.
3239	68	[ATT34: SJTA Table 2-10. Tuolumne River weir data.]	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.
3239	69	<p>Ocean harvest impedes achievement of the doubling goal.</p> <p>The initial population levels (should be production levels) for San Joaquin River Central Valley fall-run Chinook salmon could not be done because Department of Fish & Wildlife did not know how many fish were being harvested. (DFW (1994) p. 26, 32.) [Footnote 38: As explained in the letter, Department of Fish & Wildlife focused on 1967-1991 population, i.e., escapement, or adult fish returning to the streams. Why they looked at population and not production is unknown.] Harvest plays a key role in determining "production." "Production" is all adult Central Valley fall-run Chinook salmon. It includes harvest, both in the ocean and inland, recreational and commercial.</p> <p>The doubling goal will never be achieved because the Magnusson-Stevens Act directs National Marine Fisheries Service to maximize the harvest of Central Valley fall-run Chinook salmon. NMFS has determined that 122,000 to 180,000 natural and hatchery spawners is sufficient to maintain ocean harvest of 50-65% Central Valley fall-run Chinook salmon. (see SJTA Attachment 9 [ATT9], p. 4) [Combined Memorandum of Federal Defendants' Cross-Motion for Summary Judgment and Opposition to Plaintiff's Motion for Summary Judgment, San Joaquin River Group Authority v. National Marine Fisheries Service, et al., U.S. District Court, Eastern Dist. of California, Case 1:11-cv-00725 (Document 73-1), filed 8/19/11.)</p> <p>Given the number of spawners and the ocean harvest rates set by NMFS, the doubling of</p>	The salmon protection objective in the 2006 Bay-Delta Plan remains unchanged and is not part of plan amendments. Comments regarding the adoption of the salmon protection objective and the program of implementation, including the quote provided by the commenter, are beyond the scope of the plan amendments. No further response is required.

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		production itself cannot be achieved.	
3239	70	<p>The Delta Flow Criteria Report demonstrates the Implementation of the flow objectives will not achieve the Salmon Doubling Objective.</p> <p>The 2010 Delta Flow Criteria Report drafted in accordance with Water Code section 85086(c)[1] concluded that an average of 10,000 cfs at Vernalis from the period of March through June "may provide conditions necessary to achieve doubling of San Joaquin basin fall-run." (Delta Flow Criteria Report, p. 119.) The report also concluded that 10,000 cfs at Vernalis from March through June could be achieved in approximately 45% of water years with an unimpaired flow of 60% from the San Joaquin Valley. (Delta Flow Criteria Report, p. 121, Figure 20a.)</p> <p>Critically, this calculation assumed 60% unimpaired flow contributions from the entire San Joaquin Valley, comprising nine sub-basins, including the Stanislaus River at Melones Reservoir, the San Joaquin Valley Floor, the Tuolumne River at Don Pedro Reservoir, the Merced River at Exchequer Reservoir, the Chowchilla River at Buchanan Reservoir, the Fresno River near Daulton, the San Joaquin River at Millerton Reservoir, the Tulare Lake Basin Outflow, and the San Joaquin Valley West Side Minor Streams. (Delta Flow Criteria Report, p. 97.)</p> <p>From all of these sources, the average unimpaired flow at Vernalis for the months of February through June (1921-2003) was 529,000 acre feet (February), 668,000 acre feet (March), 929,000 acre feet (April), 1,467,000 acre feet (May), 1,117,000 acre feet (June), for a summed average amount of 4,710,000 acre feet over all five months. (Delta Flow Criteria Report, p. 97; see also California Central Valley Flow Data, Fourth Edition Draft, California Department of Water Resources (May 2007), p. 45.)</p> <p>When unimpaired flow contributions from the San Joaquin Valley are reduced from nine sub-basins to three, as Staff is proposing in Phase 1, the flow rate of 10,000 cfs can only be achieved at Vernalis in the wettest of water years. For instance, under a requirement of 40% unimpaired flow, 10,000 cfs is only achieved at Vernalis from February through June at the 90% exceedance level and above. (SED, at Appx. F1, p. F-129.) Even under a requirement of 60% unimpaired flow from the Stanislaus, Tuolumne and Merced Rivers, 10,000 cfs is only achieved at Vernalis from February through June at the 90% exceedance level and above, although 10,000 cfs can be achieved in the months of May and June at the 80% exceedance level as well. (SED, at Appx. F1, p. F.1-142.) Thus, maintaining 30% to 50% unimpaired flow from the Stanislaus, Tuolumne and Merced Rivers will never achieve the doubling goal.</p>	<p>Please see Master Responses 1.1, General Comments, 1.2, Water Quality Control Planning Process, and 3.1, Fish Protection, regarding the Delta Flow Criteria Report and how its purpose and scope differs from the plan amendments. As stated in the Delta Flow Criteria Report, the "flow criteria contained in this report do not represent flows that might be protective under other conditions." (Delta Flow Criteria Report at p.4.)</p> <p>Please see response to comment 3239-62 and Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the relationship between the plan amendments and the salmon protection objective.</p> <p>Please see Master Response 2.2, Adaptive Implementation for a description of the adaptive implementation framework and adaptive methods. The proposed plan amendments establish a numeric percent of unimpaired flow requirement from February through June within an adaptive management range. The percent of unimpaired flow requirement defines a "block of water" or "water budget" that will be managed by either (a) providing a fixed unimpaired flow volume, for example 40%, throughout the period, or (b) managing the block of water in real time using adaptive methods identified in the program of implementation. This adaptive approach allows for shifting the percent of UF above or below 40% in response to real-time information about current hydrological and biological conditions to achieve a greater level of beneficial use protection. The ability to shape flows and the potential benefits of shaping flows were considered in the 2010 Delta Flow Criteria Report. In this way, the LSJR flow objectives have the potential to provide better biological results than adherence to percent of unimpaired flow alone.</p> <p>The proposed LSJR plan amendments focus on the river segments in the SJR watershed that currently support salmonids. The amendments are proposed because the 2006 Bay-Delta Plan water quality objectives on the SJR at Vernalis do not provide reasonable protection for fish and wildlife beneficial uses. The purpose of the plan amendments is to establish flow objectives and a program of implementation for the LSJR, including the three eastside salmon-bearing tributaries. The plan amendments apply to the entire migration pathway of salmon from the rim dams on the three salmon bearing tributaries of the SJR to the SJR near Vernalis.</p>
3239	71	<p>The Proposed Objectives are unreasonable and violate the Porter-Cologne Act.</p> <p>In the Porter-Cologne Water Quality Control Act (the "Porter-Cologne Act"), the Legislature declared that the people of the state have "a primary interest in the conservation, control, and utilization of the water resources of the state," and that the quality of the waters must be protected for "use and enjoyment by the people . . ." (Water Code, § 13000.) The Legislature has charged the State Water Board, and the regional water boards, with the "primary responsibility for the coordination and control of water quality." (Water Code, § 13001.)</p> <p>The authority of the water boards to regulate water quality is not unchecked. The boards must adhere to specific policies, the most fundamental of which is that the regulation of any</p>	<p>Please also see Master Response 1.2 regarding the Porter-Cologne Water Quality Control Act, the Clean Water Act, the wide authority invested in the State Water Board to formulate water quality control plans, and the State Water Board's appropriate consideration of the factors identified in Porter-Cologne section 13241.</p> <p>Please refer to the Executive Summary, Chapter 3, Alternatives, and Chapter 18, Summary of Impacts and Comparison of Alternatives, for a justification for recommending LSJR and SDWQ alternatives for adoption. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for additional justification for the plan amendments, including 13241 factors.</p> <p>The SED has been prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes into account environmental consequences and</p>

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		<p>activities affecting water quality must be "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." (Water Code, § 13000; see also Water Code, § 13001, 13140.) Moreover, while the boards have primary responsibility for controlling water quality, they must "consult with and carefully evaluate the recommendations of concerned federal, state and local agencies." (Water Code, § 13144, 13240.)</p> <p>The mechanism provided to the water boards for protecting water quality is the "water quality control plan." (Water Code, § 13170, 13240.) A water quality control plan must include (1) a set of beneficial uses to be protected by the plan, (2) a set of objectives designed to protect those beneficial uses, and (3) a program of implementation for achieving those objectives. (Water Code, § 13050[j], 13241, 13242.) In establishing the objectives, the boards must "ensure the reasonable protection of beneficial uses and the prevention of nuisance." (Water Code, § 13241.)</p> <p>The boards must also consider, at a minimum, all of the following factors: (1) past, present and probable future beneficial uses of water [Footnote 39: The requirement that the Board consider past, present and future beneficial uses of water under Water Code section 13241 is similar to the mandate that the Board consider all demands being made upon the waters involved under Water Code section 13000, but the latter requirement is slightly broader because not every demand being made on the waters involved constitutes a beneficial use in and of itself.], (2) environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto, (3) water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water 39 quality in the area, (4) economic considerations, (5) the need for developing housing within the region, and (6) the need to develop and use recycled water. (Water Code, § 13241.) Simply put, the objectives must be "reasonable" in their protection of the identified beneficial uses, considering all relevant factors. (Water Code, § 13000, 13241.)</p> <p>The State Water Board acts in a legislative capacity in setting water quality objectives, and is thus accorded a measure of deference in doing so. (Racanelli, 182 Cal.App.3d at 112.) However, this deference has several concrete limitations: (1) the Board must act within the scope of its delegated authority, (2) the Board must employ fair procedures, and (3) and the Board's action must be reasonable. (Ibid.) The courts have authority to assess whether the Board's action meets the reasonableness standard, and will not uphold the agency's action if it is "arbitrary, capricious, or lacking in evidentiary support." (Id. at 113, citing California Hotel & Motel Assn. v. Industrial Welfare Com. (1979) 25 Cal.3d 200, 212.) When assessing reasonableness, courts "must ensure that an agency has adequately considered all relevant factors, and has demonstrated a rational connection between those factors, the choice made, and the purposes of the [Porter-Cologne Act]" (Ibid..)</p> <p>The analysis in the SED is insufficient for the Board to conclude that the revised objectives for the protection of fish and wildlife are reasonable considering all relevant factors. The SED does not demonstrate any rational connection between the objectives chosen and the factors that must be considered when setting water quality objectives. Accordingly, the Board must decline to adopt the proposed objectives set forth in Appx. K of the SED.</p>	<p>the proposed planning level approval (Cal. Code Regs., tit. 14, § 15151).</p> <p>As discussed in the Executive Summary, Section ES10, Intended Uses of This SED, section 13241 identifies certain factors that must be evaluated when establishing water quality objectives. However, section 13241 does not require precise quantification of the water involved or of the benefits conferred. (City of Arcadia v. State Water Res. Control Bd. (2010) 191 Cal.App.4th 156, 177 ["Section 13241 does not specify how a water board must go about considering the specified factors. Nor does it require the board to make specific findings on the factors."].)</p> <p>The State Water Board will appropriately consider the factors listed in section 13241 in determining whether and how to establish the LSJR flow and SDWQ objectives. The information supporting the State Water Board's determination is contained in the SED. The section 13241 factors are an inherent part of the analyses in the SED for decision makers to understand the impacts of the proposed objectives not only on the environment, but also on other beneficial uses, economics and other important considerations. Table ES-27 summarizes the primary locations in the SED where information regarding the section 13241 factors may be found.</p>
3239	72	<p>The SED fails to consider whether the objectives provide reasonable protection considering all the demands and other beneficial uses of the waters involved.</p> <p>The Tributary Flow Objective and the Vernalis Flow Objective target the waters of the</p>	<p>Please see response to comment 3239-23, regarding State Water Board consideration of beneficial uses within the context of the water quality control planning process. Please also see Master Response 1.1, General Comments, regarding substantial evidence in the SED.</p>

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		<p>Stanislaus, Tuolumne and Merced Rivers. (SED, at Appx. K, p. 18, 29.) Specifically, the Tributary Flow Objective requires that a percentage of unimpaired flow between 30% and 50% (calculated on a minimum 7-day running average) be maintained from each of the Stanislaus, Tuolumne and Merced Rivers from February through June. (SED, at Appx. K, p. 18.) The Vernalis Flow Objective requires a minimum base flow between 800 and 1,200 cubic feet per second ("cfs") at Vernalis from February through June, notwithstanding the unimpaired flow requirement. (SED, at Appx. K, p. 18.) The Vernalis Flow Objective requires contributions from the Stanislaus, Tuolumne and Merced Rivers, at 29 percent, 47 percent and 24 percent, respectively. (SED, at Appx. K, p. 29.)</p> <p>The WQCP states that fish and wildlife beneficial uses will be protected by the flows required from these objectives. (SED, at Appx. K, p. 18.) However, the analysis in the SED fails to properly consider whether the protection afforded to fish and wildlife by these objectives is reasonable, considering all the demands placed on the waters involved (Water Code, § 13000), and all the past, present and potential future beneficial uses. (Water Code, § 13241[a].) The absence of a proper analysis will render the administrative record in this matter devoid of the necessary "evidentiary support" for the Board's decision as to whether the required instream flows provide protection that is reasonable. (Racanelli, supra, 182 Cal.App.3d 82, 113.) Courts will refuse to uphold Board decisions that have no evidentiary support, as there is no means of ensuring that "the agency has adequately considered all relevant factors, and has demonstrated a rational connection between those factors, the choice made, and the purposes of the enabling statute." (Ibid.)</p> <p>Simply put, the Board's determination of reasonableness--and the evidence supporting that determination--must be in the document that forms the basis for the Board's decision. As explained below, the SED fails to provide sufficient evidentiary support or analysis for a determination that the proposed objectives are reasonable in light of all demands being made on the waters involved. Accordingly, the Board must decline to adopt the WQCP and the proposed revisions to the objectives therein.</p>	
3239	73	<p>The SED fails to analyze whether the proposed objectives are reasonable considering the demand for municipal supply.</p> <p>The SED properly acknowledges that the SJTA members supply local municipalities with surface water. (SED, at Table 2-3; 22-2.) There are also multiple municipal service providers upstream of the rim dams in the "extended plan area." (SED, at Table 13-6, p. 13-20.) The SED states that the proposed alternatives (namely, Alternative 2 with adaptive implementation, and Alternatives 3 and 4 with or without adaptive implementation) would cause "substantial reductions of surface water" and impact municipal supplies. (SED, at 22-13.) In fact, municipal suppliers on the three tributaries "would likely be greatly affected" by a reduction in surface supply caused by Alternatives 2 and 3. (SED, at 13-61, 13-66.)</p> <p>The SED also states that the water supply reductions caused by the LSJR Alternatives could be "shifted from agricultural uses downstream in the plan area to consumptive domestic and municipal uses upstream in the extended plan area," thereby increasing the impact to municipal service providers in the extended plan area. (SED, at 13-89.)</p> <p>Although the SED recognizes that municipal surface supply will be greatly impacted by the proposed objectives, it dismisses those impacts in two ways. First, the SED states that the impact of reduced surface water supply on municipal suppliers is only "a function of their ability to use existing alternative supplies (e.g. groundwater) or develop alternative water</p>	<p>The SED does not dismiss the potential impacts of the plan amendments on municipal supply. As stated in the California Water Plan, in the San Joaquin Region, agricultural water use is the largest component of the developed water uses, and fluctuates, while urban water use is a very small portion of the total and remains a fairly stable amount (DWR 2009). As stated in Chapter 9, Groundwater Resources, irrigated agriculture accounts for approximately 95 percent of the total water use in the Modesto, Turlock, and Merced Subbasins with municipal water use accounting for approximately the remaining 5 percent (SED at 9-13).</p> <p>Please see Master Response 3.6, Service Providers, regarding the approach used to evaluate potential impacts of the plan amendments on service providers and potential availability of water in the plan area for municipal uses. Chapter 13, Service Providers, recognizes that "the extent to which service providers are affected [by a reduction in surface supply] is a function of their ability to use existing alternative supplies (e.g., groundwater) or develop alternative water supplies." Chapter 13 goes on to explain the SED "qualitatively determine[s] whether service providers may need new and expanded water supply treatment facilities or water supply infrastructure" by comparing surface water diversion reductions to service provider reliance on surface water (See Tables 13-3a and 13-3b). The State Water Board recognizes municipalities have various mechanisms (e.g., contracts, negotiated agreements, water rights) with which to obtain water supply, and crafted the approach to the analysis to acknowledge various relationships between municipalities and different entities, while evaluating potential impacts at a watershed level. Section 13.4.3, Impacts and Mitigation Measures, indicates "[s]ervice providers that rely heavily or primarily on surface water diversions to supply water to their service areas could experience significant reductions in water</p>

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		<p>supplies." (SED, at 13- 49.) In other words, the analysis effectively dismisses the demand for municipal supply by assuming that it will be satisfied from another source, such as groundwater. Second, the WQCP suggests that the Board will protect against any impacts to municipal supply by prioritizing municipal uses over other beneficial uses, without consideration of water right priority. Specifically, the WQCP states that the State Water Board will "take actions as necessary to ensure that implementation of the [LSJR] flow objectives does not impact supplies of water for minimum health and safety needs, particularly during drought periods." (SED, at Appx. K, p. 28; 13-61, 13- 66.)</p> <p>The WSE Model implements this proposed protection of municipal uses as follows: "Volumes of water assumed not to be subject to a water shortage (e.g., municipal and industrial water supply, riparian rights) are subtracted from the total diversions for each river to calculate the remaining water. Any water left over is then delivered to the irrigation districts to be used for applied water demands . . ." (SED, at 11-36.) As explained below, providing this assurance of protection to municipal supplies, regardless of the priority of the water rights that currently serve those supplies, constitutes an unlawful prioritization of a municipal beneficial use over other beneficial uses, such as agricultural uses, without due consideration of the priority of the water rights that serve those beneficial uses, and without consideration of any contracts which control distribution to municipal suppliers.</p> <p>As stated in the SED, California recognizes domestic water use as the most important use, with irrigation as the second most important. (SED, at 13-61; Water Code, § 106.) However, this hierarchy cannot be used as a basis for altering water right priority, nor for diverging from the rule of first in time, first in right. As stated by one commentator, "there is no legislative or judicial authority in California for the enforced advancing of the priority of an appropriation for one beneficial purpose over that of a prior appropriation for another beneficial purpose, either in time of water shortage or otherwise, without making due compensation." (Hutchins, California Law of Water Rights, p. 174.)</p> <p>The only mechanism by which the State Water Board can assign a higher priority to a later appropriation serving a more preferred beneficial use is through the imposition of permit terms and conditions on the earlier appropriation. (see Racanelli, supra, 182 Cal.App.3d at 132 [recognizing the very limited authority of the Board to impose permit conditions that give a higher priority to a more preferred beneficial use even though later in time].) Thus, where a water right is not based on a permit issued by the State Water Board or its predecessor agency, the Board has no authority to prioritize one beneficial use over another where doing so would contravene water right priority. (Young v. State Water Resources Control Bd. (2013) 219 Cal.App.4th 397, 404 ["the Water Board does not have jurisdiction to regulate riparian and pre-1914 appropriative rights"].)</p> <p>By establishing a set of objectives for the benefit of fish and wildlife that will have an impact on municipal uses, and then dismissing that impact by proposing a method of protection that the Board has no authority to implement, the Board has circumvented its statutory obligation to set water quality objectives that provide "reasonable" protection to fish and wildlife, considering all demands and other beneficial uses. (Water Code, § 13000, 13241.) The assessment of whether the proposed objectives for fish and wildlife are reasonable considering all demands will depend upon, among other things, the extent of the impact on municipal supply.</p> <p>The Board has ignored the impact on municipal supply by (1) assuming the demand will be satisfied from another source of water, and (2) improperly assuming that municipal uses can</p>	<p>supply" as a result of the plan amendments.</p> <p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding authorities related to the water quality control planning process, implementation of the plan amendments through water rights proceedings, and consideration of beneficial uses within the context of the water quality control planning process. The minimum health and safety provision in the plan amendments does not suggest that the State Water Board will implement the Bay-Delta plan without consideration of water rights priorities. The proposed changes to the program of implementation identify future State Water Board processes, potentially both quasi-adjudicative and quasi-legislative, for implementing the water quality objectives in the Bay-Delta Plan depending on the individual circumstances found in various stream systems covered by the Bay-Delta Plan. A water right proceeding to implement the plan amendments would generally follow the water right priority system and in accordance with applicable law. However, the rules of priority are not absolute. Certain overarching legal principles can override strict adherence to the water right priority system (El Dorado Irrigation District v. State Water Resources Control Board (2006) 142 Cal.App.4th 937, 965-66 [citing reasonable use, public trust, and legislative declarations of priority as examples]).</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the modeling approach and use of the WSE model to programmatically analyze effects. As discussed in Appendix F, Hydrologic and Water Quality Modeling, the WSE model includes assumptions for processes and variables (e.g., diversions for municipal uses) that are reasonable and necessary for a program-level analysis of water supply storage and delivery. The WSE assumptions represent examples of system operations to determine the significance of impacts pursuant to CEQA. The 2006 Bay-Delta Plan expressly states that the plan should not be "be construed as establishing the responsibilities of water right holders. Nor is this plan to be construed as establishing the quantities of water that any particular water right holder or group of water right holders may be required to release or forego to meet the objectives in this plan. The State Water Board will consider, in a future water rights proceeding or proceedings, the nature and extent of water right holders' responsibilities to meet these objectives." (Appendix K, Chapter I., Introduction, Section B., Purpose and Applicability.) This language is unchanged by the plan amendments. In future proceedings, the State Water Board will carefully examine and consider the competing uses of water in reaching decisions about how to implement the water quality objectives. For further information on the program-level approach to the SED, please see Master Response 1.1, General Comments.</p> <p>Please see Master Response 2.7, Disadvantaged Communities, for information regarding SED consideration of the Human Right to Water. Section 13.4.3, Impacts and Mitigation Measures, recognizes water for domestic purposes as the highest use of water pursuant to Water Code section 106 (Human Right to Water). Section 13.4.3 goes on to explain "this [recognition of domestic purposes as the most important use] does not necessarily mean that the water supply for domestic uses cannot be modified. Furthermore, if other water districts that supply domestic uses are receiving water through contracts with irrigation districts, then these uses would not necessarily be protected. For example, if Modesto Irrigation District (MoID) experiences water shortages, its deliveries to service providers serving urban uses (e.g., City of Modesto) could be cut back proportionally, as described in [MoID's] various plans and policy documents."</p>

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		<p>be systematically protected at the expense of other beneficial uses, such as agriculture. However, the Board has no authority to prioritize municipal uses over other beneficial uses based on the preference for municipal supply, as such an act would violate the rules of water right priority. Because the Board lacks this authority, the Board must reexamine the municipal demand for the waters of the Stanislaus, Tuolumne and Merced Rivers without the assumed systematic protection of municipal uses.</p> <p>As the SED improperly assumes the impact on municipal supply can be effectively eliminated, further consideration by the Board is necessary to determine whether the proposed objectives offer a reasonable level of protection for fish and wildlife considering the impact on municipal demand.</p>	
3239	74	<p>The SED fails to analyze whether the proposed objectives are reasonable considering the demand for agricultural supply.</p> <p>According to the information provided in the SED, there are approximately 516,722 acres of farmland in the area that will be impacted by the Tributary Flow Objective and the Vernalis Flow Objective. (SED, at Table 11-15, p. 11-48.) These areas include the lands serviced by OID, SSJID, TID and MID. The SED recognizes that the proposed objectives will have significant and unavoidable impacts on agricultural resources across these areas. (SED, at Table ES-20, p. ES-52.) Succinctly stated, "any increases in unimpaired flows would reduce surface water supplies that are available for irrigation purposes." (SED, at 11-1.)</p> <p>The SED estimates that "approximately 22,879 acres, on average, of Prime or Unique Farmland of Statewide importance requiring irrigation could have reduced surface water diversions" under LSJR Alternative 3 (40% UIF), and that this impact would be significant and unavoidable irrespective of whether the alternative is adaptively implemented. (SED, at 11-5.) These estimated impacts to agriculture are significantly understated in the SED, and as a result the document fails to provide the Board with sufficiently accurate information to determine whether the objectives are reasonable in light of the agricultural demand being made on the waters involved.</p> <p>The Board is tasked with setting water quality objectives that ensure the reasonable protection of beneficial uses, such as fish and wildlife, "considering all demands being made and to be made on those waters." (Water Code, § 13000, 13241.) The Stanislaus, Tuolumne and Merced Rivers provide surface water that supports a vast and diverse agricultural industry in the affected area, as evidenced by Table 11-5 of the SED which shows that there are more than 500,000 acres of farmland that will be impacted by the proposed LSJR objectives. These figures demonstrate that the agricultural demand on the waters of the Stanislaus, Tuolumne and Merced Rivers is significant.</p> <p>Instead of giving consideration to this demand for surface water, as is required by Water Code section 13000, the SED preemptively diminishes the agricultural demand for surface water in the affected area by assuming that groundwater will serve as a substitute for the lost surface water. (SED, at 11-36.) By doing so, the SED fails to assess the actual agricultural demand for the waters affected by the objectives. Specifically, the WSE Model assumes that agricultural demands could be "satisfied by surface water and groundwater, or a combination of the two." (SED, at 11-36.)</p> <p>The SED states that, within the irrigation districts in the affected area, including OID, SSJID, TID and MID, "there is a minimum amount of groundwater pumping that occurs every year."</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding the State Water Board's compliance with authorities related to the water quality control planning process, including the Porter-Cologne Water Quality Control Act and the Clean Water Act, which includes the State Water Board's consideration of the factors set forth in Water Code Section 13241. See also the discussion in Master Response 1.2 regarding the State Water Board's consideration of beneficial uses.</p> <p>Please see Appendix B, State Water Board's Environmental Checklist, Agriculture and Forest Resources. The threshold question for the environmental analysis that commenter is referencing is, "Would the project [c]onvert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance [Important Farmland], as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?" This question refers to permanent conversion of Important Farmland as temporary fallowing is still an agricultural use. Among other attributes, farmland must have been irrigated for a certain number of years to be classified as Prime Farmland or Farmland of Statewide Importance by the Farmland Mapping and Monitoring Program. Please see Chapter 11, Farmland Mapping and Monitoring Program for additional description of Important Farmland.</p> <p>The cause of potential farmland conversions from implementation of the plan amendments would be reduced availability of surface water irrigation supplies; therefore, it is irrigated farmland that is potentially impacted. By definition irrigated farmland that is producing commercial crops qualifies as Important Farmland. Therefore, lands that might be subject to reduced irrigation because of the plan amendments are Important Farmland. Please see Master Response 3.5, Agricultural Resources, for an explanation as to why the numbers in the Chapter 11, Agricultural Resources, are conservative (i.e. more worst-case) than what is likely to be converted as the SED equated specified reductions in acres supplied with surface water irrigation to "conversions," even though permanent conversions depend on many factors.</p> <p>Please see Appendix F.1, Hydrologic and Water Quality Modeling, and Master Response 3.2, Surface Water Analyses and Modeling for a description of the Water Supply Effects model and the methods used to calculate surface water demand and potential surface water reductions. The Water Supply Effects (WSE) model first calculates the total surface water demands in each watershed; it then determines if the water is available for diversion under baseline or an LSJR alternative. If it is not available, the WSE model calculates the reduced surface water supply. The reduced surface water supply is then postprocessed to determine the applied water available for irrigation, which is becomes an input to the Statewide Agricultural Production Model (SWAP). Please see Chapter 11, Appendix G, Agricultural Economic Effects of the Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results, Master Response 3.5, and Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model, regarding the use and calibration of SWAP. The SWAP Model reflects historical grower behavior during reductions in surface water supply by, for example, shifting some irrigation water supplies from lower net-revenue uses (such as irrigated pasture) to higher net-revenue uses (such as orchards).</p>

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		<p>(SED, at 11- 37.) Under the WSE Model, when the amount of available surface water, combined with the minimum amount of groundwater pumping, is insufficient to meet the irrigation demands in a particular district, "then additional groundwater pumping" is assumed to occur up until the point that the irrigation demands are satisfied or the maximum capacity of groundwater pumping is reached. (SED, at 11-37.)</p> <p>Under the SED, agricultural demands are only deemed to be impacted when the additional groundwater pumping is maximized, and when there is still insufficient water to satisfy all irrigation demands. (SED, at 11-37.) The flaw in this assumption is twofold. First, irrespective of whether the assumed maximum capacity for groundwater pumping is accurate or legally permissible under SGMA, proper consideration of the agricultural demands under Water Code section 13000 requires an assessment of those demands in their undiminished capacity and without an assumption that supply can be subsidized by groundwater. While the Board is afforded some deference in determining what constitutes a reasonable measure of protection for fish and wildlife considering all the demands being made on the waters involved, its determination cannot be "arbitrary, capricious, or lacking in evidentiary support." (Racanelli, 182 Cal.App.3d at 113, citing California Hotel & Motel Assn. v. Industrial Welfare Com. (1979) 25 Cal.3d 200, 212.)</p> <p>This deference is premised upon "the separation of powers between the Legislature and the judiciary, [and] the legislative delegation of administrative authority to the agency . . ." (California Hotel, supra, 25 Cal.3d at 212.) The mandate from the legislature to the State Water Board in this instance is to set reasonable objectives "considering all demands being made and to be made on those waters." (Water Code, § 13000.) The directive to consider "all demands" compels an objective assessment of all the agricultural demands being made on the surface waters involved, and precludes the State Water Board from tinkering with the demand figures in such a way as to diminish the total demand when deciding what objectives are reasonable.</p> <p>This issue of downwardly adjusting values where an agency has been directed consider all values in determining what is reasonable has been addressed in other legal contexts. For instance, in a case involving Proposition 39's requirement that school districts provide charter schools with "reasonably equivalent" facilities, the Sixth District Court of Appeal held that a school district improperly understated the amount of "non-teaching" space at "comparison" schools when determining the amount of "non-teaching" space that should be made available to the charter school. (Bullis Charter School v. Los Altos School Dist. (2011) 200 Cal.App.4th 1022, 1046-1047.) Pursuant to the implementing regulations for Proposition 39, the school district was required to consider "all of the space that is not identified as teaching station space . . . [including, but not limited to] administrative space, kitchen, multi-purpose room, and play area space" when calculating "non-teaching station space." (Bullis Charter School, supra, 200 Cal.App.4th at 1046-1047; Cal. Code Regs., tit. 5, § 11969.3[b][3].)</p> <p>Instead of taking "an objective look at all of such space available" at the comparison schools, the district employed a "common usage approach" where it only considered the "non-teaching" spaces that were common to all of the schools in the comparison group. (Bullis Charter School, supra, 200 Cal.App.4th at 1047.) Under this approach, the comparison group schools could control the "reasonably equivalent" analysis by changing their use of non-teaching space. (Ibid.) The example provided by the court was as follows: if all schools in the comparison group had tennis courts, but one school chose to use the court only for</p>	<p>The comment mischaracterizes the use of groundwater pumping in the analysis. The total applied water demand for the watersheds, that is used for the purposes of the SWAP model and the agricultural resource impact analysis, is calculated as described in Appendix G. As Section G.2.1.3, Parameter Estimates, Minimum Groundwater Pumping, states: "...some of the total irrigation district demand for applied water would be met by minimum groundwater pumping. A minimum groundwater pumping amount was applied to account for irrigated areas that are not supplied by surface water. These minimum amounts are likely to occur each year regardless of water year type. However, in the WSE model there are a few months in certain years when the estimated applied water demand is less than the minimum groundwater pumping for that month, so the minimum groundwater pumping is reduced to prevent demands from being oversatisfied. Minimum groundwater pumping estimates are based on evaluation of irrigation district pumping estimates in CALSIM, AWMs, groundwater management plans (GWMPs), and information provided by the irrigation districts." Furthermore, please see Subsection G.2.2, Methodology for Calculating Applied Water, for discussion of how additional groundwater pumping is calculated.</p> <p>The incorporation of a minimum groundwater pumping and a maximum groundwater pumping allowable by infrastructure capacity into the calculation of the applied water demand is reasonable and appropriate given the following: (1) the reliance on groundwater infrastructure in the past and in place at the time; (2) the reported pumping in the past and at the time associated with different water year types; and (3) the variability in hydrology (e.g., precipitation event) found within the baseline. Furthermore, this incorporation occurs after the total demand for surface water is calculated by the WSE model, which means the State Water Board is evaluating the total demand and total surface water supply reduction that could occur under baseline or the LSJR alternatives. As such, the total demands are considered by the State Water Board throughout the SED and in this water quality control planning process.</p> <p>As stated above, Chapter 11, Agricultural Resources, analyzes potential conversions of agricultural land to non-agricultural use. Please see Master Response 8.1 for discussion of how groundwater use was applied for the agricultural impact analysis. Please also see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, regarding baseline groundwater pumping and consideration of SGMA for additional discussion on the use of groundwater pumping.</p> <p>The comment states that the SED groundwater assumptions diminish the total demand, yet those assumptions do the opposite: by conservatively estimating groundwater pumping based on 2009 capacities with only strategic use of the 2014 pumping levels, instead of constant use of the 2014 capacities, the Chapter 11 agricultural resources analyses reduce available water in the baseline and thus attribute more of the potential water shortage to implementation of the plan amendments than may occur given the groundwater pumping capacity that is available. On the other hand, if the groundwater analyses in Chapter 9, Groundwater Resources, was limited to lower levels of pumping, it could underestimate potential impacts to the groundwater basin from withdrawals given the local expansion of groundwater pumping infrastructure after 2009. Therefore, to fully inform decisionmakers about the potential impacts of the plan amendments, the SED does both, analyzing the potential effects of groundwater use at both the 2009 and 2014 capacities separately. It assumes a more worst-case baseline for the Chapter 9 groundwater analyses while also assuming a more worst-case baseline for the Chapter 11 agricultural resources analyses. There would be either one outcome (less groundwater pumping, more agricultural impacts, but less groundwater resources impacts) or the other (more groundwater pumping, less agricultural impacts, but more groundwater resources impacts) but not both. For more discussion of the tension between the agricultural resources impact analyses and the groundwater resources impact analyses, please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act (SGMA).</p> <p>The SED could not incorporate the potential regulations and restrictions on groundwater pumping that will result from the implementation of SGMA because SGMA has not been implemented yet and any</p>

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		<p>badminton, then the school district would not consider that space to be "non-teaching" space for Proposition 39 analysis. (Id.)</p> <p>The effect of this methodology was that the school district excluded a substantial amount of "non-teaching" space from its analysis, thereby reducing the resources that it needed to provide to the charter school in order to attain the reasonably equivalent requirement. (Id.) The court concluded that this was error and that the school district acted arbitrarily. (Id.) The Court also determined that the school district erred by failing to consider the overall site size for the charter school in relation to the comparison schools because the regulations for Proposition 39 state that the school district "shall" use as a factor "school site size." (Id. at 1051-1052.)</p> <p>Like the regulations for Proposition 39, which require school districts to consider "all" non-teaching space, as well as site size, when determining "reasonably equivalent" school facilities for charter schools, Water Code, § 13000 requires the State Water Board to consider "all demands" being made on the waters involved when determining what constitutes a "reasonable" water quality objective. (Water Code, § 13000, 13241.) In Bullis, the court determined that the school district acted arbitrarily by failing to consider "all" of the non-teaching space held by the comparison schools, instead relying on a reduced number that was subject to alteration. The SED makes a similar error. Rather than using the actual agricultural demands being made of the surface waters of the Stanislaus, Tuolumne and Merced Rivers, the SED uses a reduced demand number that is effectively subsidized by an estimated "maximum" groundwater pumping capacity. (SED, at 11- 37.)</p> <p>As in Bullis, any determination that the proposed LSJR objectives are "reasonable, considering all demands" being made on the waters involved would be arbitrary in the absence of any consideration of the actual agricultural demand, i.e., the agricultural demand without the assumption that a portion of that demand will be satisfied by maximum groundwater pumping. In addition, any such determination would be beyond the scope of the authority granted to the State Water Board to set water quality objectives insofar as that authority is constrained by the requirement that the Board consider all demands being made on the waters involved. (California Hotel, supra, 25 Cal.3d at 212 [an agency must act "within the scope of its delegated authority"].) The Board's decision to only examine impacts to Prime or Unique Farmland of Statewide importance also improperly diminishes the agricultural demand for the same reasons.</p> <p>Second, the assumption that the agricultural demands from the surface waters of the Stanislaus, Tuolumne and Merced Rivers can be satisfied, at least in part, from the pumping of groundwater is inaccurate and legally unsupportable. The issue of whether agricultural demands can be satisfied by available groundwater in the affected area is a technical matter which requires expert analysis. "[A]bsent any indication of arbitrariness or evidentiary or procedural defect, in these technical matters requiring the assistance of experts and the collection and study of statistical data, courts let administrative boards and officers work out their problems with as little judicial interference as possible." (Racanelli, supra, 182 Cal.App.3d at 113 [internal quotations omitted], citing Industrial Welfare Com. v. Superior Court (1980) 27 Cal.3d 690, 702.)</p> <p>However, a determination will be deemed arbitrary if the evidentiary support upon which it is based "is physically impossible or inherently improbable and such inherent improbability plainly appears." (California Sportfishing Protection Alliance v. State Water Resources Control Bd. (2008) 160 Cal.App.4th 1625, 1640, quoting Kunec v. Brea Redevelopment</p>	<p>assumptions about how it will be implemented are speculative. SGMA requires local public agencies to manage their groundwater resources sustainably, as defined in the Act. However, SGMA is not a moratorium on groundwater pumping and could be implemented in multiple ways. Please see Master Response 3.4, regarding baseline groundwater pumping and consideration of SGMA. However, while SGMA is not included in the baseline, it is included as a local regulatory action that could both mitigate potential impacts to groundwater resources and further reduce the amount of groundwater available for irrigation and thus cumulatively impact conversions of Important Farmland to nonagricultural use. Please also see Master Response 3.4 regarding SGMA as a mitigation measure, Chapter 9, Groundwater Resources, and Chapter 17, Cumulative Impacts, Growth-Inducing Effects, and Irreversible Commitment of Resources for additional explanation.</p>

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		<p>Agency (1997) 55 Cal.App.4th 511, 518.) The SED acknowledges that the estimated groundwater needed to supplement the lost surface water supply is not physically attainable. Specifically, in assessing maximum groundwater pumping capacity, the SED uses two different approaches, one of which is based upon groundwater pumping infrastructure and estimated capacity under 2009 conditions, and another which is based upon groundwater pumping infrastructure and estimated capacity under 2014 conditions. (SED, at 11-37.) The groundwater pumping capacity estimates are higher under 2014 conditions than under 2009 conditions due to the drilling of additional wells over the course of those years in response to drought conditions. (SED, at 11-37.)</p> <p>The SED openly acknowledges that exercising groundwater pumping capabilities under 2014 conditions is not "a sustainable practice given groundwater conditions." (SED, at 11-52.) Given the acknowledgement of this physical impossibility, or at least the inherent improbability of it, the Board currently lacks the necessary information and analysis needed to make a decision that is not arbitrary or capricious on the issue of whether the proposed objectives are reasonable considering demands being made on the surface waters involved. (California Sportfishing, supra, 160 Cal.App.4th at 1640.)</p> <p>Furthermore, the Sustainable Groundwater Management Act ("SGMA") (Water Code, § 10720 et seq.) "will impact groundwater management as it places a mandatory duty upon local agencies in high- and medium- priority groundwater basins to form groundwater sustainability agencies (GSAs) by June 30, 2017, in order to adopt and implement groundwater sustainability plans (GSPs) to sustainably manage groundwater resources." (SED, at 9-2.) GSAs will have the ability to "control groundwater extractions by regulating, limiting, or suspending extractions from wells." (SED, at 9-2, citing Water Code, § 10726.4.)</p> <p>The agricultural analysis performed in the SED does not account for the potential regulations and restrictions on groundwater pumping that will inevitably result from the implementation of SGMA. Accordingly, the assumption that the proposed objectives for unimpaired flow can be built on the back of the dwindling groundwater supply is legally untenable. The State Water Board should decline to adopt water quality objectives that would directly contradict the goals of SGMA, including (1) "[t]o provide for the sustainable management of groundwater basins," (2) "[t]o avoid or minimize subsidence," and (3) "[t]o increase groundwater storage and remove impediments to recharge." (Water Code, § 10720.1.)</p> <p>In sum, the SED fails to account for the true agricultural demand being made on the surface waters of the Stanislaus, Tuolumne and Merced Rivers, and overestimates the extent to which the demand can be satisfied by groundwater. As a result, the SED does not include a proper assessment of the agricultural demands being made of the waters impacted by the water quality control plan, and thus cannot support a decision by the State Water Board that the protections afforded to fish and wildlife beneficial uses are reasonable in the face of all demands as required by the Water Code.</p>	
3239	75	<p>The SED fails to analyze whether the proposed objectives are reasonable considering the impact to groundwater recharge.</p> <p>The Water Code requires that the State Water Board consider "all demands" being made on the waters subject to a water quality control plan when determining what constitutes a reasonable protection of a beneficial use such as fish and wildlife. (Water Code, § 13241.) While passive groundwater recharge, in itself, is not a beneficial use, it is incidental to</p>	<p>The commenter highlights that current methods of agricultural irrigation result in substantially more water diverted from the eastside tributaries than is consumptively used by crops and the excess is incidentally recharging the groundwater. The State Water Board considers potential impacts to groundwater resources from reduced recharge in Chapter 9, Groundwater Resources. Section 9.4.3, Impacts and Mitigation Measures, describes potential impacts of the plan amendments on groundwater recharge at the subbasin scale. The analysis described in Section 9.4.3 is appropriate for a programmatic evaluation, in accordance with State CEQA Guidelines. Please see Master Response 1.1, General Comments, for information on CEQA</p>

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		<p>irrigation, the second-most preferred beneficial use. (Water Code, § 106.) As such, it is part of the demands being made on the waters subject to the objectives and must be considered in determining what constitutes a reasonable protection for fish and wildlife.</p> <p>The SED states that "sustainable yield estimates [for groundwater] are highly dependent on recharge from surface water applications for irrigation and seepage from distribution systems [and] if surface water applications are modified, then the subbasin's sustainable yield changes." (SED, at 9-15.) According to the information in the SED, total average recharge in SSJID from applied irrigation water and seepage from canals and reservoirs is approximately 97 TAF annually. (SED, at 9-25.) Groundwater recharge within OID, on average, is estimated to be 87 TAF annually. (SED, at 9-27.) Because of OID's contributions, "groundwater levels in portions of the Eastern San Joaquin Subbasin underlying the OID service area have decreased much less than groundwater levels in the rest of the subbasin." (SED, at 9-27.) In MID, groundwater recharge has increased significantly in recent years, from approximately 81 TAF in 2012, to 152 TAF in 2015, the majority of which comes from MID irrigation water. (SED, at 9-28.) Total recharge in TID is estimated to be 238 TAF annually, most of which comes from applied surface water. (SED, at 9-29.)</p> <p>Across these four irrigation districts, total recharge is approximately 574 TAF annually. Except in dry years, the irrigation districts are net rechargers, adding more water to the groundwater basin than they extract from it. (SED, at Figure 9-9, p. 9-53.) This net recharge helps "compensate for groundwater pumping outside of the irrigation district lands." (SED, at 9-54.) However, the proposed objectives will drastically reduce the amount of recharge to groundwater due to the reduction in applied surface water. (SED, at Figure 9-10 - 9-12, p. 9-55 - 9-56; and Table 9-12, p. 9-58.) Specifically, under a 40% unimpaired flow requirement, the districts would still be net positive rechargers in most years, but the positive balance would decrease and "be detrimental because it could reduce the amount of compensation for groundwater pumping that happens outside of the irrigation district lands." (SED at 9-62.)</p> <p>Moreover, the irrigation district groundwater balance would be negative in the Eastern San Joaquin and Extended Merced Subbasins in approximately the driest 40 percent of years. (SED, at 9-62.) A reduction in groundwater levels can cause a "degradation of groundwater quality." (SED, at 9-63.) The SED notes that a 40% unimpaired flow requirement could "substantially deplete groundwater supplies and interfere with groundwater recharge and affect groundwater quality" in the affected subbasins. (SED, at 9-63.)</p> <p>This impact to groundwater recharge must be considered by the Board in determining whether a 40% unimpaired flow requirement for the protection of fish and wildlife is reasonable. Apart from noting that the impact is significant and unavoidable for purposes of CEQA, the SED contains no analysis of whether a different objective, such as a functional flow approach, would provide the same protection for fish and wildlife with less impact on groundwater recharge. This analysis needs to be performed before the Board can find that the objectives are reasonable considering all demands being made upon the waters affected by the WQCP.</p>	<p>requirements for program-level analysis. Please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, regarding the approach to the groundwater impact analysis and groundwater recharge.</p> <p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 3.1, Fish Protection, for discussions on a functional flow approach and how unimpaired flow with adaptive implementation is effectively a functional flow. Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board authorities under the Porter-Cologne Water Quality Control Act and consideration of beneficial uses in the context of the water quality control planning process.</p>
3239	76	<p>The SED fails to analyze whether the proposed objectives are reasonable considering the impact to water storage.</p> <p>On the Stanislaus and Tuolumne Rivers there are at least eight major reservoirs with a total storage capacity of more than 5 million acre feet. (SED, at 2-3.) This storage is critical to</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding the State Water Board's compliance with legal requirements governing the water quality control planning process.</p> <p>Please see response to comment 3239-19 and Appendix K, Revised Water Quality Control Plan regarding the program of implementation requirement for carryover storage targets or other requirements sufficient to</p>

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		<p>maintaining a robust agricultural industry and ensuring a reliable municipal supply, especially in dry years and sequential dry years. The ability of water users to store water in these reservoirs for later use is one of the many demands being made on the waters of the Stanislaus and Tuolumne Rivers. However, the SED provides no analysis of whether the 40% unimpaired flow requirement for the benefit of fish and wildlife is reasonable considering the impact that it will have on storage. In fact, the modeling in the SED assumes that reservoir operators will adhere to certain minimum carryover storage targets in New Melones Reservoir and New Don Pedro Reservoir, even though those storage targets are not required by the objectives. (SED, at Appx. F1, p. F.1-36, F.1-37.)</p> <p>By modeling a minimum storage target that is not required by the objectives, the analysis fails to demonstrate the real impact of the objectives on storage. Without any modeling or analysis to show how the 40% unimpaired flow requirement will impact storage, the Board cannot determine whether the objectives are reasonable in light of their impact to storage. For this reason, the Board cannot fulfill its obligation under Water Code section 13000 of setting an objective that is reasonable considering all demands being made on the waters, and must therefore decline to adopt the WQCP.</p>	<p>help ensure that providing flows to meet the flow objectives will not have significant adverse temperature or other impacts on fish and wildlife.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding carryover storage in the rim reservoirs and modeling of reservoir operations. In addition, please see the Chapter 5, Surface Hydrology and Water Quality, Methods and Approach section for a discussion of potential reservoir storage effects in the extended plan area.</p>
3239	77	<p>The SED fails to analyze whether the proposed objectives are reasonable considering the impact they will have on water transfers.</p> <p>The SED fails to consider the impact that the objectives will have on the ability of water right holders to effectuate water transfers. The Water Code allows for water transfers where the water will be put to beneficial use. (Water Code, § 1725.) These water transfers can have significant economic benefits to the transferor, as well as the transferee. Additionally, some water transfers can be used to benefit fish and wildlife. As indicated in the comments submitted by OID and SSJID, water transfers can help fund water delivery system projects and water conservation projects. (OID/SSJID Joint Comments, District Revenue Impacts Section.) The SED does not consider the impact that the 40% unimpaired flow requirement will have on the ability of water right holders to effectuate water transfers. The failure to consider the impact of the objectives on this demand is a violation of Water Code section 13000.</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding the scope of the Bay-Delta plan proceedings and implementation of the plan amendments through water rights proceedings.</p> <p>The comment does not explain what potential impacts are being referenced. For example, Chapter 11, Agricultural Resources, describes potential levels of fallowing that could occur as water move from one agricultural use to another. With respect to economic benefits, the comment makes reference to comments submitted by other entities. To review responses to comments submitted by other entities within the comment period on the 2016 Recirculated Draft SED, please refer to the index of commenters in Volume 3 to locate the letter number(s) of interest.</p>
3239	78	<p>The SED fails to properly consider whether the proposed objectives are reasonable considering the impact they will have on hydropower.</p> <p>There are numerous hydropower plants on the Stanislaus and Tuolumne Rivers, including one at each of the rim dams (New Melones and New Don Pedro) and one below each of the rim dams (Tulloch and La Grange). (SED, at 14-6.) The SED fails to properly analyze the impact of the objectives on hydropower. The modeling presented in the SED assumes that reservoir operators will adhere to certain end-of-September carryover storage requirements on the rim dams. (SED, at 14- 30; Appx. F1, p. F.1-36, F.1-37.) These carryover storage requirements will have a direct effect on hydropower generation because they create constraints on the release of water.</p> <p>However, the carryover storage targets are not required by the objectives, and thus the modeling presents an unrealistic scenario of how hydropower generation will be impacted, both in timing and quantity. Moreover, the carryover targets ensure that the reservoirs are not drawn down to dead-pool levels during dry and sequential dry years, which is an unrealistic occurrence if the 40% flow requirement is implemented, as shown in the SJTA’s analysis. Thus, the SED analysis improperly assumes the availability of water for hydropower</p>	<p>Please see response to comment 3239-19 and Appendix K, Revised Water Quality Control Plan regarding the program of implementation requirement for carryover storage targets or other requirements sufficient to help ensure that providing flows to meet the flow objectives will not have significant adverse temperature or other impacts on fish and wildlife.</p> <p>Please also see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding a description of the plan amendments and carryover storage as it relates to the description of the plan amendments. Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding carryover storage as it relates to, and is represented by, the Water Supply Effects model, as well as a discussion of the purpose of modeling for the impact analysis, and a discussion of hydropower.</p> <p>Please see Chapter 14, Energy and Greenhouse Gases, Section 14.4.2, Methods and Approach, LSJR Alternatives, Power Flow Assessment, for a description of the “steady-state power flow assessment of the California grid” used to determine “if reduction in hydropower capacities at New Melones, New Don Pedro, and New Exchequer power plants would adversely impact the grid reliability as defined by NERC.” The results of the power flow assessment are used to analyze potential impacts under Impact EG-1: Adversely Affect the Reliability of California’s Electric Grid, in Chapter 14. The impact analysis concludes that LSJR Alternatives 2 and 3, with or without adaptive implementation “would not result in any violations of</p>

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		<p>generation in years where such water would likely not be available if the objectives were implemented.</p> <p>Furthermore, the SED states that the timing of hydropower generation will shift from baseline conditions if the proposed objectives are implemented, with a general increase in production during the February through June period, and a decrease in production during the July to September period. (SED, at 14-32.) The SED notes that this shift has the "potential of stressing the grid" because peak demand for energy occurs during the summer months of June to August. (SED, at 14-32.) There is no discussion in the SED of the reasonableness of increasing the risk of stress to the grid during summer months in exchange for ostensibly providing protection to fish and wildlife earlier in the year. This is type of assessment is necessary if the Board is to demonstrate a "rational connection" between the chosen objective and the cost of attaining the benefits achieved by that objective. (Racanelli, 182 Cal.App.3d at 113.)</p>	<p>line/transformer limits and substation voltage limits under normal and contingency conditions. Therefore, this alternative is not expected to affect the reliability of California’s electric grid.” The discussion under Impact EG-1 also concludes for LSJR Alternative 4, with or without adaptive implementation: “...the results indicate that a simple re-dispatch of generator facilities would correct the minor violation. This violation of transmission line limit under the contingency outage condition can be easily eliminated through a re-dispatch of the three Helms generator units (Helms Units 1, 2, and 3). The new loading of the analysis element after this re-dispatch was 99.81 percent of the LTE rating. Therefore, there would be no violation after the re-dispatch. Re dispatches are regular occurrences in the California energy grid and they provide a solution to re distribute power based on the re-dispatch. Under the various adaptive implementation methods, it is anticipated the re-dispatch would not be needed or would be less given the unimpaired flow requirement is less (i.e., 50 percent unimpaired flow). Therefore, impacts would be less than significant.”</p> <p>Please see Chapter 20, Economic Analyses, and Master Response 8.4, Non-Agricultural Economic Considerations regarding the consideration of costs related to hydropower. In addition, Chapter 20 and Master Response 8.4 provide information regarding ecosystem services or potential economic benefits associated with the plan amendments.</p> <p>The above cited information contained in the SED and this response, as well as the entire SED, provides decision makers with the appropriate information to reasonably consider approval of the plan amendments.</p>
3239	79	<p>The SED fails to consider whether the objectives are reasonable considering the environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.</p> <p>The SED is devoid of any data or analysis of this component of the WQCP. The closest the State Water Board comes is in Chapter 5. Chapter 5 describes the Water Quality issues: salinity, pesticides/herbicides and water temperature.</p> <p>Salinity is not a component of the flow objective. Salinity is dealt with as a constituent and is the sole responsibility of Reclamation. (Water Rights Decision 1641, p. 87-88.) Pesticides/herbicides as described on page 5-10 of the SED are not addressed. Storage and or releases of water instream do not cause these pollutants to be in the river.</p> <p>Water temperature is addressed in the SED as a water quality characteristic that may be improved by the proposed flow objectives. Water Temperature on the tributaries and San Joaquin River have been a source of longstanding controversy. In 2010, the State Water Board declined to list the San Joaquin River or its tributaries (the Merced, Tuolumne and Stanislaus) as impaired water bodies for temperature for which total maximum daily loads (“TMDLs”) must be set under Clean Water Act section 303[d]. (SWRCB Resolution 2010-0040.) EPA disapproved the Board’s decision and listed the Lower San Joaquin River and tributaries as impaired for water temperature using the Pacific Northwest objectives. (SJTA Attachment 10 [USEPA Letter to SWRCB, October 11, 2011, Encl., p. 1.])</p> <p>The San Joaquin River Group Authority ("SJRG") challenged the EPA’s listing of the San Joaquin River and its tributaries as temperature impaired water bodies under CWA Section 303(d). (SJTA Attachment 11 [ATT10].) The United States District Court for the Eastern District of California dismissed the suit, finding that the issue was not ripe for review because the SWRCB had not yet developed TMDLs for the newly listed water bodies. (SJTA Attachment 11 [ATT10], p. 2.) The Eastern District explained that California must develop TMDLs in response to the EPA’s listing decision, after which the State will submit those TMDLs to the EPA for approval or disapproval. (SJTA Attachment 11 [ATT10], p. 2.) Because</p>	<p>The plan amendments are reasonable and take into account the existing water quality of the plan area. Appendix C, the peer-reviewed Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, discusses the existing condition of the LSJR, including water quality constituents that can negatively impact fish and wildlife beneficial uses and relies upon information from the Central Valley Regional Water Quality Control Board, among other sources (Appendix C, Section 3.7, Importance of the Flow Regime). In addition, Chapter 5, Surface Hydrology and Water Quality, addresses pesticides and herbicides under impact WQ-3, which analyzes whether the plan amendments could substantially degrade water quality by increasing pollutant concentrations caused by reduced river flows. The impact is less than significant because increases in flow from the eastside tributaries would dilute the concentration of many contaminants including pesticides and herbicides.</p> <p>Salinity is not a component of the LSJR flow objective because inflows from the LSJR from the Stanislaus, Tuolumne, and Merced Rivers are characterized by low salinity values (measured in electrical conductivity) and therefore increased instream flow would help dilute constituents that impair water quality and overall salinity conditions would improve (Chapter 23, Antidegradation Analysis).</p> <p>The majority of storage and releases of water in the plan area are for agricultural irrigation. Wastes from agricultural irrigated lands can cause pollutants to be in the river when discharged to surface water through irrigation return flows, tailwater, drainage water, and subsurface (tile) drains. As noted above, this is part of the baseline condition, which the plan amendments would generally improve. However, independent of the plan amendments, baseline conditions are expected to improve with regard to nitrates, pesticides, and herbicides due to the Irrigated Lands Regulatory Program (ILRP). For example, agricultural landowners in the eastern San Joaquin are under waste discharge requirements that require them to manage and reduce their surface water contamination (Order R5-2012-0116, as revised in Order 2018-0002.)</p> <p>The existence of water bodies listed as impaired under 303(d) does not make a temperature TMDL for each of those water bodies a reasonably foreseeable project at this time. As the commenter notes, the Clean Water Act does not set a deadline for the development of TMDLs following a listing decision by the EPA. (33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(d).) The commenter makes an unsupported assertion that the State Water Board should only consider temperature effects through a TMDL process. However, as the case cited by commenter states, such a decision is wholly within the discretion of the State. (See San Joaquin River</p>

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		<p>the State had not yet developed any TMDLs for temperature on the San Joaquin River or its tributaries, the Court dismissed the suit. (SJTA Attachment 11 [ATT10], p. 2-3.)</p> <p>The CWA does not set a deadline for the development of TMDLs following a listing decision by EPA. (33 U.S.C. § 1313[d]; 40 C.F.R. § 130.7[d].) To date, the SWRCB has not started developing temperature-related TMDLs for the San Joaquin River or its tributaries in response to EPA’s listing decision. (SED, at Table 5-5, p. 5-12.) If the Board intends to address the issue of water temperature on the San Joaquin River and the three eastside tributaries, it should do so within the TMDL process, not through the WQCP process using flow as a surrogate for temperature, as is being attempted here. Notably, the proposed objective of 40% unimpaired flow from February-June will not obtain the Pacific Northwest water temperature guidelines which formed the basis of the 303[d] listing. (See SJTA Table 2-4 [ATT24].)</p> <p>In setting the Tributary Flow Objectives with the aim of attempting to control water temperature in the San Joaquin River and three eastside tributaries, the SED fails to properly account for the temperature characteristics of the waters involved. The analysis in the SED shows that there will be small incremental reductions in water temperatures downstream of the rim dams on the Stanislaus, Tuolumne and Merced Rivers at 40% unimpaired flow. (SED, at 19-22 - 19-30.) This analysis was done with a carryover storage target, reservoir refill criteria and flow shifting. (SED, at Appx. F.1, p. F.1-36 - F.1-38.) This is the wrong analysis as none of those components are required by the objectives. When the temperature modeling is run without these components, many of the supposed temperature benefits are lost (see SJTA Table 2-4 [ATT24]), and by the SED’s own account, water temperatures are worse than under baseline conditions (SED, Appx. F1, p. F.1-42).</p> <p>The SED provides three tables purportedly showing the anticipated temperature changes on the San Joaquin River, including at Vernalis. (SED, at 19-31 - 19-33.) As this is the Bay-Delta Plan designed to protect migration of native San Joaquin River watershed fish through the Delta, the quality of the waters on the San Joaquin River through the Delta need to be examined if the Board is to fulfill its statutory obligation of setting reasonable objectives considering the "[e]nvironmental characteristics of the hydrographic unit under consideration." (Water Code, § 13241[b].) However, the SED provides no analysis of the temperature results on the San Joaquin River, instead limiting its analysis to the temperature results on the three eastside tributaries. Specifically, in Chapter 19, Staff explains the water temperature benefits for each significant life stage of Central Valley fall-run Chinook salmon on the three tributaries. (SED, at 19-34 - 19-43.)</p> <p>However, with respect to the anticipated water temperature changes on the San Joaquin River, the SED provides no analysis as to how such changes (if any) would impact adult migration (SED, at 19-34), reproduction (SED, at 19- 34 - 19-35), core rearing (SED, at 19-37 - 19-38), or smoltification (SED, at 19-39 - 19-40). The absence of any analysis on the San Joaquin River is explained by the acknowledgment in the SED that 40% unimpaired flow is "not expected to produce significant benefits or impacts on optimal salmonid temperature habitat." (SED, at 19-43.)</p> <p>The reason that no significant benefits or impacts to temperature occur is because San Joaquin River water temperatures, including those at Vernalis, are almost entirely a function of ambient air temperature. In fact, in the 1991 Bay Delta Plan, the SWRCB stated, "controlling water temperature in the Delta utilizing reservoir releases does not appear to be reasonable, due to the distance of the Delta downstream of reservoirs, and</p>	<p>Group Authority v. U.S. Environmental Protection Agency (E.D. Cal., May 29, 2012, No. 2:11-CV-03243-JAM) 2012 WL 7809066, at 2 ["Ultimately, the State will chose ‘both if and how’ it will implement the nonpoint source provisions of any TMDL approved or promulgated by EPA."] Citing Pronsolino v. Nastri (9th Cir. 2002) 291 F.3d 1123, 1126-27 (emphasis in original).) Previously, the Central Valley Regional Water Quality Control Board projected a date of 2027 for adopting a TMDL. However, the development of such a TMDL is not part of the current Central Valley Regional Water Quality Control Board’s work plan.</p> <p>The State Water Board does not purport to establish temperature objectives for the plan area. That is beyond the scope of the plan amendments. The description of the environmental setting in Chapter 5, Surface Hydrology and Water Quality, includes consideration of water quality and listed impairments (see Tables 5.4 and 5.5) and Chapter 19, Analysis of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, and Appendix F.1, Hydrologic and Water Quality Modeling, analyzes potential temperature effects to show that a numeric water quality objective for the LSJR of 40% unimpaired flow would meet the narrative water quality objective of supporting viable native San Joaquin River migratory fish populations by improving temperature conditions for critical February through June life stages.</p> <p>The primary way to control water temperature in the tributaries is through river flow and reservoir storage. If a TMDL process were implemented for water temperature, it would likely result in requirements that are similar to the LSJR alternatives, but with a focus only on water temperature. As demonstrated in Chapter 19, the fish and wildlife benefits of the plan amendments are not limited to improvements in temperature or salinity but include other benefits. For this reason, only addressing water temperature through a TMDL process would not produce the holistic effect intended by the plan amendments to provide for the reasonable protection of fish and wildlife beneficial uses.</p> <p>A reasonable carryover storage target was a necessary assumption in the SED programmatic analysis because the proposed plan amendments require the State Water Board to include minimum reservoir carryover storage targets or other requirements to help ensure that providing flows to meet the flow objective will not have adverse temperature or other impacts on fish and wildlife (Appendix K). By commenter’s own admission, commenter’s modeling runs excluded that required component. For additional information regarding the use of a reasonable carryover storage target in the modeling, see Master Response 3.2, Surface Water Analyses and Modeling.</p> <p>Commenter appears to have asserted if temperatures are not “optimal” there is no benefit to fish and wildlife. However, the full quote from the lower San Joaquin River temperature analysis, Chapter 19 (at 19-34), is “[a]lthough there are limited benefits to optimal salmonid temperature habitat in the LSRJ, there are substantial reductions in average temperatures and 90th percentile temperatures, primarily during the March through June time period with higher flows providing greater reductions to these measures of temperature.” (Emphasis added.) For salmonids, there is a response gradient between “optimal” (measured under the EPA criteria as 55.4 to 60.8 degrees Fahrenheit) and “lethal” temperatures (measured under the EPA criteria as above 75.2 F). With incremental temperature increases above optimal, the potential for adverse but non-lethal effects (e.g., reduced growth) increase until temperatures reach levels that cause direct mortality (lethal temperatures). It also should be recognized that the potential for adverse effects associated with exposure to suboptimal or lethal temperatures is dependent on the duration of exposure. For example, criteria for lethal temperatures can be based on experiments that continuously expose fish to those temperatures. Therefore, it does not mean that all waters that reach those temperatures are impassible if fish are only temporarily exposed or can find cooler areas (i.e. “thermal refugia”) during critical times (Ligon et al. 1999.). The benefits of temperature reductions are discussed in Chapter 19 and Master Response 3.1, Fish Protection. In addition, the higher flows of the LSJR alternatives may help expedite fish migration to the ocean. Much has been learned since the 1991 plan was adopted almost 30 years ago.</p>

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		<p>uncontrollable factors such as ambient air temperature, water temperature in the reservoir releases, etc." (SWRCB, 1991 Bay-Delta Plan, p. 5-16.) The Board went so far as to say that it "considers reservoir releases to control water temperatures in the Delta a waste of water." (SWRCB, 1991 Bay- Delta Plan, p. 5-16.) There is no mention of this previous State Water Board finding in the SED.</p> <p>Clearly, the inability to control temperature in the Delta (which includes Vernalis) via reservoir releases is an environmental characteristic which must be considered by the Board in setting water quality objectives designed to protect fish migrating through the Delta. The failure to consider this fact is a violation of Water Code Section 13241[b]. Thus, on the one water quality constituent the State Water Board identified, i.e., water temperature, it completely whiffed when providing data or analysis as to how the proposed flow objectives would make water quality (water temperature) better as San Joaquin River water enters the Delta. State Water Board staff fails again to understand the planning process is the Bay-Delta Plan, not the Lower San Joaquin River Basin Plan.</p>	<p>However, even then, it was acknowledged that even if you could not control temperatures within the Delta through reservoir releases, there were benefits vis-à-vis temperature from "[i]ncreased flows to move the juvenile salmon more quickly downstream, thus reducing exposure time to potential hazards." (SWRCB, 1991 Bay-Delta Plan, p. 5-20.)</p>
3239	80	<p>The SED fails to consider water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area (Water Code, § 13241[c]).</p> <p>Failure to coordinate control of all water resources in the Bay-Delta</p> <p>The Porter-Cologne Act requires the State Water Board to consider "[w]ater quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area." (Water Code, § 13241[c].) In setting the LSJR objectives, the State Water Board failed to fulfill its obligation of considering all factors that affect water quality in the area.</p> <p>The State Water Board’s Narrative Objective defines the area in which water quality is targeted by the proposed water quality control plan. Specifically, the Narrative Objective states that certain inflow conditions are to be maintained "from the San Joaquin River watershed to the Delta at Vernalis sufficient to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta." (SED, at Appx. K, p. 18.) Thus, the area to be protected by the objectives is the San Joaquin River watershed and the migratory path of native San Joaquin River watershed fish through the Delta. In other words, the geographic scope of the area targeted extends from the farthest reaches of the San Joaquin River watershed, all the way through the Delta.</p> <p>Pursuant to Water Code section 13241[c], the State Water Board was required to consider "all factors which affect water quality" in the San Joaquin River watershed through the Delta. Similarly, the Board must consider "all demands being made and to be made on those waters" (Water Code, § 13000.) The First District Court of Appeal addressed this issue in <i>Racenelli</i>, in which the State Water Board employed a "without project" standard, meaning the number of days in a year that suitable water quality would be available in the Delta if the Central Valley Project and State Water Project had never been constructed. (<i>Racenelli</i>, supra, 182 Cal.App.3d at 116.)</p> <p>The <i>Racenelli</i> court held that the Board "erroneously based its water quality objectives upon the unjustified premise that upstream users retained unlimited access to upstream waters, while the projects and Delta parties were entitled only to share the remaining water flows." (<i>Racenelli</i>, supra, 182 Cal.App.3d at 118.) In other words, the Board considered "only the</p>	<p>Please see Master Response 1.1, General Comments, Master Response 2.1, Amendments to the Water Quality Control Plan, and Chapter 1, Introduction, Section 1.2 Plan Area, regarding the plan area (i.e., downstream of the rim dams on the three eastside tributaries and the southern Delta) and extended plan area (i.e., upstream of the rim dams to the end of the watersheds). Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board consideration of beneficial uses in the context of the water quality control planning process and implementation of the Bay-Delta plan through water rights proceedings.</p>

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		<p>water use of the Delta parties . . . and the needs of the customers served by the projects . . . " without giving any attention "to water use by the upstream users." (Racanelli, supra, 182 Cal.App.3d at 118.)</p> <p>The Court stated that, to remedy this problem, the Board must "take the larger view of the water resources in arriving at a reasonable estimate of all water users." (Racanelli, supra, 182 Cal.App.3d at 119.) As it did in setting the "without project" standards, the State Water Board has again failed to consider all the factors that might affect water quality in the area targeted, and all demands being made on those waters.</p>	
3239	81	<p>Failure to coordinate control of all water resources in the San Joaquin River watershed</p> <p>While the area to be protected by the LSJR Objectives covers the entire Delta and San Joaquin River watershed (SED, at Appx. K, p. 18), the Tributary Flow Objective and the Vernalis Flow Objective are significantly more narrow in scope. To begin, these objectives do not call for any contributions from the San Joaquin River watershed upstream of its confluence with the Merced River. The Tributary Flow Objective only targets the waters of the Merced, Tuolumne and Stanislaus Rivers, and the Vernalis Flow Objective only requires contributions from those same three tributaries. (SED, at Appx K, p. 18, 29.)</p> <p>Similarly, neither objective requires any contribution from water users on the mainstem of the San Joaquin River downstream of its confluence with the Merced River, including any diverters on the west side of the San Joaquin River. The objectives also do not require any contributions from water users in the Delta, despite the Board's assertion that the objectives are to protect fish and wildlife beneficial uses through the Delta. By ignoring the water users and resources in these areas, the objectives fail to achieve "the coordinated control of all factors which affect water quality in the area" that is required by Water Code, § 13241[c].</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding the scope of the Bay-Delta plan proceedings. The State Water Board is reviewing and considering updates to other elements of the Bay-Delta Plan, including requirements for flows and cold water habitat in the Sacramento River, its tributaries and tributaries to the Delta (the Mokelumne, Cosumnes, and Calaveras Rivers); Delta outflows; and water project operations in the interior Delta (State Water Board 2017a) through a separate process.</p> <p>Please see Master Response 1.1, regarding the approach to the SED analyses, including watersheds considered and why the San Joaquin River was not included in the analysis.</p> <p>Please see master Response 3.1, fish Protection, regarding the need for increased and more variable flows in the three eastside LSJR tributaries.</p>
3239	82	<p>Phasing of the WQCP update precludes coordinated control of all water resources in the Bay-Delta.</p> <p>Historically, the State Water Board has performed its review of the Bay Delta Plan in one comprehensive process. (SWRCB, 2006 Bay Delta Plan; see also 1995 Bay Delta Plan; 1991 Bay Delta Plan; and 1978 Bay Delta Plan.) Although the objectives are complex and multi-faceted, the Bay Delta Plan is a single plan that sets forth water quality objectives which contribute to the beneficial uses in the Bay Delta Estuary. (See 1995 Bay Delta Plan, at 3.)</p> <p>Because the purpose of the water quality objectives is to benefit a Bay Delta watershed, the objectives are often inextricably interrelated. For example, the San Joaquin River objectives are affected by and affect the objectives which set reverse flows, export/inflow ratios, and floodplain habitat flows.</p> <p>The revised objectives do not require any new contributions from water users on the Sacramento River or its tributaries, which also contribute to water quality in the Delta. The purported reason for this exclusion is that revisions to all other parts of the Bay-Delta Plan (including contributions from the Sacramento River watershed, Delta outflows and export restrictions) will be addressed in a separate phase of the update, namely Phase II. (SED, at 1-3.) "Phases I and II are independent of each other, addressing different water quality objectives and associated programs of implementation." (SED, at 1-3.)</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding the scope of the Bay-Delta Plan proceedings. As discussed in the Executive Summary and Master Response 1.2, the State Water Board is engaged in a multi-pronged approach to address the ecological crisis in the Bay-Delta and protect beneficial uses in the Bay-Delta and tributary watersheds. This SED evaluates the proposed amendments to the Bay-Delta Plan involving the unique and distinct characteristics of the San Joaquin River watershed. The State Water Board is reviewing and considering updates to other elements of the Bay-Delta Plan, including requirements for flows and cold water habitat in the Sacramento River, its tributaries and tributaries to the Delta (the Mokelumne, Cosumnes, and Calaveras Rivers); Delta outflows; and water project operations in the interior Delta (State Water Board 2017a).</p> <p>The San Joaquin River flow objectives are not dependent on the adoption and implementation of the Sacramento River and Delta tributary objectives. The one proceeding is not a reasonably foreseeable consequence of the other, nor does it compel completion of the other. These separate water quality proceedings involve different water quality objectives, largely different geographic areas, and can be developed and implemented independently of each other.</p> <p>The SED evaluates the potential cumulative environmental effects associated with the LSJR flow and southern Delta salinity objectives together with other projects and programs that could cause related impacts, including the Sacramento Bay-Delta watershed update, in Chapter 17, Cumulative Impacts, Growth-Inducing Effects, and Irreversible Commitment of Resources.</p>

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		<p>This phased approach to addressing conditions in the Bay-Delta violates the Board's obligation to consider "all factors which affect water quality in the area." (Water Code, § 13241[c].) Separating south Delta and San Joaquin River flows from the remainder of the basin plan review results in a piece-mealed analysis that is non-comprehensive. The San Joaquin River is one of the two rivers whose confluence makes up the Delta. Separating the flow objectives on the San Joaquin River from the larger "comprehensive" review of the remainder of the Bay Delta Plan makes little sense. The quantity of San Joaquin River flows that will reasonably be required to protect the beneficial uses in the Delta is affected by reverse flows, exports, and other factors being reviewed in the "comprehensive" review including inflow from the Sacramento River.</p> <p>The Board cannot make a decision as to what contributions are necessary (or reasonable) from the San Joaquin River watershed for the protection of fish migrating through the Delta, without a corresponding assessment of what contributions are necessary (or reasonable) from the Sacramento River watershed. Indeed, "[p]ast experience has shown that piecemeal efforts to address the Bay-Delta's problems have failed because those problems are interrelated and because conflicting interest groups and stakeholders can block actions that promote some interests at the expense of others" (In re Bay-Delta, supra, 43 Cal.4th at 1165 [acknowledging that CALFED properly "determined that the four primary project objectives had to be addressed concurrently"].) For this reason, evaluating San Joaquin River flows in isolation, without considering the other basin-wide mechanisms that are interrelated, violates the Board's obligation to set objectives that consider "the coordinated control of all factors which affect water quality in the area." (Water Code, § 13241[c].)</p> <p>The phasing process is problematic for other reasons as well. Separating the processes will require water users on the San Joaquin River to expend twice the resources to achieve the same result. Notably, the Board intends to address Delta outflows and interior Delta flows in Phase II. (SED, at Appx. K, p. 6.) To the extent that the Board believes San Joaquin River inflow may play a role in these components of the plan, SJTA members will be officially part of the Phase II update as well. Moreover, the WQCP states that the San Joaquin River flow objectives may even be updated as part of Phase II. (SED, at Appx. K, p. 6.)</p> <p>Because SJTA interests will be subject to all "phases" of the Bay Delta Plan review, it will be required to participate in two different review processes in front of the State Water Board, review at least two different environmental documents, and to the extent the adoption and/or implementation of any revised objectives do not comply with law, the SJTA will have to challenge two different actions adopting objectives and two different implementation plans. This unfairly prejudices the regulated parties on the LSJR.</p>	
3239	83	<p>Failure to coordinate control of factors other than flow</p> <p>One of the Water Quality impairments listed by the State Water Board in Chapter 5 is invasive species. (SED, at 5-11.) In the State Water Board SED there is no discussion of how controlling this pollutant will benefit native fish migrating to and from the tributaries and through the Delta.</p> <p>The Board has repeatedly recognized in the 1995 Bay-Delta Plan, the 2006 Bay-Delta Plan, and now in this update that predation is a problem in the Bay-Delta. Nevertheless, the Plan consistently fails to tackle the issue directly through the objectives, and as a result, the discussion about predation has never translated into action by the State Water Board. The failure of the Board to directly address the issue of predation by invasive species through an</p>	<p>Please see Master Response 1.1, General Comments, for discussion on predatory fish in the LSRJ and the three eastside tributaries (refer to the section on aquatic biological resources). Information about the extent to which predatory fish pose a threat to anadromous fish in the SJR system is discussed in Chapter 7, Aquatic Biological Resources, and Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives. The body of evidence shown in Chapter 7, Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, and Appendix C provides sufficient reason to conclude that predatory fish are not the primary stressor affecting anadromous fish populations and that restoring more natural temperature and flow regimes will help to better support the various life history adaptations of native fish and other native aquatic organisms and may reduce predation from nonnatives. 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</p>

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		<p>amendment of the objectives is a violation of the Board’s obligation to coordinate control of all factors which affect water quality in the area. (Water Code, § 13241[c].)</p>	<p>stressors other than flow.</p>
3239	84	<p>The SED fails to properly consider the economic impact of the objectives.</p> <p>The Water Code requires that the economic impact of the objectives be examined. (Water Code, § 13000, 13241[d].) Courts will strike down a Board’s decision as unreasonable if it is "arbitrary, capricious, or lacking in evidentiary support." (Racanelli, supra, 182 Cal.App.3d at 113, citing California Hotel & Motel Assn. v. Industrial Welfare Com. (1979) 25 Cal.3d 200, 212.) As shown below, the economic analysis in the SED lacks the necessary evidentiary support to demonstrate that the objectives are reasonable in light of their economic impact, and otherwise fails to show that there is a "rational connection" between the objectives chosen and the economic cost of attaining the benefits anticipated to be achieved by the objectives. (Racanelli, supra, 182 Cal.App.3d at 113.)</p> <p>The SED states that the economic analysis contained in Chapter 20 will "help inform the State Water Board’s consideration of potential changes to the 2006 Bay-Delta Plan related to LSJR flow and southern Delta water quality objectives." (SED, at 20-3.) However, it also states that there is no analysis of the economic impact of implementing the objectives, as that type of "project-level" change will be addressed in subsequent proceedings. (SED, at 20-3.) The level of analysis contained in the SED is problematic for two reasons.</p> <p>First, although the SED states that the economic analysis is intended to assist the Board in its consideration of the proposed changes to the water quality objectives, it also states--in the preceding paragraph--that the analysis should not be used to compare "costs and benefits of the LSJR alternatives." (SED, at 20-2.) The document states that the new objectives will result in potential costs (e.g. reduced agricultural production) and potential benefits (e.g. improved fisheries), but the analysis does not attempt to compare those costs and benefits, nor does it attempt "to sum values across resource topics." (SED, at 20-12.) In fact, "the reader is strongly discouraged from trying to draw conclusions across topics concerning the overall net benefits of a particular alternative." (SED, at 20-2.)</p> <p>Of course, the problem with this limitation in the analysis is that the Board is required to perform this exact type of cost-benefit assessment in fulfilling its obligation under the Water Code to set objectives that provide reasonable protection to beneficial uses considering the economic impact of the objectives, as well as the other demands and beneficial uses of the water. (Water Code, § 13000, 13241.) If the cost-benefit assessment is not contained in the document that the Board relies upon to adopt the objectives, then the record will be devoid of evidentiary support for the Board’s ultimate decision.</p> <p>A court will not assume from the Board’s adoption of the WQCP that the Board members must have silently and internally conducted the very cost-benefit analysis that the drafters of the SED strongly discouraged. Courts must be assured that the Board "adequately considered all relevant factors, and . . . demonstrated a rational connection between those factors, the choice made, and the purposes of the [Porter-Cologne Act]" (Racanelli, supra, 182 Cal.App.3d at 113.) Without a discussion of the cost-benefit analysis, there is no such assurance. Accordingly, the Board should decline to adopt the WQCP based on the insufficient economic analysis provided.</p> <p>Second, the economic impact of implementing the objectives cannot be delayed to subsequent proceedings. As the Board is required to adopt a WQCP that includes both</p>	<p>The State Water Board appropriately considered economics in Chapter 20, Economic Analyses. A cost-benefit analysis is not a requirement under CEQA or the water quality control planning process. Please see Master Response 1.1, General Comments, regarding general information about the scope of the economic analysis and the regulatory context. Please also see Master Response 8.0, Economic Analyses Framework and Assessment Tools, for more information regarding the regulatory context and the reasonableness of the assumptions and considerations made within the framework of analyzing economic effects. Please see Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model, for a discussion of SWAP as the best available tool to analyze agricultural economic effects and SWAP configuration and use. Please also see response to comment 3239-74 and Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act (SGMA) regarding groundwater assumptions and the SED approach to incorporating SGMA, which is a regulatory framework that has not yet been implemented.</p> <p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board authorities with respect to water quality control planning process (including, Water Code section 13241) and a discussion of the Bay-Delta Plan’s program of implementation to achieve water quality objectives with the future implementation of the plan in a water right or water quality proceeding.</p>

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		<p>objectives and a program of implementation, the economic impact of the entire plan needs to be assessed to determine if the objectives are reasonable considering their economic impact. (Water Code, §§ 13050(j), 13241(d).)</p> <p>Moreover, the analysis understates the impact to the agricultural economy in several ways. First, Board staff used a model known as the Statewide Agricultural Production ("SWAP") model to analyze the impacts to agriculture. (SED, at 20-15.) The SWAP model optimizes available land and water so that net returns to farmers are maximized. (SED, at 20-15.) It achieves this result by assuming that crops which use large amounts of water and generate low net revenue per acre, such as pasture, alfalfa and rice, are fallowed when water is more scarce. Higher-revenue crops are fallowed last under the model. The SWAP model employs this trade-off method across the entire system, not within individual farms. Accordingly, it assumes that some farmers will fallow fields while others will not, based entirely on the type of crops being grown.</p> <p>It also assumes that farmers will act rationally and with perfect information in directing water towards the highest value crops in times of shortage. None of these assumptions are likely to occur in the real world, or even permitted to occur within the irrigation districts impacted, and thus the model significantly understates the economic impact on agriculture. The analysis also assumes that surface water reductions are offset by maximum groundwater pumping rates at 2009 capacity levels, without any analysis as to whether pumping at this rate would be lawful under SGMA. (SED, at 20-16.) This assumption likely overstates the amount by which surface water will be replaced by groundwater, and thus understates the economic impact to agriculture.</p> <p>For these reasons, the economic analysis is insufficient, and the Board should decline to adopt the WQCP.</p>	
3239	85	<p>The Proposed Objectives fail to consider the need for developing housing within the region.</p> <p>SWB Staff has failed to consider the need for developing housing within the region as required under Water Code section 13241, subdivision [e] of the Water Code. In developing a water quality control plans the SWB must take into consideration the beneficial uses to be protected, and the water quality objectives reasonably required to achieve that purpose. Of the factors necessary for consideration by the SWB in establishing water quality objectives is the need for developing housing within the region. (Water Code, §13241[e].) The scant analysis of the growth-inducing effects of the proposed alternatives in the SED (SED, at 17-68.) is insufficient to comply with this directive.</p> <p>Currently, consideration and analysis of the need for developing housing within the region is of critical importance. California is suffering from a serious housing shortage. (Taylor, Perspectives on Helping Low-Income Californians Afford Housing (Legislative Analyst’s Office 2016) p. 1.) This is due in part to environmental protection policies that constrain new housing development. (Id. at 6.) The WQCP will increase dependence on groundwater resources within the region, thus, reducing the water source relied on for domestic use within the plan area. As an example, the Planada Community Service District in Merced County recently dealt with major challenges in meeting its community water service needs. Several of its wells went dry due to the increased dependence on groundwater, resulting in a need for emergency funding in order to put new wells in place. Without reliable water sources, future residential development may be restrained.</p>	<p>The Legislative Analyst’s Report cited by the commenter states, “Local community resistance and California Environmental Quality Act (CEQA) challenges limit the amount of housing – both private and subsidized— built in California... [subsidized housing] often is perceived as bringing negative changes to a community’s quality or character.” There is no general statement that environmental protection is constraining housing development. (LAO 2016.)</p> <p>Please see Master Response 6.1, Cumulative Analysis, for more information regarding growth effects and housing considerations. The plan amendments within the SED do not propose any changes to city and county general plans, zoning ordinances, and/or other tools used to implement Smart Growth strategies and any other housing or development strategies in the plan area.</p> <p>Please also see response to comment 3239-73 regarding municipal supplies and Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act. As identified in Chapter 13, Service Providers, the Planada Community Service District is wholly reliant on groundwater. As stated in Chapter 9, Groundwater Resources, 95 percent of the total water use in the Modesto, Turlock, and Merced groundwater subbasins is irrigated agriculture with municipal water use accounting for approximately the remaining 5 percent (SED at 9-13). The plan amendments do not, in and of themselves increase dependence on groundwater. However, the SED acknowledges that the historic local response in the plan area to reduced availability of surface water supplies is to pump more groundwater.</p>

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		<p>The Board should not adopt the WCQP until the SWB has considered the need for developing housing within the region as required by the Water Code.</p>	
3239	86	<p>The Proposed Objectives fail to consider the need to develop and use recycled water.</p> <p>The Water Code requires consideration of "the need to develop and use recycled water." (Water Code, §13241[f].) The SWB's proposed objectives only consider the need to use recycled water as an offset for reduced surface water. The WQCP, as written, passes on the necessary consideration of development to waste water treatment plants ("WWTPs"). It states, "[m]odifications required for existing WWTPs cannot be known at this time because they would depend on the type of wastewater treatment currently conducted at a WWTP, the availability of resources (e.g., funding and space), and the management of the WWTP by the local wastewater treatment special district or municipality." (SED, at 16-49.)</p> <p>It goes on to say "details of the modifications to existing WWTPs and respective distribution systems to support the development of recycled water sources, are unknown at this time. It is assumed these modifications may be carried out by the municipalities and wastewater treatment service providers." (Ibid.) Merely alluding to unknown, but available, information is insufficient to comply with the directive to consider the need to develop recycled water. Accordingly, the Board should not adopt the WQCP until proper consideration is given to this factor.</p>	<p>Water Code section 13241 requires the State Water Board to consider the need to develop and use recycled water in establishing water quality objectives. As discussed in the Executive Summary, the need to develop and use recycled water will be increasingly important in the state to meet water supply demands. The flow objectives will promote the development of recycled water as an alternative source. The salinity objectives would not affect the need to develop and use recycled water. The commenter faults the plan amendments for not considering the exact details by which wastewater treatment plants (WWTPs) would need to be developed and modified to support recycled water. As explained in Chapter 16, Evaluation of Other Indirect and Additional Actions, the details (e.g., location, timing of construction, and details of the modifications to existing WWTPs) are unknown at this time. However, this does not preclude consideration of the need to develop and use recycled water under Water Code section 13241. This section "does not specify how a water board must go about considering the specified factors. Nor does it require the board to make specific findings on the factors." (City of Arcadia v. State Water Resources Control Board (2010) 191 Cal.App.4th 156, 177.)</p>
3239	87	<p>Intangible Considerations</p> <p>The State Water Board SED claims benefits to the ecosystem. The beneficial use is to be in the Bay-Delta, not the Lower San Joaquin River. Other than FPH and water temperature, the State Water Board SED has no discussion of how the ecosystem will be improved other than the belief that flow is the master variable and if there is more flow the ecosystem will be better.</p>	<p>As described in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, higher flows in the spring, and cooler water temperatures are anticipated to benefit multiple levels of the aquatic ecosystem (see Section 3.7).</p> <p>Please see Master Response 3.1, Fish Protection regarding benefits of the unimpaired flow approach, and Master Response 1.2, Water Quality Control Planning Process, regarding the State Water Board's protection of beneficial uses in the Bay-Delta and tributary watersheds.</p>
3239	88	<p>The Water Code requires that the Board set reasonable water quality objectives to protect beneficial uses, considering all demands being made on the waters involved, and all other relevant factors. (Water Code, §§ 13000, 13241.) The SED fails to properly consider the impacts of the objectives on municipal and industrial supply, agricultural supply, groundwater recharge, water storage, water transfers and hydropower. The SED also fails to consider whether the objectives are reasonable considering past, present and future beneficial uses, environmental characteristics of the hydrographic unit under consideration, water quality conditions that can be reasonably achieved through the coordinated control of all factors, the economy, the need for housing, and the need to develop and use recycled water.</p> <p>The Board needs to balance all of these factors against the supposed benefit achieved by the objectives, which is the additional production of 1,103 fall-run Chinook Salmon, i.e., an increase of less than a quarter of 1% of the average annual production of one species. The SED does not present sufficient information for the Board to conduct this weighing and balancing, primarily because SWB Staff never modeled the actual project. Nevertheless, the information and analysis provided by the SJTA and its member agencies clearly demonstrates that the proposed objectives are not reasonable. The significant impacts are simply not justified by the supposed benefits to one fish species.</p>	<p>Please refer to the Executive Summary, Chapter 3, Alternatives, and Chapter 18, Summary of Impacts and Comparison of Alternatives, for the justification for recommending LSJR and SDWQ alternatives for adoption. Please see Table ES-27 for a summary of the primary locations in the SED where information regarding the section 13241 factors may be found. Please see Master Response 1.2, Water Quality Control Planning Process, regarding the authority of the State Water Board to adopt water quality objectives in the Bay-Delta Plan, beneficial uses, and 13241 factors. Please also see Master Response 2.1, Amendments to the Water Quality Control Plan, for additional information regarding the justification for the plan amendments, including 13241 factors.</p> <p>Please see the response to comment 3239-8 regarding anticipated benefits to native fish populations from implementation of the plan amendments. Please also see Master Response 3.1, Fish Protection, for additional explanation of the anticipated benefits to fish and wildlife from the plan amendments as well as an explanation of why the State Water Board did not rely upon SalSim due to limitations in the model.</p> <p>Please see Master Response 1.1, General Comments, regarding the program-level document and program-level analysis. Please also see the Master Response 1.2 regarding general methods and modeling and how differing opinions on modeling do not equate to inadequacy. Please also see the response to comment 3239-44 regarding the SJTA analysis. The SJTA analysis does not invalidate the analysis produced in the SED and used for decision-making purposes regarding plan amendment adoption.</p> <p>Section 13241 "grants the [State Water] Board broad discretion to establish reasonable standards consistent</p>

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			<p>with overall statewide interest.” (United States v. State Water Resources Control Bd., supra, 182 Cal.App.3d at p. 116.) There is no set formula in determining reasonableness. Environmental characteristics of the area, beneficial uses, and economic considerations, for example, all are necessary parts of the determination of reasonableness. When establishing the water quality objectives, the State Water Board will consider the section 13241 factors and information in the SED, including the impacts and benefits of the proposed water quality objectives, in determining what will ensure reasonable protection of the beneficial uses.</p>
3239	89	<p>The Program of Implementation violates the Porter-Cologne Act.</p> <p>A Water Quality Control Plan must include a program of implementation. (Water Code, § 13050[j].) The POI is a road map for achieving the objectives in the plan, and must include (1) a "description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private," (2) a "time schedule for the actions to be taken," and (3) a "description of surveillance to be undertaken to determine compliance with objectives." (Water Code, § 13242.) All three of these components must be in the plan itself. (see, e.g., State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 727 [holding that the time schedule for implementing the objectives must be in the plan itself, not constructed after the adoption of the plan].) The proposed POI is deficient for numerous reasons and the Board should not adopt the proposed water quality control plan.</p>	<p>Please see Appendix K, Revised Water Quality Control Plan for the Program of Implementation and Master Response 2.1, Amendments to the Water Quality Control Plan for a description of the LSJR flow program of implementation elements. Please also see Master Response 2.2, Adaptive Implementation, for additional detail of the adaptive implementation framework in the LSJR flow program of implementation. The program of implementation for the LSJR flow objectives and the South Delta salinity objective sets out detailed actions to achieve the objectives, time schedule for the actions to be taken, and monitoring requirements to determine compliance with the objectives. For example, the LSJR flow program of implementation describes numerous actions necessary to achieve and monitor compliance with the flow objectives within prescribed timeframes, with a final deadline of 2022 for the State Water Board to fully implement the February through June LSJR flow objectives through water right or water quality actions. The program of implementation for the salinity objective likewise describes specific actions necessary to achieve the objective, time frames for the action, and monitoring requirements. The program of implementation is more specific than what a court has held is adequate under Water Code section 13242. (See State Water Resources Control Board Cases (2006) 136 Cal.App.4th 674, 776 ""timely completion of a water rights proceeding" suffices for purposes of 13242 "as long as the proceeding was, in fact, timely completed."")</p>
3239	90	<p>The Program of Implementation is unlawful because it does not describe the actions necessary to achieve the objectives, and instead allows for changes to the objectives without a properly noticed hearing.</p> <p>The Water Code mandates that the program of implementation describe the actions "necessary to achieve the objectives." (Water Code, § 13242.) The proposed WQCP violates this rule by treating the program of implementation as a tool for modifying the objectives, not achieving the objectives. Revisions to a WQCP, including any revisions to the objectives therein, can only be made after a properly noticed and conducted hearing. The proposed POI, which would allow for changes to the objectives without a properly noticed hearing, is unlawful and should not be approved by the Board.</p> <p>When the State Water Board decides upon a plan of action that is "necessary to achieve the objectives" (Water Code, § 13242[a]), and adopts that plan of action as part of its water quality control plan, it must adhere to it. (Water Code, § 13247 ["in carrying out activities which may affect water quality," the State Board "shall comply with water quality control plans approved or adopted by the state board . . ."]; State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 730 ["having determined in a water quality control plan that a water rights proceeding was necessary to achieve the water quality objectives in that plan," the Board cannot decide that it will not fully allocate responsibility for the objective in the water right proceeding and thereby "refuse to enforce its own plan"].)</p> <p>The Board cannot refuse to take the actions it has deemed necessary to achieve the objectives, as doing so would "make a de facto amendment to a water quality objective." (State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 732.) Such amendments are unlawful because a plan cannot be changed "without complying with the procedural requirements for amending a water quality control plan." (State Water</p>	<p>Please refer to Master Response 1.2, Water Quality Control Planning Process, for response to comments regarding the State Water Board’s legal authority relating to the program of implementation, and the adequacy of the program of implementation.</p> <p>Please see response to comment 3239-6 regarding changed made to the LSJR flow objectives in Appendix K, Table 3 to increase clarity.</p> <p>Please refer to response to comment 3239-9 and Master Response 2.2, Adaptive Implementation, for a discussion of the authority and framework to adaptively implement the objectives. The adaptive adjustments do not change the objectives. There are two objectives, a narrative objective and a numeric objective, which are complementary. The commenter suggests in comments 3239-75, 3239-177, and 3239-178 that the State Water Board should consider a functional flow approach. The percentage of unimpaired flow defines a block of water that is large enough and that can be shaped and shifted to provide functional flows needed to achieve fish and wildlife goals. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding LSJR flow requirements, and Master Response 3.1, Fish Protection, regarding unimpaired flow as functional flow.</p> <p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the LSJR Flow program of implementation requirement for minimum carryover storage targets or other requirements to help ensure that providing flows to meet the flow objectives will not have adverse temperature or other impact on fish and wildlife and an explanation as to why specific carryover storage targets or other requirements are not established in this proceeding to avoid constraining future implementation and to encourage site-specific solutions.</p> <p>Please also see Master Response 2.1 regarding modifications to Appendix K, Revised Water Quality Control Plan. Language in adaptive implementation method (c) allowing water to be held until the following year is removed.</p>

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		<p>Resources Control Bd. Cases, surpa, 136 Cal.App.4th at 734; see Water Code, § 13244.) Where the method of implementation would "fundamentally alter[] [the] objectives, such an alteration [can] be accomplished only through a properly noticed and conducted regulatory proceeding." (State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 729.)</p> <p>Here, the POI states that the LSJR flow objectives for February through June will be implemented by 2022 through water rights actions or water quality actions. (SED, at Appx. K, p. 28.) Specifically, the LSJR flow objectives on the tributaries will be implemented "by requiring 40% unimpaired flow, based on a minimum 7-day running average, from each of the Stanislaus, Tuolumne and Merced Rivers." (SED, at Appx. K, p. 29.) The LSJR base flow objective will be implemented "by requiring a minimum base flow of 1,000 cfs, based on a minimum 7-day running average, at Vernalis at all times." (SED, at Appx. K, p. 29.) This plan is designed to satisfy the requirement of describing the actions necessary for achieving the objectives. (Water Code, § 13242.) However, the plan also describes a series of "[a]daptive adjustments" that can be made to the flow requirements as part of implementing the objectives. (SED, at Appx. K, p. 30.) These adaptive adjustments render the POI unlawful.</p> <p>The POI identifies four adaptive adjustments that can be made after implementation of the 40% unimpaired flow and 1,000 cfs requirements: (a) adjusting the required percent of unimpaired flow to any value between 30 percent and 50 percent, (b) managing the required percent of unimpaired flow as "a total volume of water" that can be released on "an adaptive schedule" in the February through June time period, (c) delaying the release of a portion of the February through June unimpaired flow "until after June to prevent adverse effects to fisheries, including temperature, that would otherwise result from implementation of the February through June flow requirements," and (d) adjusting the required base flow at Vernalis for February through June to any value between 800 and 1,200 cfs. (SED, at Appx. K, p. 30-31.)</p> <p>Two of these adjustments fall within the broad constraints of the objectives themselves. For example, adjustment "a" merely allows for a change in the required unimpaired flow from February through June from 40% (the initial implementation number) to some other percentage within the permitted range of the objective itself, i.e., between 30% and 50%. Similarly, adjustment "d" merely allows for a change in the required base flow from 1,000 cfs (the initial implementation number) to some other flow requirement within the permitted range of the objective, i.e., between 800 cfs and 1,200 cfs. Making these adjustments would not change the objectives because the changes would be within the permissible range of the objective.</p> <p>However, the other two adjustments in the POI allow for actual changes to the objectives. For instance, adjustment "b" allows for the required percent of unimpaired flow from February through June to be "managed as a total volume of water and released on an adaptive schedule during that [time] period where scientific information indicates that a flow pattern different from what would occur by tracking the unimpaired flow percentage would better protect fish and wildlife beneficial uses." (SED, at Appx. K, p. 30.) This adjustment allows for two fundamental changes to the Tributary Flow Objective. First, the objective requires a "percent of unimpaired flow . . . be maintained from February through June." (SED, at Appx. K, p. 18.) This adjustment would allow for a change to the unimpaired flow component of the objective. Pursuant to this adaptive adjustment, a percent of unimpaired flow would no longer be required, and flow could be released on some</p>	<p>Please see response to comment 3239-19 and Master Response 3.2, Surface Water Analyses and Modeling regarding the need to model reasonable carryover assumptions for purposes of the environmental analysis, how those assumptions were developed, and the difference between assumptions for modeling purposes and prescriptive regulatory requirements.</p> <p>Please see response to comment 3239-23 regarding how the State Water Board appropriately considered the factors listed in Water Code section 13241 in developing the LSJR flow objectives and SDWQ objectives.</p> <p>Please see response to comment 3239-89 as to why the program of implementation more than adequately meets Water Code section 13242.</p> <p>Please refer to Master Response 1.1, Water Quality Control Planning Process, concerning due process.</p>

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		<p>unspecified schedule entirely unrelated to unimpaired flow.</p> <p>Second, the objective requires a percent of unimpaired flow to be maintained based upon a minimum 7-day running average. (SED, at Appx. K, p. 18.) On its face, the objective allows for an upward adjustment of the number of days used to compute the running average. However, adaptive adjustment "b" allows for a complete repudiation of the minimum 7-day running average component of the objective. In other words, it allows for managing releases from February through June based on a total volume of water, without adherence to a running average of any kind. This adjustment method constitutes an actual change to the objective insofar as it dispenses with the two components that define it, i.e., THE unimpaired flow percentage and minimum 7-day running average.</p> <p>Similarly, adjustment "c" impermissibly enlarges the time period applicable to the February-June objectives. By their terms, the Tributary Flow Objective and the Vernalis Base Flow Objective are limited to requiring the maintenance of certain flows from February through June. (SED, at Appx. K, p. 18.) However, adjustment "c" allows for the required releases to be delayed "until after June," and, in certain circumstances, "until the following year." (SED, at Appx. K, p. 30-31.) This is a change to the actual objectives, which only require the maintenance of flows from February through June.</p> <p>There are several other components of the POI that are not set forth as adaptive adjustments, but nevertheless allow for--and in some circumstances require--modification of the objectives. For instance, the POI states that the Executive Director "may approve changes to the compliance locations and gage station numbers set forth in Table 3 if information shows that another location and gage station more accurately represent the flows of the LSJR tributary at its confluence with the LSJR." (SED, at Appx. K, p. 29.) This change is not identified as part of the adaptive implementation methods, but it nevertheless allows for a change to the actual objectives which have predefined compliance points. (SED, at Appx. K, p. 18.) Changing the location of the compliance point will change the amount of flow required, as it will adjust the accretions/depletions which occur between the bypass/release point and the compliance point.</p> <p>Another example of an improper modification of the objectives through the POI is the carryover storage requirement. The POI states, "[w]hen implementing the LSJR flow objectives, the State Water Board will include minimum reservoir carryover storage targets or other requirements to help ensure that providing flows to meet the flow objectives will not have adverse temperature or other impacts on fish and wildlife or, if feasible, on other beneficial uses." (SED, at Appx. K, p. 28.) Because the plan states that the Board "will include" carryover storage requirements, and because Water Code section 13247 requires the Board to comply with all aspects of its water quality control plan once approved, the Board will be required to create carryover storage requirements, despite the assertion in the SED that carryover storage is "not intended in a regulatory sense but, rather, to provide an example of reservoir operations . . ." (SED, at Appx. F.1, p. F.1-4, fn. 2.)</p> <p>Requiring minimum carryover storage in a reservoir will, under certain hydrologic conditions, directly conflict with the Tributary Flow Objective requiring the maintenance of 30% to 50% unimpaired flow. For instance, if requiring 30% unimpaired flow (i.e., the minimum allowable unimpaired flow percentage) would result in a drawdown of a reservoir to a level below the carryover storage requirement, then this implementation component (which is required by the plan) would directly conflict with the 30% to 50% unimpaired flow objective. [Footnote 40: For example, the carryover storage requirement at New Melones is</p>	

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		<p>700 TAF. (SED, at Appx. F1, p. F.1-36, Table F.1-2-23a.) Minimum diversions on the Stanislaus River are set at 210 TAF. (id.) Assume New Melones reservoir is at 700 TAF on February 1. If total inflow from February through June is 270 TAF, then instream releases for unimpaired flow would be 81 TAF if the UIF requirement was set at 30%. However, if carryover storage of 700 TAF is to be maintained with an inflow of only 270 TAF, and an outflow of 210 TAF for minimum diversions, then instream releases would need to be reduced from 81 TAF to 60 TAF (270 TAF inflow - 210 TAF diversions = 60 TAF available for instream releases). As 60 TAF only amounts to approximately 22% of the 270 TAF inflow, the carryover storage requirement would compel a violation of the UIF objective.]</p> <p>Neither the objective, nor the program of implementation, specifies which of these requirements would control in the case of a conflict. In this regard, the POI not only allows for changes to the objectives without a properly noticed hearing, it actually compels that the objectives be changed in certain circumstances.</p> <p>The POI is not saved by the fact that it only calls for changes to the objectives in order to avoid adverse impacts to fish and wildlife beneficial uses. The three components of a water quality control plan (the beneficial uses, the objectives, and the program of implementation) have different purposes. The purpose of the objectives is to provide "reasonable protection of the beneficial uses of water." (Water Code, § 13050[h].) In turn, the purpose of the program of implementation is to "achieve the objectives." (Water Code, §§ 13242,13050[j][3].) Through this two-step process designed by the legislature, the beneficial uses are protected. The current proposal subverts this statutorily-required two-step process, and improperly uses the program of implementation as a means of directly protecting the beneficial uses, irrespective of the objectives.</p> <p>This procedure is unlawful for several reasons. First, it violates Water Code section 13242, which states that the POI must include a description of the actions necessary to achieve the objectives, not a description of the actions necessary to directly protect the beneficial uses. Second, Water Code section 13241 requires that water quality objectives be established for the "reasonable protection" of beneficial uses, after balancing and considering all beneficial uses of water. (Water Code, § 13241.) There is no balancing required when establishing a program of implementation, mainly because the balancing is achieved in the prior step. (Water Code, § 13242.) Thus, by constructing a program of implementation with adaptive adjustments that can be used to change the objectives (or create new objectives), the critical step of weighing and balancing is skipped. The proposed POI reflects this very point. It focuses solely on adaptive adjustments (i.e., changes to the flow objectives) that are needed to protect fish and wildlife beneficial uses.</p> <p>There is no corresponding requirement that impacts to other beneficial uses be considered before making the change: "[t]he adjustments in (a), (b), and (c) may . . . be made independently on each of [the tributaries], so long as the flows are coordinated to achieve beneficial results in the LSJR related to the protection of fish and wildlife beneficial uses." (SED, at Appx. K, p. 31.) In other words, the weighing and balancing of other beneficial uses of water is not required before changing the objectives via the adaptive adjustments allowed by the POI. By setting up a procedure where the POI (rather than an objective) is used as a direct means of protecting beneficial uses, Board staff has effectively skipped the weighing and balancing that must be conducted when determining what level of protection for fish and wildlife beneficial uses is "reasonable." (Water Code, § 13241.)</p> <p>This error is compounded by the granting of authority to the Executive Director to modify</p>	

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		<p>the objectives as part of the program of implementation. Specifically, adjustments "b" and "c" allow the Executive Director to approve changes to the objectives on an annual basis if the change is "recommended by one or more members of the STM Working Group." (SED, at Appx. K, p. 30-31.) However, the State Water Board is the only entity that has been granted authority by the legislature to approve revisions to the water quality control plan. (Water Code, § 13245.)</p> <p>As such, the State Water Board is the final authority on whether "reasonable protection" has been provided for beneficial uses. (Water Code, § 13240.) The legislature has not authorized the Executive Director, nor the STM Working Group, to revise objectives, nor to weigh and balance other beneficial uses in order to determine whether the protection afforded to fish and wildlife beneficial uses is reasonable. Even if the Water Code granted the Board the authority to preemptively conduct the necessary balancing of interests as part of a broad grant of authority to the Executive Director to change the objectives (which it does not), the unlimited number of changes permissible under the adaptive adjustments would render such a task impossible.</p> <p>In sum, the program of implementation is unlawful because it does not contain a description of the actions necessary to achieve the objectives, and instead allows for changes to the objectives without a properly noticed hearing, and without the statutorily required weighing and balancing of all demands being made on the waters involved. (Water Code, §§ 13000, 13241.)</p>	
3239	91	<p>The program of implementation fails to describe the actions necessary to achieve the Narrative Objective.</p> <p>The program of implementation includes a plan of action for purportedly achieving the February through June unimpaired flow objectives (SED, at Appx. K, p. 28-31), and the October pulse flow objective (SED, at Appx. K, p. 34). However, there is no plan of action for achieving the newly created Narrative Objective. Notably, the POI states that the narrative objective for the protection of salmon, referred to herein as the Doubling Objective (SED, at Appx. K, p. 17), is expected to be achieved through the "implementation of the numeric flow-dependent objectives and other non-flow measures." (SED, at Appx. K, p. 53.) The POI does not contain a similar plan of action for the new Narrative Objective. Water Code section 13242 requires a description of the actions necessary to achieve the objectives, a time schedule for the actions, and a description of the surveillance to determine compliance with the objectives. The failure to include any of these components in the POI for the Narrative Objective is a violation of Water Code section 13242.</p> <p>Even if the unstated intention of Board staff is that the Narrative Objective will be implemented through the implementation of the Tributary Flow Objectives, such a plan is inadequate. The Narrative Objective enlarges the scope of the protected area beyond the compliance points on the tributaries, stating that inflow conditions should be maintained in the San Joaquin River watershed "to the Delta at Vernalis sufficient to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta." (SED, at Appx. K, p. 18.)</p> <p>Although the POI states that the State Water Board "will exercise its water right and water quality authority to help ensure that the flows required to meet the LSJR flow objectives are used for their intended purposes and are not diverted for other purposes" (SED, at Appx. K, p. 28), the POI does not include the required description of surveillance measures that will</p>	<p>As the SED explains, the LSJR flow objective will be implemented through water rights and water quality actions, which will include enforceable requirements to achieve the flow objectives.</p> <p>The plan amendments do not propose any changes to the salmon doubling objective. Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for a discussion of the salmon doubling objective and the narrative objective.</p> <p>Please see response to comment 3239-89 as to why the program of implementation more than adequately meets Water Code section 13242.</p> <p>Please see Master Response 1.1, General Comments, for a response to comments regarding program-level documents.</p> <p>Please see Master Response 1.2, Water Quality Control Planning Process, for responses to comments regarding implementation through water rights proceedings.</p>

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		<p>be undertaken to ensure that the flows which reach the compliance points on the tributaries are not diverted for other purposes as soon as they hit the San Joaquin River. Such a description is required under Water Code section 13242[c].</p>	
3239	92	<p>The State Water Board overstates its authority to implement the objectives.</p> <p>The State Water Board has overstated its implementation authority in several key respects which render the POI unlawful. The POI identifies two primary implementation methods. The first method is a water right proceeding where the Board will assign responsibility for contributing flows to water right permit and license holders, taking into consideration "the requirements of the Public Trust Doctrine and the California Constitution, article X, section 2." (SED, at Appx. K, p. 26.) The second method is assigning responsibility through water quality certifications under Clean Water Act section 401. For the various reasons stated below, the Board has overstated its authority to implement the objectives through these methods.</p> <p>The Water Code does not grant the State Water Board continuing jurisdiction to amend water right licenses.</p> <p>Water Code section 1394 allows the State Water Board to amend, revise or supplement water right permit terms and conditions after a permit has been issued. However, the Water Code does not grant a similar authority to change the terms and conditions of a water right license. Specifically, the Water Code states, "in no case shall [this continuing] jurisdiction be exercised after the issuance of the license." (Water Code, § 1394[b]; Water Code, § 1600, et seq.)</p> <p>Most of the water diverted in the geographic area of the proposed project is diverted pursuant to licensed or pre-1914 water rights. Accordingly, the State Water Board will only be able to make limited use of its continuing jurisdiction under Water Code section 1394 when implementing the flow objectives, and will not have control over a sufficient quantity of water to compel compliance with the unimpaired flow requirements.</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding the program of implementation, including discussions on plan implementation through water rights proceedings, water rights priorities, and water quality certification and the Federal Energy Regulatory Commission (FERC) process.</p>
3239	93	<p>The Board's authority to prevent waste and unreasonable use of water does not permit the Board to compel the use of water to meet an objective that protects a particular beneficial use.</p> <p>The POI states that the Board will consider the requirements of article X, section 2 of the California Constitution during any water right proceeding initiated to assign responsibility for meeting the objectives. (SED, at Appx. K, p. 26.) Article X, section 2 of the California Constitution prohibits the "waste or unreasonable use or unreasonable method of use of water." (Cal. Const., art. X, § 2.) Pursuant to this Constitutional provision, the State Water Board has the authority to prevent waste or unreasonable use of water. (Water Code, § 275; California Farm Bureau Federation v. State Water Resources Control Bd. (2011) 51 Cal.4th 421, 429.)</p> <p>However, the State Water Board's authority under the doctrine of waste and unreasonable use is limited, and the Board should not assume that this authority will permit it to implement the proposed water quality objectives. The determination of whether a use is reasonable is a question of fact and must be made according to the circumstances of each particular case. (Joslin v. Marin Mun. Water Dist. (1967) 67 Cal.2d 132, 139.) Therefore, before curtailing water use pursuant to a finding of waste and/or unreasonable use, the</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board Authorities related to the water quality control planning process, including Article X, Section 2 of the California Constitution.</p>

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		<p>State Water Board will need to make a factual determination based on the specifics of each use it seeks to curtail. The State Water Board cannot make a broad determination that a type of use is unreasonable without a case-specific analysis. (see Imperial Irrigation Dist. v. State Water Resources Control Bd. (1990) 225 Cal.App.3d 548, 554 ("Imperial"); Light v. State Water Resources Control Board (2014) 226 Cal.App.4th 1463, 1482-1487.)</p> <p>In addition, the power to curtail a specific use of water because it is being wasted or unreasonably used should not be equated with an authority to reallocate that water to a different beneficial use; the two powers are fundamentally distinct. For example, the State Water Board may determine a specific water use is unreasonable under certain circumstances. This determination would allow the Board to prohibit a water user from using water in the manner determined unreasonable. (Imperial, supra, 225 Cal.App.3d at 554-55.)</p> <p>That determination would not, however, prohibit the water user from using the water in a different manner that is reasonable and beneficial under the circumstances. In other words, a State Water Board determination that a use is unreasonable only curtails that particular use under the set of circumstances analyzed; it does not extinguish the underlying right and does not provide the State Water Board the authority to otherwise control the water that was the subject of the unreasonable use finding. The unreasonable use doctrine only empowers the State Water Board to ensure water is used reasonably under a particular right of use; it does not empower the State Water Board to permanently curtail a right or compel that water be put to a specific beneficial use. For this reason, the doctrine of unreasonable use will be of limited value to the State Water Board in implementing water quality objectives.</p>	
3239	94	<p>The State Water Board has limited authority to implement water quality objectives using the Public Trust doctrine.</p> <p>The State "owns all of its navigable waterways and the lands lying beneath them as trustee of a public trust for the benefit of the people." (Nat'l Audubon Society v. Superior Court (1983) 33 Cal.3d 419, 433-434.) This is known as the public trust doctrine and it imposes "an affirmative duty" on the State "to take the public trust into account in the planning and allocation of water resources, to protect public trust uses whenever feasible." (Id. At 446.) In accordance with this duty, the State Water Board possesses the authority "to exercise supervision over appropriators in order to protect fish and wildlife." (United States v. State Water Resources Control Bd., supra, 182 Cal.App.3d at 150.)</p> <p>To the extent the Board intends to rely on its continuing authority to amend the terms and conditions of a permit or license in order to protect public trust uses, the Board must provide notice and a hearing to the affected parties, and determine that such amendments are "necessary to preserve or restore the uses protected by the public trust." (Cal. Code Regs., tit. 23, § 780[a].) The "necessary" threshold is more stringent than the standard under which the State Water Board establishes water quality objectives; the latter standard requires the State Water Board to "establish such water quality objectives . . . as in its judgment will ensure the reasonable protection" of the identified beneficial use. (Water Code, § 13241.)</p> <p>Therefore, even if the analysis in the SED was sufficient to support the establishment of the objectives (which it is not), the State Water Board could not rely on that same analysis to implement the objectives under its public trust authority. Instead, the State Water Board</p>	<p>Please see master Response 1.2, Water Quality Control Planning Process, regarding State Water Board Authorities within the context of the water quality control planning process, including discussion on Bay-Delta plan implementation and water rights, and State Water Board Authorities related to the water quality control planning process, including discussion on public trust resources.</p> <p>The commenter's figure of 1,103 salmon per year misrepresents information presented in the SED regarding the anticipated benefits of the plan amendments. The commenter is referring to results from the SalSim model. Please Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, for a SalSim use advisory. Please also see Master Response 3.1, Fish Protection, for an explanation of why the State Water Board did not rely upon SalSim due to limitations in the model.</p> <p>The overwhelming body of evidence, as explained in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Standards; Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30; and Master Response 3.1 demonstrates that increased flow is the foundation for fish survival. For further discussion on the scientific basis for the LSJR flow objectives and benefits to fish, please see master Response 1.1, General Comments, and Master Response 3.1.</p>

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		<p>would need to notice and perform separate public trust proceedings to determine whether the objectives were necessary to protect the public trust values.</p> <p>The scope of the Board’s continuing authority over appropriations under the public trust doctrine is limited to preventing appropriations that are "harmful to the interests protected by the public trust." (United States v. State Water Resources Control Bd., supra, 182 Cal.App.3d at 151.) Thus, the State Water Board may not employ its continuing authority over appropriations in order to increase instream flows with the aim of merely improving fish and wildlife beneficial uses. Rather, the State Water Board must show that fish and wildlife are specifically harmed by the particular diversion targeted. This greatly limits the State Water Board’s authority to implement the objectives pursuant to its public trust authority.</p> <p>Even if the State Water Board could demonstrate that certain flows were necessary to protect the public trust resources and the diversions by certain users specifically harmed public trust resources, the State Water Board must further find that the curtailment of the targeted water rights is in the "public interest." (United States v. State Water Resources Control Bd., supra, 182 Cal.App.3d at 151; Water Code, § 1253; Cal. Code Regs., tit. 23, § 780[a].) "As a matter of practical necessity, the state may have to approve appropriations [of water] despite foreseeable harm to public trust uses." (Nat’l Audubon Society v. Superior Court, supra, 33 Cal.3d at 446.)</p> <p>Therefore, "in determining whether it is ‘feasible’ to protect public trust values like fish and wildlife in a particular instance," as is the Board’s charge, "the Board must determine whether protection of those values, or what level of protection, is ‘consistent with the public interest.’" (State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 778, quoting Nat’l Audubon Society v. Superior Court, supra, 33 Cal.3d at 446-447.) A great majority of the water supply that will be affected by the proposed objectives is used for municipal and agricultural uses, which a vast segment of the populace depends upon for their livelihood and health and safety.</p> <p>On the other hand, the quantifiable benefit of the objectives to fish and wildlife is extremely limited. Specifically, the analysis in the SED projects that, on average, the implementation of the objectives will result in an increase of fall-run Chinook salmon production of approximately 1,103 fish. (SED, at Appx. K, p. 19-84.) The established benefit of existing uses, combined with the minimal benefit expected for fish and wildlife, compels a finding that the proposed objectives are not "consistent with the public interest." (State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 778.)</p> <p>Thus, the public trust doctrine is not a tool the State Water Board can use to implement the objectives. In order to implement flows through the State Water Board’s public trust authority, the State Water Board would need to notice public trust proceedings. The Board would need to weigh and balance the information coming out of those proceedings to determine: (a) the objectives are necessary to protect fish and wildlife; (b) the diversions of certain water users are causing harm to the native fishery; and (c) the objectives promote the public interest. Because that evidence does not exist, the State Water Board’s reliance on the public trust doctrine is misplaced.</p>	
3239	95	<p>The Program of Implementation ignores the State Water Board’s limited jurisdiction over pre-1914 and riparian rights.</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board Authorities related to the water quality control planning process and water rights priorities.</p>

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		<p>The State Water Board "was created as the State Water Commission in 1913 to administer the appropriation of water for beneficial purposes." (Light v. State Water Resources Control Bd., supra, 226 Cal.App.4th at 1481.) Under California's system of water rights, "[r]iparian users and pre-1914 appropriators need neither a permit [from the State Water Board] nor other governmental authorization to exercise their water rights." (Id. At 1478.) Moreover, the Board "does not have jurisdiction to regulate riparian and pre-1914 appropriative rights." (Young v. State Water Resources Control Bd., 219 Cal.App.4th 397, 404.) The Board has long recognized this limitation in its regulatory authority. (State Water Board Resolution 96-028 ["The SWRCB has limited jurisdiction over disputes regarding riparian and pre-1914 water rights. The relative priority and authorized diversion quantities of riparian and pre-1914 water rights are under the jurisdiction of the courts"].)</p> <p>Thus, to the extent the State Water Board intends to utilize water right proceedings to implement the LSJR flow objectives and require contributions from water right holders, it will have no authority to compel such contributions from riparian and pre-1914 appropriative right holders. A significant portion of the water rights held on the Stanislaus, Tuolumne and Merced Rivers are pre- 1914 and riparian rights. As such, there are not sufficient flows under the Board's control for it to implement the unimpaired flow requirements via a water right proceeding.</p>	
3239	96	<p>The State Water Board does not have the authority to control reservoir operations by requiring carryover storage requirements.</p> <p>The POI indicates that the State Water Board "will include minimum reservoir carryover storage targets or other requirements to help ensure that providing flows to meet the flow objectives will not have adverse temperature or other impacts on fish and wildlife or, if feasible, on other beneficial uses." (SED, at Appx. K, p. 28.) For several reasons, the Board lacks the authority to require that reservoirs be operated with minimum carryover storage requirements</p> <p>Implementing minimum carryover storage requirements could modify the unimpaired flow objectives without a noticed hearing and without balancing the impact of the changed objective on other beneficial uses of water.</p> <p>Minimum carryover storage requirements could conflict with the unimpaired flow objectives under certain hydrologic conditions, assuming minimum diversions are maintained as modeled in the SED. To the extent that the carryover storage requirements would be controlling over the unimpaired flow objectives, they would effectively change the objective. A water quality control plan, including the objectives contained therein, cannot be changed without a noticed hearing. (Water Code, § 13245.) In addition, objectives must be established considering, among other things, "[p]ast, present, and probable beneficial uses of water." (Water Code, § 13241[a].) Permitting the unimpaired flow objectives to be changed through an implementation measure, such as the minimum carryover storage requirement, subverts this statutorily mandated balancing of beneficial uses. Accordingly, the Board does not have the authority to establish minimum carryover storage requirements through a program of implementation.</p>	<p>As identified in Appendix K, Revised Water Quality Control Plan, the State Water Board will include minimum reservoir carryover storage targets or other requirements to help ensure that providing flows to meet the LSJR flow objectives will not have adverse temperature or other impacts on fish and wildlife or, if feasible, on other beneficial uses. Specific carryover or other requirements will be established when implementing the plan amendments through water right and water quality proceedings. For further information on the program of implementation, including discussions on plan implementation through water rights proceedings, please see Master Response 1.2, Water Quality Control Planning Process.</p> <p>Please also see response 3239-90 regarding the need to model reasonable carryover assumptions for purposes of the environmental analysis, how those assumptions were developed, and the difference between assumptions for modeling purposes and prescriptive regulatory requirements.</p>
3239	97	<p>The Board cannot implement a minimum carryover storage requirement for the purpose of protecting a beneficial use.</p> <p>The purpose of an objective is to provide reasonable protection to beneficial uses. (Water</p>	<p>The carryover storage requirement is appropriately included in the Program of Implementation as an action necessary for achieving the LSJR flow objectives. As discussed in Master Response 1.2, Water Quality Control Planning Process, the Porter–Cologne Water Quality Control Act defines a water quality control plan as “a designation or establishment for the waters within a specified area of all of the following: [¶] (1) Beneficial</p>

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		<p>Code, § 13241.) The purpose of a POI is to describe the actions "necessary to achieve the objectives." (Water Code, § 13242.) This is the two-step process mandated by the legislature for protecting beneficial uses. As explained below, carryover storage requirements will not achieve any of the objectives, and thus the Board has no authority to implement them.</p> <p>The stated purpose of requiring carryover storage is to "help ensure that providing flows to meet the flow objectives will not have adverse temperature or other impacts on fish and wildlife, or, if feasible, on other beneficial uses." (SED, at Appx. K, p. 28.) Because the purpose is to directly protect beneficial uses rather than achieve objectives, establishing carryover storage requirements would subvert the two-step process described above for protecting beneficial uses. In addition, establishing a carryover storage requirement through the POI, rather than through an objective, subverts the required balancing that must be done when determining what level of protection for fish and wildlife is reasonable. (Water Code, § 13241.)</p> <p>This issue is compounded by the fact that the POI simply states that the Board "will include minimum reservoir carryover storage targets," but does not actually set those targets. (SED, at Appx. K, p. 28.) The amount of carryover storage that is required each year will have a direct impact on other beneficial uses, such as agriculture. Accordingly, the Board is required by law to consider whether the specific carryover storage targets provide a "reasonable" level of protection for fish and wildlife. (Water Code, § 13241.) The balancing must be performed now and incorporated into the water quality control plan as an objective; it cannot be deferred to a water right proceeding where no such balancing is required.</p> <p>Furthermore, to the extent that the purpose of requiring carryover storage is to prevent adverse temperature impacts, the requirement would be improper. The POI must describe "actions which are necessary to achieve the objectives." (Water Code, § 13242.) As there is no temperature objective in need of implementation, the Board has no authority to implement carryover storage requirements.</p> <p>Even though carryover storage requirements are not identified as objectives in the WQCP, the POI states that the requirements are intended to protect beneficial uses. Protecting beneficial uses is the purpose of an objective, not the POI. (Water Code, § 13241.) Nevertheless, for the limited purpose of providing the following comments, the carryover storage requirement is examined as if it were a stand-alone objective. When establishing an objective for the "reasonable" protection of fish and wildlife beneficial uses, the Board must consider, among other things, all other past, present and probable beneficial uses. (Water Code, § 13241.) The SED models the project with certain carryover storage requirements in place. (SED, at Appx. F1, p. F.1-36 to F.1-38.)</p> <p>However, there is no comparison between the project with carryover storage requirements and without carryover storage requirements. Without such a comparison, the Board cannot weigh and balance the impact of requiring carryover storage on other beneficial uses. Thus, to the extent the carryover storage requirement can be treated as an objective, the requisite balancing is absent.</p>	<p>uses to be protected. [¶] (2) Water quality objectives. [¶] (3) A program of implementation needed for achieving water quality objectives." (§ 13050, subd. (j).)" (City of Arcadia v. State Water Res. Control Bd., supra, 191 Cal.App.4th at p. 177). The Porter-Cologne Water Quality Control Act requires a program of implementation to include a description of the nature of actions that are necessary to achieve the objectives, including recommendations for appropriate action by any entity. Appendix K, Revised Water Quality Control Plan, Chapter IV, Program of Implementation, Section A.3, 3. River Flows: Lower San Joaquin River at Airport Way Bridge, Vernalis, states "When implementing the LSJR flow objectives, the State Water Board will include minimum reservoir carryover storage targets or other requirements to help ensure that providing flows to meet the flow objectives will not have adverse temperature or other impacts on fish and wildlife or, if feasible, on other beneficial uses."</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding reservoir operations, reoperation, and carryover storage for a discussion of how the carryover storage assumptions were developed for the purposes of modeling. A no carryover storage example is provided in Master Response 3.2. That example illustrates why the requirement for carryover storage targets or other requirements in the program of implementation is necessary in order to meet the narrative objective.</p>
3239	98	<p>The Board does not have the authority to control reservoir operations.</p> <p>Apart from the jurisdiction issue, the State Water Board authority to control reservoir operations is limited to its reserved jurisdiction over water storage licenses held by the</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, for discussion on the scope of the water quality control planning process and Bay-Delta proceedings, including State Water Board protection of beneficial uses in the Bay-Delta and tributary watersheds through independent proceedings; State Water Board Authorities regarding the water quality control planning process, including discussions of public trust</p>

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		<p>Irrigation Districts. (Cal. Code Regs., tit. 23, § 780.) Two reservations of jurisdiction are relevant to this discussion. The first authorizes the State Water Board to exercise continuing jurisdiction over the license to protect public trust uses or to prevent waste or unreasonable use. (Cal. Code Regs., tit. 23, § 780(a).) It is unlikely the State Water Board will be able to justify the curtailment of water provided to irrigators because the water is beneficially used to grow crops. Furthermore, it is unlikely the fluctuation of reservoir levels will impede upon any public trust uses because the reservoirs already fluctuate and the public interest balancing required by the public trust doctrine will not likely inure to the State Water Board's argument in its application.</p> <p>The second license condition under which the State Water Board may assert its continuing jurisdiction authorizes the State Water Board to modify "the quantity of water diverted" under the license where "such modification is necessary to meet water quality control objectives." (Cal. Code Regs., tit. 23, § 780(b).) This condition, unlike the one discussed above, does not authorize the State Water Board to insert new conditions into the license; the State Water Board may only modify the amount diverted under the license.</p> <p>Because the Tributary Flow Objective requires the Irrigation Districts to bypass water for fish and wildlife, the limited ability to curtail diversion to storage will not aid in the meeting of the Tributary Flow Objective. Furthermore, even if this curtailment could be considered "necessary" to accomplish the objectives, it would not have an effect on the Irrigation Districts' ability to fully control reservoir operations. Thus, this license condition does not empower the State Water Board to control reservoir operations.</p> <p>Therefore, the State Water Board may only control reservoir operations through modifying the conditions existing in some of the Irrigation Districts' licenses if it can justify the modification through its public trust authority. Even if such a modification could be justified, the action is not authorized under the license condition unless the State Water Board shows "that such specific requirements are physically and financially feasible and are appropriate to the particular situation." (See Cal. Code Regs., tit. 23, § 780(a).) Curtailing the ability to deliver water to irrigators is not financially feasible for the thousands of members of the Irrigation Districts who will lose their livelihood if they are unable to receive reservoir water.</p> <p>Furthermore, a condition requiring the Irrigation Districts to curtail their deliveries to their irrigators simply to reduce fluctuation of reservoir levels is not appropriate, as it would deprive thousands of irrigators of their livelihood and impact state and local economies. Therefore, the State Water Board does not have the authority to control reservoir operations.</p>	<p>resources, Article 2, Section X of the California Constitution, and water quality certification and the Federal Energy Regulatory Commission (FERC) process; and State Water Board consideration of beneficial uses in the context of the water quality control planning process.</p> <p>This comment does not provide a basis for modifying the plan amendments or raise significant environmental issues. As described in Executive Summary, Section ES 8.1, LSJR Alternatives, Chapter 3, Alternatives Description, and Appendix K, Revised Water Quality Control Plan, the plan amendments would require LSJR flow objectives for February through June be implemented by requiring a certain percentage of unimpaired flow from the Stanislaus, Tuolumne, and Merced Rivers. A portion of the February through June unimpaired flow may be delayed until after June to prevent adverse effects to fisheries, including temperature, which would otherwise result. The State Water Board may impose minimum reservoir storage targets or other requirements to help ensure that providing flows to meet the flow objectives will not have adverse temperature impacts on fish and wildlife.</p> <p>As discussed in response to comment 3239-100, this comment raises hypothetical issues concerning the implementation of plan amendments that will be addressed in a future, separate proceeding. A future potential requirement regarding as-yet-undetermined reservoir storage targets is not sufficient to demonstrate an actual impairment of a right to use water that precludes implementation of the plan amendments.</p>
3239	99	<p>The Board cannot impose a minimum reservoir storage requirement through a Section 401 certification because such a requirement does not ensure compliance with a water quality objective adopted by the Board.</p> <p>Section 401 of the CWA states, "[a]ny applicant for a Federal license or permit to conduct any activity . . . which may result in any discharge into the navigable waters shall provide the licensing or permitting agency a certification from the State in which the discharge originates." (33 USC 1341[a][1].) This certification is often referred to as a Section 401 certification and, in California, it is issued by the SWRCB. The United States Supreme Court has held that dams being operated to produce hydroelectricity require a federal license from FERC, and raise the potential for a discharge into navigable waters, thereby requiring state certification under CWA section 401. (S.D. Warren Co. v. Me. Bd. of Env'tl. Prot., (2006)</p>	Please see response to comment 3239-98.

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		<p>547 U.S. 370.)</p> <p>A state’s authority to impose conditions on a water user through a CWA 401 certification is "not unbounded" (Pud No. 1 v. Wash. Dep’t of Ecology (1994) 511 U.S. 700, 712.) The state can only impose conditions that "ensure that the project complies with ‘any applicable effluent limitations and other limitations, under [CWA § 301, 302]’ or certain other provisions of the Act, ‘and with any other appropriate requirement of State law." (PUD No. 1, supra, 511 U.S. at 712, citing 33 U.S.C. § 1341[d]). "[S]tate water quality standards adopted pursuant to § 303 [of the CWA] are among the ‘other limitations’ with which a State may ensure compliance through the § 401 certification process." (Pud No. 1, supra, 511 U.S. at 712-713.) Thus, as relevant here, the SWRCB may only impose conditions through a CWA 401 certification if the conditions ensure compliance with water quality standards adopted pursuant to Section 303 of the CWA, or other requirements of State law.</p> <p>Under the CWA, water quality standards "consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses." (40 C.F.R. § 131.3[i]; see 40 C.F.R. § 131.6.) The State Water Board treats the establishment of beneficial uses and water quality objectives as satisfying its obligation to adopt water quality standards (i.e., designated uses and water quality criteria) under the CWA. The POI, however, is not a component of a water quality standard (40 C.F.R. §§ 131.3[i], 131.6), and thus cannot be the basis for imposing a condition through a 401 certification. (33 U.S.C. § 1341[d]; Pud No. 1 v. Wash. Dep’t of Ecology, supra, 511 U.S. at 712-713.)</p> <p>Since the carryover storage requirement is part of the POI, and not an objective itself, the Board cannot use its 401 authority under the CWA to assure compliance with water quality standards as a basis for imposing carryover storage requirements. Similarly, because the water quality control plan does not contain any temperature objectives, the Board cannot use its authority to assure compliance with water quality standards as a basis for imposing carryover storage requirements.</p> <p>Furthermore, the Board has taken the position that CWA Section 303(c) is not intended to regulate pollution caused by reduction of flow. (SJTA Attachment 12.) Thus, to the extent the carryover storage requirements might be interpreted as a component of regulating flow, it is not a water quality standard under CWA § 303(c) with which the State can ensure compliance through a 401 certification. Likewise, since the carryover storage targets are not objectives of the Water Quality Control Plan, they will not be requirements of state law with which the State can ensure compliance through the 401 certification.</p>	
3239	100	<p>The requirement of carryover storage is a taking that requires just compensation.</p> <p>The final clause of the Fifth Amendment to the United States Constitution provides that "private property" shall not be "taken for public use, without just compensation." (U.S. Const., 5th Amend.) This provision is applicable to the states through the Fourteenth Amendment. (Chicago, B. & Q. Railroad Co. v. Chicago (1897) 166 U.S. 266.) The law distinguishes between two types of takings: (1) a physical taking of an interest in property by the government, and (2) and a regulatory taking that affects an owner’s use of his or her property. (see generally Tahoe-Sierra Pres. Council v. Tahoe-Reg’l Planning Agency (2002) 535 U.S. 302, 322-323.)</p> <p>With respect to physical takings, the Supreme Court has held that "a permanent physical occupation authorized by government is a taking [per se] without regard to the public</p>	<p>This comment does not provide a basis for modifying the plan amendments or raise significant environmental issues. As described in Executive Summary, Section ES 8.1, LSJR Alternatives, Chapter 3, Alternatives Description, and Appendix K, Revised Water Quality Control Plan, the plan amendments would require LSJR flow objectives for February through June be implemented by requiring a certain percentage of unimpaired flow from the Stanislaus, Tuolumne, and Merced Rivers. A portion of the February through June unimpaired flow may be delayed until after June to prevent adverse effects to fisheries, including temperature, which would otherwise result. The State Water Board may impose minimum reservoir storage targets or other requirements to help ensure that providing flows to meet the flow objectives will not have adverse temperature impacts on fish and wildlife.</p> <p>The commenter asserts that the State Water Board’s action would require compensation under the Takings Clause of the United States Constitution, because it will result in a physical invasion of property (U.S. Const. Amend. V; Lucas v. South Carolina Coastal Council (1992) 505 U.S. 1003, 1015). The United States Supreme</p>

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		<p>interests that it may serve." (Loretto v. Teleprompter Manhattan Catv Corp. (1982) 458 U.S. 419, 426 [holding that a state law which permitted a cable television provider to attach cables to apartment buildings constituted a regulatory taking which required just compensation].) In other words, "when the physical intrusion reaches the extreme form of a permanent physical occupation, a taking has occurred." (Loretto, supra, 45 U.S. at 426.)</p> <p>As for the second type of taking, i.e., a regulatory taking which affects the use of an owner's property, courts will make an "ad hoc, factual inquiry" to determine if a taking has occurred. (Penn Cent. Transp. Co. v. New York City (1978) 438 U.S. 104, 124.) All relevant facts are considered and balanced to determine if a taking has occurred, but there are several factors of particular importance, including (1) the economic impact of the regulation on the claimant, (2) the extent to which the regulation interferes with investment-backed expectations, (3) the character of the governmental action. (Penn Cent., supra, 438 U.S. at 124; Tahoe-Sierra, supra, 535 U.S. at 322.)</p> <p>The proposal to impose carryover storage requirements constitutes a physical taking requiring just compensation. Moreover, even if a court were to determine that a carryover storage requirement did not constitute a physical taking, a balancing of the relevant factors would lead to the conclusion that a regulatory taking affecting use of property has occurred.</p>	<p>Court has acknowledged that the physical taking test must be reserved for the "relative rare" cases in which the physical occupation can be "easily identified," such as "[w]hen the government physically takes possession of an interest in property for some public purpose" or otherwise directly appropriates or occupies private property for its own use or use by a third party (Tahoe-Sierra Preservation Council, Inc. v. Tahoe Regional Planning Agency (2002) 535 U.S. 302, 322, 324). The requirement that there be an actual physical occupation, invasion, or appropriation of property by the government is the defining characteristic of a physical taking. Use restrictions, including regulatory requirements that have the effect of limiting the amount of water that can be diverted or used, do not constitute a physical invasion (Allegretti & Co. v. County of Imperial (2006) 138 Cal.App.4th 1261, 1273).</p> <p>The comment raises hypothetical issues concerning the implementation of plan amendments that will be addressed in a future, separate proceeding. A future potential requirement regarding as-yet-undetermined reservoir storage targets is not sufficient to demonstrate an actual impairment of a right to use water that precludes implementation of the plan amendments. Please see Master Response 1.2, Water Quality Control Planning Process, for discussion on the scope of the water quality control planning process and Bay-Delta proceedings, including State Water Board protection of beneficial uses in the Bay-Delta and tributary watersheds through independent proceedings.</p> <p>Please also see Master Response 1.2, regarding State Water Board consideration of beneficial uses in the context of the water quality control planning process.</p>
3239	101	<p>A taking of reservoir storage space</p> <p>The California Supreme Court has held that the ability to store water in a reservoir is a property right, and that the right must be valued in a condemnation proceeding. (Marin Water & Power Co. v. Railroad Com. of California (1916) 171 Cal. 706, 715 [to the extent that the railroad commission held that the ability of "water storage" derived from the features of the land "was not a property right, it was in error"].) Because the ability to store water is a property right, the government cannot take that property for public use without providing just compensation. (U.S. Const., 5th Amend.)</p> <p>The United States Supreme Court has a long history of finding that the permanent flooding of private property by the government is a physical occupation of that property and thus a taking. For instance, in the case of Pumpelly v Green Bay Co. (1872) 13 Wall. 166, a dam was constructed across a river causing flooding on the plaintiff's land. The Supreme Court stated, "where real estate is actually invaded by superinduced addition of water, earth, sand, or other material, or by having any artificial structure placed on it, so as to effectually destroy or impair its usefulness, it is a taking" (Pumpelly v. Green Bay Co. 13 Wall. at 181.).</p> <p>In the more recent case of Loretto, the Supreme Court observed that in every one of its prior flooding cases "involving a permanent physical occupation . . . [a] taking has always been found" (Loretto v. Teleprompter Manhattan Catv Corp. (1982) 458 U.S. 419, 428, citing United States v. Lynah (1903) 188 U.S. 445, 468-470; Bedford v. United States (1904) 192 U.S. 217, 225; United States v. Cress (1917) 243 U.S. 316, 327-328; Sanguinetti v. United States (1924) 264 U.S. 146, 149; United States v. Kansas City Life Ins. Co. (1950) 339 U.S. 799, 809-810.) By contrast, where the flooding does not result in an actual entry onto an owner's land, but merely impedes access to the land temporarily, no taking will be found to occur. (Northern Transportation Co. v. Chicago (1879) 99 U.S. 635.) The distinction has been stated as follows: in order to be a taking, the flooding must "constitute an actual, permanent invasion of the land, amounting to an appropriation of, and not merely an injury</p>	<p>Please see response to comment 3239-100.</p>

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		<p>to, the property." (Sanguinetti v. United States (1924) 264 U.S. 146, 149.)</p> <p>The carryover storage requirements proposed in the WQCP would require SJTA members to hold a certain amount of water in their reservoirs at all times, thereby occupying physical space in the reservoirs. (SED, at Appx. F.1, p. F.1-36 - F.1-37.) Additionally, the Board will have effectively taken possession of the use of that water (i.e., the water right) because the districts will no longer be able to put it to beneficial use. By effectively taking possession of the water right, and by using that water right to occupy physical space in the districts' reservoirs, the Board will have committed a physical taking per se of the reservoir space requiring just compensation.</p> <p>Moreover, even if a court were to find that a carryover storage requirement did not constitute a physical taking, a court would likely find a taking under the multifactor balancing test used for regulations that effect an owner's use of his or her property. In conducting the multifactor balancing test, courts examine "the economic impact of the regulation on the claimant and particularly, the extent to which the regulation has interfered with distinct investment-backed expectations," as well as "the character of the governmental action." (Penn Cent., supra, 438 U.S. at 124; Tahoe-Sierra, supra, 535 U.S. at 322.)</p> <p>The carryover storage requirement will cause substantial interference with distinct investment-backed expectations. Specifically, the regulation would interfere with the districts' expectations as to the amount of water they can capture in their reservoir and put to beneficial use. Each reservoir has a capacity limit, and that limit was chosen, in part, to accommodate the owners' needs and water rights; it was not chosen to accommodate a carryover storage requirement by the SWRCB. Adjusting the capacity limit of a reservoir in order maintain initial expectations regarding available storage would come at considerable financial expense. In short, there is a substantial investment-backed expectation that parties who own reservoirs will be able to use and operate those reservoirs within their dead pool and flood-control capacity limits, rather than within artificial limits created by the SWRCB.</p>	
3239	102	<p>A taking of water rights</p> <p>A carryover storage requirement would reduce a party's water rights in two ways: (1) it would effectively raise the minimum pool level of a reservoir, and thus restrict a party's ability to capture water during a high-flow event if the presence of the carryover water caused a spill that would not have occurred in the absence of that water, and (2) it would prevent a party from withdrawing water from storage and putting it to beneficial use.</p> <p>With respect to the first type of taking (i.e., raising the minimum pool and restricting the capture of water), the ruling from <i>Casitas Mun. Water Dist. v. United States</i> (2008) 543 F.3d 1276 (Casitas III) demonstrates that a carryover storage requirement would constitute a physical appropriation of a water right and a taking per se. In <i>Casitas III</i>, the Bureau of Reclamation admitted that its proposed operation of a fish ladder "did not merely require some water to remain in stream, but instead actively caused the physical diversion of water away from the Robles-Casitas-Canal--after the water had left the Ventura River and was in the Robles-Casitas-Canal--and towards the fish ladder, thus reducing Casitas's water supply." (Casitas III, 543 F.3d at 1291-1292.) The court in <i>Casitas III</i> concluded that "[t]he government requirement that Casitas build the fish ladder and divert water to it should be analyzed under the physical takings rubric." (Id. at 1296.)</p>	Please see response to comment 3239-100.

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		<p>Similarly, if the SWRCB required a reservoir operator to divert and hold a certain amount of water in storage, and if the presence of that storage thereafter caused the reservoir to spill during a highflow event in such a way that would not have occurred if "carryover" water was not present, then the carryover storage requirement will have caused a physical diversion away from the water right owner's reservoir, thus reducing its supply. This will result in repeated losses of water rights each time a spill occurs that would not have occurred if the carryover water had not been present.</p> <p>With respect to the second type of taking (i.e., preventing a water right holder from withdrawing water from storage), a carryover storage requirement would cause water to be lost to the bottom of the reservoir and become permanently impounded by the Board in satisfaction of the minimum pool requirement. A carryover storage requirement would effectively transfer possession of the water at the bottom of the reservoir from the water right holder to the State, since the State would be making use of the water and preventing the reservoir owner from putting it to beneficial use, as would be the reservoir owner's right. This would result in a one-time loss of a water right. The recent case of <i>Klamath Irrigation v. U.S.</i>, 129 Fed.Cl. 722 (2016) provides ample support for this proposition that restricting the use of water will constitute a physical taking.</p>	
3239	103	<p>The State Water Board has limited authority to implement water quality objectives through FERC relicensing.</p> <p>The POI states that the Board will implement water quality objectives through FERC relicensing processes. (SED, at Appx. K, p. 28.) The 401 certification process allows the State Water Board to include water quality measures in the FERC license. However, 401 certification is not intended to be the mechanism through which water quality objectives are implemented. (State Water Resources Control Board Cases supra, 136 Cal.App.4th at 734 [stating water quality objectives are usually implemented by amending water right permits].) Further, there are serious limitations to the State Water Board's 401 certification powers.</p> <p>The rules of water right priority require the State Water Board to undertake a water right proceeding before looking to FERC to satisfy water quality objectives. The State Water Board cannot require senior water rights holders to dedicate water to instream uses before junior water right holders simply because the senior right is tied to a project being relicensed under FERC. (<i>El Dorado Irr. Dist. v. State Water Resources Control Bd.</i> (2006) 142 Cal.App.4th 937, 963-964.) Therefore, regardless of the timing of relicensing, the State Board cannot use the FERC proceedings to require senior water right holders to contribute water to meet water quality objectives without first requiring all junior water right holders to cease diversions.</p> <p>In addition, the 401 certification is limited to conditioning project-related impacts. (Water Code, § 13160 [authorizing the State Water Board to grant any certificate required by any federal agency when "there is a reasonable assurance that an activity . . . will not reduce water quality below applicable standards . . ."]; See also Cal. Code Regs., tit. 23, § 3855[b][2][B].) Therefore, to the extent the State Water Board wishes to use the FERC proceedings to implement the Tributary Flow Objective, the State Board must first establish that the project undergoing relicensing is preventing the achievement of the Tributary Flow Objective. The State Water Board has not made this finding and the SED does not provide sufficient information upon which such a finding could be made.</p>	Please see response to comment 3239-92.

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3239	104	<p>The State Water Board cannot use the POI to protect flows past Vernalis because there is no objective past Vernalis.</p> <p>"Although the lowest downstream compliance location for the Lower San Joaquin River flow objectives is at Vernalis, the objectives are intended to protect Lower San Joaquin River fish in a larger area, including the Delta, where fish that migrate to or from the Lower San Joaquin River watershed depend on adequate flows from the Lower San Joaquin River . . ." (Appx. K, p. 28-29). This statement alone in the POI is not sufficient to protect fish and wildlife beneficial uses in the Delta. If the Board intends to protect beneficial uses in a larger area, including the Delta, then it must establish objectives to protect those beneficial uses. It cannot simply declare in the POI the intent of the objectives.</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, concerning the State Water Board's authority to protect flows past Vernalis.</p>
3239	105	<p>The State Water Board has no authority to establish the STM Working Group.</p> <p>The program of implementation states that the State Water Board "will establish" a Stanislaus, Tuolumne and Merced Working Group "to assist with the implementation, monitoring and effectiveness assessment of the February through June LSJR flow requirements." (SED, at Appx. K, p. 32.) The group is to be comprised of California Department of Fish and Wildlife ("DFW"), NMFS, USFWS, and water users on the Stanislaus, Tuolumne and Merced Rivers, the latter of which would include OID, SSJID, MID, TID and CCSF. (SED, at Appx. K, p. 32.)</p> <p>While the program of implementation states that the Board "will establish" this group, the Board cannot compel these agencies to join or participate in such a group. The Board has fairly wide authority in its "planning role to identify activities" of water users that may require correction in order to protect water quality. (United States v. State Water Resources Control Bd., supra, 182 Cal.App.3d at 124.) However, the Board's "enforcement powers" are far narrower. (Ibid.) Apart from regulating water rights and waste discharges, the Board's authority "to implement water quality standards seems limited to recommending actions by other entities." (Id. At 124-125.), citing Water Code, § 13242[a].)</p> <p>Thus, although the Board can recommend that all of the agencies identified above participate in the STM Working Group, it cannot compel them to join or participate in such a group. Since the Board must adhere to its plan once approved (Water Code, § 13247), it would be acting in excess of its authority if it adopted a plan stating that it "will establish" the STM Working Group.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for discussion on the STM Working Group. The State Water Board will establish the STM Working Group with State Water Board staff and will request participation from other organizations.</p>
3239	106	<p>The State Water Board cannot impose carryover storage requirements to manage temperature without a TMDL.</p> <p>If the State Water Board wishes to assert jurisdiction to control instream water temperatures, then it must do so through the Clean Water Act TMDL process. This process is ongoing. No water temperature objectives have been set, nor have any maximum daily loads for the Stanislaus, Tuolumne, Merced or San Joaquin Rivers. Until the TMDL is completed through the Central Valley Regional Water Quality Control Board, or until the State Water Board sets such quality objectives in its Basin Plan, there is no authority for the State Water Board to implement Carryover Storage and other requirements as a surrogate for addressing temperatures. Since the State Water Board cannot require carryover storage in this process as mitigation for its projects' impacts, the requirement that it will be done in the Program of Implementation as mitigation for the project must be deleted.</p>	<p>As stated in Master Response 2.1, Amendments to the Water Quality Control Plan, the program of implementation states that the State Water Board will include minimum reservoir carryover storage or other requirements to help ensure that providing flows to meet the flow objectives will not have adverse temperature or other impacts on fish and wildlife beneficial uses. Reservoir carryover storage is important to attain the narrative LSJR flow objective.</p> <p>Reservoir storage targets are a necessary element of successful implementation of the LSJR flow objectives because they require cold water to be stored in the reservoir so that it is available for flow releases that provide habitat conditions (e.g., cool water temperatures and high velocities) that promote survival of salmonids, depress habitat use by introduced predators, and contribute to attaining the narrative LSJR flow objective.</p> <p>Specific carryover requirements are not established to avoid constraining future implementation and encourage site-specific solutions. Future proceedings will establish specific carryover storage targets and</p>

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			<p>other requirements based on local conditions and project-specific information. Carryover storage is discussed extensively in Master Response 3.2 as it relates to how the effects of the proposed project were modeled.</p>
3239	107	<p>The proposed use of Biological Goals is unlawful.</p> <p>The program of implementation provides that the State Water Board "will seek recommendations on . . . biological goals from the STM Working Group, State Water Board staff, and other interested persons." (SED, at Appx. K, p. 33.) Within 180 days after the OAL approves the amendments to the WQCP, the Board will consider approval of the biological goals. (SED, at Appx. K, p. 33.) These biological goals "will be used to inform the adaptive methods" that are part of the program of implementation. (SED, at Appx. K, p. 33.)</p> <p>Adaptive methods (b) and (c) allow for modifications to the approved objectives. For the various reasons already stated, such changes are unlawful. Moreover, to the extent that the biological goals will be used to inform the changes, their creation is improper. By statute, the Board must consider a multitude of factors before establishing or changing objectives. (Water Code, § 13241.) The biological goals are not one of the factors to be considered in setting objectives, and therefore any consideration of the biological goals when modifying the objectives as part of the POI is improper.</p> <p>Moreover, even if the biological goals could be characterized as constituting one or more of the statutory factors to be considered when setting water quality objectives under Water Code section 13241, the POI does not call for the establishment of the biological goals until after the Board and OAL approve the WQCP. In that sense, the biological goals are an improper post-hoc consideration in the process of establishing objectives to ensure the "reasonable" protection of beneficial uses. (Water Code, § 13241.)</p> <p>Thus biological goals are a clear example that the WQCP is not a plan, but rather an outline for creating a plan sometime in the future.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the required LSJR flow requirements, the narrative and numeric flow objectives, biological goals, and justification of the plan amendments.</p> <p>Please also refer to response 3239-8 regarding the narrative objective and response 3239-19 regarding adaptive methods (b) and (c). Please also see Master Response 2.2, Adaptive Implementation regarding adaptive adjustments. The program of implementation’s framework is intentionally broad to provide operational flexibility for achieving the best biological outcomes with the block of water provided by the LSJR flow objectives while allowing for consideration of other beneficial uses, such as water supply, provided these other considerations do not reduce intended benefits to fish and wildlife. The program of implementation does not prescribe specific flow schedules during specific calendar dates. Instead, the program of implementation establishes minimum requirements for using the block of water, provided by the LSJR flow objectives, to achieve the narrative flow objective, which will help achieve the salmon protection objective. The Biological goals that will be established by the State Water Board do not modify the objectives but are instead used to support implementation of the LSJR flow objective.</p> <p>Please also refer Master Response 3.1, Fish Protection, the Executive Summary, and Chapter 3, Description of Alternatives, for additional information regarding biological goals. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the required LSJR flow requirements, the narrative and numeric flow objectives, biological goals, and justification of the plan amendments.</p> <p>Please also refer to response 3239-8 regarding the narrative objective and response 3239-19 regarding adaptive methods (b) and (c). Please also see Master Response 2.2, Adaptive Implementation regarding adaptive adjustments. The program of implementation’s framework is intentionally broad to provide operational flexibility for achieving the best biological outcomes with the block of water provided by the LSJR flow objectives while allowing for consideration of other beneficial uses, such as water supply, provided these other considerations do not reduce intended benefits to fish and wildlife. The program of implementation does not prescribe specific flow schedules during specific calendar dates. Instead, the program of implementation establishes minimum requirements for using the block of water, provided by the LSJR flow objectives, to achieve the narrative flow objective, which will help achieve the salmon protection objective. The Biological goals that will be established by the State Water Board do not modify the objectives but are instead used to support implementation of the LSJR flow objective.</p> <p>Please also refer Master Response 3.1, Fish Protection, the Executive Summary, and Chapter 3, Description of Alternatives, for additional information regarding biological goals.</p>
3239	108	<p>The Program of Implementation does not include a sufficient time schedule for implementation.</p> <p>A program of implementation must include "[a] time schedule for the actions to be taken." (Water Code, § 13242[b].) The POI states, in relevant part, "[b]y 2022, the State Water Board will fully implement the February through June LSJR flow objectives through water right actions or water quality actions, such as FERC hydropower licensing processes." (SED, at Appx. K, p. 28.) The POI expands slightly on this 2022 deadline by stating that the "February through June LSJR flow objective may be phased in over time, but must be fully implemented by 2022." (SED, at Appx. K, p. 28, fn. 8.)</p>	<p>Please see response to comment 3239-89 as to why the program of implementation more than adequately meets Water Code section 13242, including with regard to time schedules.</p>

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		<p>A single deadline for the implementation of all objectives is not a "time schedule for the actions to be taken." (Water Code, § 13242[b].) The deadline does not create a path or schedule for all of the actions that will be necessary to achieve the objectives. Apart from the final deadline, there is no time schedule for creating or implementing carryover storage targets, nor for "funding and development of water conservation efforts and regional water supply reliability projects and regulation of public drinking water systems and water rights," nor for requiring 40% unimpaired flow on the three eastside tributaries, nor for requiring 1,000 cfs at Vernalis, nor for adaptively adjusting the objectives, nor for creating the STM Working Group. (SED, at Appx. K, p. 28-34.) The failure to include a time schedule for any of these actions is a violation of Water Code section 13242[b].</p>	
3239	109	<p>The Program of Implementation fails to include a description of the surveillance to be undertaken to determine compliance with the unimpaired flow objectives.</p> <p>The program of implementation must include, among other things, a "description of surveillance to be undertaken to determine compliance with objectives." (Water Code, § 13242[c].) Under the subheading "Unimpaired Flow Compliance," the program of implementation states, "[i]mplementation of the unimpaired flow requirement for February through June will require the development of information and specific measures to achieve the flow objectives and to monitor and evaluate compliance." (SED, at Appx. K, p. 33.) The plan further states that the "STM Working Group, or State Water Board staff as necessary, will, in consultation with the Delta Science Program, develop and recommend such proposed measures" to the Board for consideration and approval within 180 days of OAL's approval of the amendments to the Bay-Delta Plan. (SED, at Appx. K, p. 33.) This proposal is substantively inadequate and procedurally improper.</p> <p>First, the program of implementation fails to include the requisite "description of the surveillance to be undertaken to determine compliance" with the unimpaired flow objective. (Water Code, § 13242.) Instead, it asserts that compliance measures have not been established and will require further development. Second, the Water Code requires that the compliance measures be included in the water quality control plan before it is adopted by the Board and sent to OAL for approval, not after. Specifically, the WQCP must include a program of implementation (Water Code, § 13050[j]), and the program of implementation must include a description of the compliance measures. (Water Code, § 13242[c].) The Board may only adopt a water quality control plan that complies with these provisions. (Water Code, § 13170.) Accordingly, delaying consideration of the compliance measures until after the plan amendments are approved by the Board and OAL is procedurally improper.</p>	<p>Please see response to comment 3239-89 as to why the program of implementation more than adequately meets Water Code section 13242.</p> <p>The program of implementation for the LSJR flow objectives includes, among other things, a description of requirements for special studies, reporting, and monitoring. In addition, it requires DWR and USBR to develop a comprehensive operations plan and a long-term monitoring and reporting plan to determine compliance with the salinity objective and to inform the comprehensive operations plan.</p> <p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan regarding the establishment and duties of the San Joaquin River Monitoring and Evaluation Program (SJRMEP). The SJRMEP is necessary to determine compliance with the flow objectives, inform adaptive implementation, investigate technical factors involved in water quality control, and potential future changes to the LSJR flow objectives. Many commenters agreed with the need for the SJRMEP and requested additional details to be added to the plan amendments. Commenters requested details such as specific monitoring requirements and special studies, a description of methods for creating a regional monitoring program, identifying responsible parties for performing monitoring activities including data collection, data management, evaluation of monitoring data, and creating and submitting annual and comprehensive reports.</p> <p>The language in the program of implementation requiring the establishment of the SJRMEP is purposely broad to provide the necessary time and flexibility needed to establish an effective and efficient regional monitoring program. Specific responsibility for the various monitoring and assessment elements, including annual and comprehensive reports, will be assigned when the State Water Board assigns responsibility for the LSJR flow objectives in regulation, water right permits and licenses, and/or water quality certifications.</p>
3239	110	<p>The Program of Implementation includes a San Joaquin River Monitoring and Evaluation Program ("SJRMEP") which is not sufficient to satisfy the monitoring requirement.</p> <p>The program of implementation contains a heading entitled, "San Joaquin River Monitoring and Evaluation Program." (SED, at Appx. K, p. 35.) However, the POI does not describe how or when this program will be created, nor does it indicate who will be responsible for running it or participating in it. Furthermore, the program fails to include a description of the specific surveillance that will be "undertaken to determine compliance with the objectives." (Water Code, § 13242[c].) Instead, it merely states that "monitoring, special studies and evaluations" will occur to determine whether compliance with the Narrative Objective is being achieved. (SED, at Appx. K, p. 35.) This statement is nothing more than an</p>	<p>Please refer to response to comment 3239-109.</p> <p>Please refer to Master Response 1.2, Water Quality Control Planning Process, for response to comments regarding due process.</p> <p>Please note that the full text of Appendix K, Revised Water Quality Control Plan, on page 36 states: "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. This information will be used to inform potential adaptive changes to the implementation of the flow objectives and, as appropriate, future potential changes to the Bay-Delta Plan." The language does not prejudice whether recommendations would fall within the flexibility of the program of implementation or require a future update to the Bay-Delta</p>

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		<p>assertion that surveillance will be undertaken to determine compliance with the objective; it is not a description of the specific surveillance that will occur, which is the requirement of Water Code section 13242[c].</p> <p>In addition, the SJRMEP contains annual and comprehensive reporting requirements. (SED, at Appx. K, p. 36.) The POI states that "parties are encouraged to work collaboratively in one or more groups and in consultation with the STM Working Group, USBR and DWR, in meeting" these reporting requirements. (SED, at Appx. K, p. 36.) However, the POI does not actually assign responsibility to any particular party for satisfying these reporting requirements. In addition, the annual and comprehensive reports are to review "progress toward meeting the biological goals . . ." (SED, at Appx. K, p. 36.) These reports will be insufficient. Water Code section 13242[c] requires a description of the surveillance that will be undertaken to determine compliance with the objectives, not with biological goals.</p> <p>Finally, the POI states that the comprehensive reports will recommend "changes to the implementation of the flow objectives." (SED, at Appx. K, p. 36.) To the extent that these recommendations would allow for changes to the objectives without a hearing to amend the water quality control plan, the recommendations would be improper.</p>	<p>Plan.</p>
3239	111	<p>The Procedure for Implementation of Adaptive Methods is unnecessary and confuses the purpose of the Program of Implementation.</p> <p>The program of implementation includes a "Procedure for Implementation of Adaptive Methods." (SED, at Appx. K, p. 34.) The section states that the Board will consider and approve a set of procedures for allowing the "adaptive adjustments" to the LSJR flow objectives within one year of OAL's approval of the WQCP. These procedures are to be developed by either the STM Working Group, or State Water Board staff if necessary. The inclusion of this section is unnecessary and improper.</p> <p>The "adaptive adjustments" are part of the program of implementation. (SED, at Appx. K, p. 26-31.) Under Water Code section 13242, the program of implementation must describe the procedure for implementing the objectives; it should not require its own program of implementation. The inclusion of this section appears to be an outgrowth of Staff's decision to create a program of implementation that improperly allows for changes to the objectives after the WQCP is approved.</p> <p>The notion that the Board can set up a new procedure for making changes to the objectives as part of a program of implementation demonstrates a misunderstanding of the current process. The purpose of the current proceeding is to amend the water quality control plan. Once the Board approves the amendments, it must follow the procedure established by the legislature if it desires to change those objectives again, i.e., a properly noticed and conducted hearing. (Water Code, § 13244.) The Board cannot create a new set of procedures for revising objectives in a water quality control plan under the guise of implementing a component of a program of implementation.</p>	<p>Please see response to comment 3239-6 regarding clarification of the LSJR unimpaired flow objective. The adaptive range, if adopted, would represent the Board's determination of a range of flow that reasonably protects the beneficial use and meets the narrative objective. The program of implementation does not change the objectives but allows for the volume of water calculated under the numeric flow objective to be adaptively managed to better meet the narrative objective.</p> <p>Adaptive adjustments b and c are adjustments within that range and are appropriate.</p> <p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the range of adaptive adjustments.</p> <p>Please also refer to Master Response 2.2, Adaptive Implementation, Master Response 3.1, Fish Protection, SED Executive Summary, and SED, Chapter 3, Description of Alternatives for additional information.</p>
3239	112	<p>The Program of Implementation unlawfully delegates authority to the Executive Director.</p> <p>The WQCP unlawfully delegates several duties to the Executive Director. Pursuant to Resolution No. 2012-0061, the State Water Board has delegated specific authorities to the Executive Director. Resolution No. 2012-0061 delegates the authority to: notice Board meetings and hearings, manage State Water Board staff, meet with other agency officials,</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for an explanation of why the proposed delegation of authority to the Executive Director is within the authority of the State Water Board. The ability of the Executive Director to take the actions specified in the plan amendments is part of the proposed approval.</p> <p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for additional</p>

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		<p>implement the State Water Board’s policies and regulations, meet with Regional Water Quality Control Board Executive Officers, and approve Clean Water Act section 205 final products. (Resolution No. 2012- 0061, at 1.)</p> <p>However, the resolution does not authorize the Executive Director to set policy or change regulations; those authorities are reserved for the State Water Board. (Id.) The Executive Director is specifically prohibited from "adopting or approving water quality control plans or plan amendments." (Resolution No. 2012-0061, at 3.3.) This is consistent with Water Code section 13245, which provides that only the State Water Board may approve water quality control plans.</p> <p>The POI improperly seeks to delegate several duties to the Executive Direction in violation of Resolution 2012-0061 and Water Code section 13240 et seq. First, the POI states that the Executive Direct may approve changes to the compliance locations that are set forth in Table 3. (SED, at Appx K, p. 29.) The compliance locations are part of the objectives, and thus cannot be modified by the Executive Director, nor can they be changed without a new hearing. (Water Code, § 13244.)</p> <p>Second, the POI states that the Executive Director may approve "[a]daptive adjustments to the flow requirements." (SED, at Appx. K, p. 30.) Adaptive adjustments b and c allow for changes to the objectives themselves. Since the objectives are part of the water quality control plan, they can only be amended by the State Water Board; the authority to make such amendments has not been--and cannot be--delegated to the Executive Director. (Water Code, § 13240 et seq.; Resolution 2012-0061.)</p> <p>Third, the POI states that "[i]mplementation of the unimpaired flow requirement for February through June will require the development of information and specific measures to achieve the flow objectives and to monitor and evaluate compliance." (SED, at Appx. K, p. 33.) The STM Working Group is granted the authority to develop and recommend these measures, and the Executive Director is granted the authority to approve the measures within 180 days of OAL’s approval of the amendments to the WQCP. (SED, at Appx. K, p. 33.)</p> <p>This procedure is improper. Two of the required components of the POI are (1) a description of the actions necessary to achieve the objectives, and (2) a description of the surveillance to be undertaken to determine compliance. (Water Code, § 13242.) The State Water Board is supposed to review those descriptions and approve them as part of the water quality control plan--before OAL approves plan. (Water Code, § 13245.) The Board cannot delegate these tasks to the STM Working Group, nor can it delegate to the Executive Director the responsibility of approving components of the POI, especially after the WQCP is approved by OAL. These components of the WQCP should be approved by the Board, not approved by the Executive Director after the adoption of the plan.</p> <p>Fourth, the POI states that the STM Working Group, or Board staff if necessary, will develop a set of procedures for allowing adaptive adjustments to the February through June flow objectives. For the various reasons stated above, it is improper to create a new set of procedures for revising objectives in a WQCP under the guise of implementing a component of a program of implementation. To the extent that the POI purports to grant the Executive Director the authority to approve these procedures, such grant of authority is also improper.</p> <p>Fifth, the POI grants the Executive Director the authority to approve annual adaptive</p>	<p>response to comments regarding the range of adaptive adjustments.</p> <p>Please also refer to Master Response 2.2, Adaptive Implementation, Master Response 3.1, Fish Protection, SED Executive Summary, and SED, Chapter 3, Description of Alternatives for additional information.</p> <p>Please also refer to comment 3239-109 regarding monitoring and evaluation; comment 3239-110 regarding future potential changes to the WQCP; and, comment 3239-111 regarding adaptive adjustments.</p>

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		<p>operations plans. (SED, at Appx. K, p. 34.) To the extent that the annual operations plans will allow for changes to the objectives, it is improper for the Executive Director to approve those changes, as any modifications to the WQCP must be approved by the State Water Board. (Water Code, § 13240 et. seq.)</p>	
3239	113	<p>The Proposal for Annual Adaptive Operations Plans is not enforceable.</p> <p>The Annual Adaptive Operations Plan proposal is not enforceable. Only the STM Working Group, or members thereof, are required to submit proposed annual plans for adaptive implementation actions. (SED, at Appx. K, p. 34.) However, the State Water Board cannot compel participation in the STM Working Group, and can only recommend participation. (Water Code, § 13242[a]; United States v. State Water Resources Control Bd., supra, 182 Cal.App.3d at 124-125). Accordingly, there may not be any participating entities required to submit annual plans. The entire proposal is not enforceable.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for discussion on the STM Working Group. The State Water Board will establish the STM Working Group with State Water Board staff and will request participation from other organizations. As noted in the SED, Appendix K, the State Water Board will seek participation in the STM Working Group by the following entities who have expertise in LSJR, Stanislaus, Tuolumne, and Merced Rivers fisheries management, hydrology, operations, and monitoring and assessment needs: the DFW; NMFS; USFWS; and water users on the Stanislaus, Tuolumne, and Merced Rivers. The STM Working Group may include any other persons or entities the Executive Director determines to have appropriate expertise. Subgroups of the STM Working Group may be formed as appropriate and State Water Board staff may also initiate activities in coordination with members of the STM Working Group.</p> <p>As noted in Master Response 2.2, Adaptive Implementation, the STM Working Group would ideally have broad participation from water agencies, fisheries agencies and others. However, even if participation is limited to State Water Board staff, the STM Working Group will still be able to develop and implement adaptive management.</p> <p>Please refer to Master Response 2.2, Adaptive Implementation, for additional discussion of the STM Working Group Structure and Governance.</p>
3239	114	<p>The Program of Implementation does not identify a responsible party for completing the required annual and comprehensive reports.</p> <p>The program of implementation includes an "[a]nnual reporting" requirement. (SED, at Appx. K, p. 36.) It states, in part, "[t]o inform the next year's operations and other activities, the State Water Board will require the preparation and submittal of an annual report to the State Water Board by December 31 of each year." (SED, at Appx. K, p. 36.) However, the WQCP does not identify who is responsible for preparing this report. There is a list of agencies that are supposed to work together to meet this reporting requirement, but the plan does not place responsibility on any particular party. (SED, at Appx. K, p. 36.) This deficiency should be corrected.</p> <p>In addition to the annual reporting requirement, the POI requires a comprehensive report every three to five years. (SED, at Appx. K, p. 36.) Again, the WQCP does not identify who is responsible for preparing this report. This deficiency should be corrected.</p> <p>The comprehensive report is intended to review any progress made toward meeting the "biological goals" and to identify recommended "changes to the implementation of the flow objectives." (SED, at Appx. K, p. 36.) This reporting requirement does not satisfy the compliance monitoring requirement of Water Code section 13242. The program of implementation must describe the "surveillance to be undertaken to determine compliance with objectives." (Water Code, § 13242[c].) As written, the comprehensive report will not inform the Board of compliance with the objectives, but rather of compliance with the "biological goals," which are not objectives.</p> <p>Moreover, although the report will recommend changes to the "implementation of the flow objectives," it must be noted that neither the objectives, nor the program of implementation, can be changed by the Board without a properly noticed hearing under</p>	<p>Please refer to response to comment 3239-105 regarding the Stanislaus, Tuolumne and Merced Working Group (STM Working Group), response to comment 3239-109 regarding the San Joaquin River Monitoring and Evaluation Program (SJRMEP), and response to comment 3239-110 regarding how there is no prejudgment as to whether recommendations from the comprehensive report would fall within the flexibility of the program of implementation or require a future update to the Bay-Delta Plan.</p> <p>Please also refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the STM Working Group and SJRMEP formation and duties. Specific responsibility for the various monitoring and assessment elements, including annual and comprehensive reports, will be assigned when the State Water Board assigns responsibility for the LSJR flow objectives in regulation, water rights permits and licenses, and/or water quality certifications.</p>

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		<p>Water Code section 13244. Thus, to the extent that the purpose of the comprehensive report is "to inform potential adaptive changes to the implementation of the flow objectives" without revising the Bay-Delta Plan (SED, at Appx. K, p. 36), no such changes can be made. (Water Code, § 13244.)</p>	
3239	115	<p>The POI does not call for implementation of all the operational criteria included in the project that was modeled in the SED.</p> <p>There are several modeling assumptions included in the SED that are not included in the objectives or the program of implementation. If Board Staff intends for these assumptions to be the water quality control plan, then they should be included as objectives so that the Board can determine whether the protection afforded to beneficial uses as a result of these components is reasonable in light of their impact on other beneficial uses. (Water Code, § 13241.) The components include: (1) minimum diversions, (2) minimum carryover storage requirements, (3) maximum storage draw, (4) shifting of flows outside the February to June period to the fall, and (5) reservoir refill criteria. (SED, at Appx. F1, p. F.1-36 - F.1-38.)</p> <p>Only two of these components are mentioned in the water quality control plan: carryover storage and flow shifting. Both of these components are referenced solely in the program of implementation; they are not included as objectives. Furthermore, the POI does not identify a quantity of water for carryover storage or flow shifting. Without a specific quantity, the reference is hollow and meaningless. If the modeling assumptions are intended to be part of the water quality control plan, then they must be included as objectives, and the program of implementation must include a description of the actions that are necessary to achieve them.</p> <p>In addition, the model assumes that the proposed percentages of unimpaired flow are an "additional requirement" to the baseline flow requirements on each tributary. (SED, at Appx. F.1-13.) As a result, the model assumes that flows will be "the greater of either the baseline flow requirements [i.e., FERC and/or ESA requirements], or the unimpaired flow requirement." (SED, at Appx. F.1-13.)</p> <p>This assumption is problematic because the State Water Board has no jurisdiction over these baseline flow requirements, and those requirements could change. For instance, USBR has reinitiated consultation under Section 7 of the ESA on the Long-Term Operation of the CVP, (SJTA Attachment 13), and thus the flow requirements currently set forth in Appx. 2e of the 2009 NMFS BO could change. (Consol. Salmonid Cases v. Locke (2011) 791 F.Supp.2d 802, 940 ["If . . . Reclamation's predictions prove incorrect and make the RPAs' implementation infeasible . . . Reclamation must then re-initiate consultation".]) If the baseline flows are intended to be a part of the project, then they must be included as objectives, and there must be a plan of implementation to achieve them.</p>	<p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the definition of the narrative and numeric LSJR flow objectives. The percent of unimpaired flow is only one part of the plan amendments. Other components such as adaptive implementation (e.g., flow shifting) and minimum reservoir carryover storage targets or other requirements (e.g., operations to maintain carryover storage) are also part of the plan amendments as described in Appendix K, Revised Water Quality Control Plan, and are modeled in the SED analysis for comparative purposes consistent with the programmatic level of analysis. Please refer to response to comment 3239-19 for additional discussion.</p> <p>Please refer to Master Response 1.1, General Comments for a response to comments expressing concern about the modeling and other information provided in the SED.</p> <p>Please refer to Master Response 3.2, Surface Water Analyses and Modeling, for a discussion of the modeling approach and the use of the WSE model to programatically analyze effects.</p>
3239	116	<p>The Program of Implementation fails to explain how the objectives will be implemented without contravening the Sustainable Groundwater Management Act ("SGMA").</p> <p>The program of implementation must describe the actions that are necessary to achieve the objectives. (Water Code, § 13242.) The SED acknowledges that the unimpaired flow objectives will cause significant and unavoidable impacts to groundwater resources. However, the POI fails to describe how the unimpaired flow requirements will be implemented without contravening the SGMA. The failure to address this issue renders the</p>	<p>As discussed in Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, compliance with SGMA is based on a future evaluation by the state as to whether local public agencies have met certain requirements for managing the local groundwater basin sustainably. The state is not a local public agency and, more importantly, groundwater pumping is not part of the plan amendments and program of implementation. As discussed in greater detail in Master Response 3.4, the SED was required to evaluate a potential increase in groundwater pumping because an increase in groundwater pumping is a foreseeable local reaction to a reduction in surface water. To the extent that some commenters were anticipating that existing or increased levels of surface water diversions could be used for future SGMA compliance, such conjecture is unreasonable because local public agencies have been on notice since 2009</p>

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		POI unworkable and unviable.	that additional instream flow would be needed for fish and wildlife beneficial uses in the plan area. Those local public agencies have not yet drafted their groundwater sustainability plans under SGMA and will, on a going-forward basis, need to consider requirements in response to implementation of the plan amendments as part of the water balance. Moreover, sustainably managing surface water and groundwater resources together is the only way to ensure the protection of both resources. Therefore, the plan amendments do not contravene SGMA.
3239	117	<p>The Program of Implementation fails to adequately explain the emergency relief component.</p> <p>The POI contains a "State of Emergency" section which allows the Board to authorize a "temporary change in the implementation of the LSJR flow objectives in a water right proceeding" under certain conditions. This procedure for emergency relief is inadequate. The plan proposes that some of the objectives be implemented through a certification process under Section 401 of the Clean Water Act. "The limitations included in the certification become a condition on any federal license." (PUD No. 1 v. Wash. Dep't of Ecology, supra, 511 U.S. 700, 708.) Thus, if the objectives are implemented in this fashion, the Board will not be able to relax the requirements through a water right proceeding. Additional emergency measures need to be included in the plan.</p>	<p>As noted in Master Response 1.2, Water Quality Control Planning Process, it is premature to object to the water quality certification process as a means of implementing the water quality objectives and it is also speculative to consider whether the State Water Board would seek to modify any certification conditions under a reservation of authority. Nonetheless, in general, a state agency cannot unilaterally add new conditions on the federal licensee until the license is renewed or the project has been amended in a way that would have a material adverse impact on water quality and therefore require a new certification. (See Karuk Tribe v. California Regional Water Quality Control Bd. (2010) 183 Cal.App.4th 330, 340 fn. 6; Alabama Rivers Alliance v. FERC (D.C. Cir. 2003) 325 F.3d 290, 299.) Under section 401, subdivision (d), however, the State Water Board has authority to attach "any conditions that are necessary to ensure compliance with" applicable water quality requirements. (S.D. Warren Co. v. Bd. of Environmental Protection (2005) 868 A.2d 210, 218.) This includes attaching open-ended conditions as a precaution to ensure compliance with state water quality requirements. (See <i>ibid.</i> [upholding reopener that allowed amendment of conditions following notice and hearing]; see also <i>Port of Seattle v. Pollution Control Hearings Bd.</i> (2004) 151 Wash.2d 568, 605-606 [upholding adaptive management conditions].)</p> <p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for additional response to comments regarding the emergency provision.</p>
3239	118	<p>The Program of Implementation does not address implementation of any recommended non-flow measures.</p> <p>The POI contains a list of recommended non-flow actions, including restoration of floodplain habitat, reducing unwanted vegetation, providing coarse sediment for salmonid spawning, and reducing predation and invasive species. (SED, at Appx. K, p. 59-63.) Presumably, these actions are intended to achieve the Narrative Objective because they have no relation to achievement of the flow-related objectives. However, the POI does not include a time schedule for any of these actions, nor a method of surveillance to ensure that these actions assist with compliance with the objectives, as required by (Water Code, § 13242.)</p> <p>Moreover, the State Water Board has an "obligation to implement its own water quality control plan." (State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 734.) If the Board chooses a method of implementation that is shown to be incapable of meeting the objectives, then that aspect of the program of implementation will be deemed "illusory" and in violation of the Board's obligation to implement its own plan. (<i>Ibid.</i> [if it had been shown that DWR and USBR were incapable of meeting the salinity objectives in the water quality control plan, then the Board's allocation of that responsibility to DWR and USBR in D-1641 would have been "illusory" and a violation of the Board's obligation to implement its own plan].)</p> <p>The 2006 Bay Delta Plan did not include a time schedule or surveillance methods for the non-flow implementation measures. As a result, these measures were never implemented. (SWRCB, 2006 Bay Delta Plan, at 35-41.) The State Water Board is required to fully implement its water quality control plan. (State Water Resources Control Bd. Cases, (2006) 136 Cal.App.4th 674, 733.) The State Water Board cannot fully implement its plan if it does</p>	<p>The proposed plan amendments include recommendations for non-flow measures, which, along with the coordinated and adaptive implementation of the LSJR flow objectives, are expected to improve habitat conditions that benefit native fish and wildlife within the LSJR Watershed. As discussed throughout Master Response 5.2, Incorporation of Non-Flow Measures, and in the SED, the State Water Board's authority to impose non-flow measures is limited. Non-flow measures are included in the program of implementation as recommendations and, if parties choose to implement them, may inform adaptive implementation of the flow objectives.</p> <p>Please refer to Master Response 5.2, Incorporation of Non-Flow Measures for further discussion on the role of non-flow measures in the plan amendments.</p> <p>In addition, the commenter makes the unsupported assertion that the Recommendations to Other Agencies in the 2006 Bay-Delta Plan were "never implemented." Many of the recommendations are carried forward from the 1995 Bay-Delta Plan and have been continuously implemented. For example, the California Fish and Game Commission has instituted multiple modifications to commercial and sport fishing regulations in order to protect species, including closures of recreational fisheries (CDFW 2018). The California Department of Fish and Wildlife (CDFW) instituted a Delta-Bay Enhanced Enforcement Project to reduce illegal harvesting (CDFW 2015). The California Department of Water Resources spent over fifteen years evaluating alternative water conveyance and storage facilities of the SWP and CVP in the Delta, first under the CALFED Bay-Delta Program and later under the Bay Delta Conservation Program and WaterFix. In addition, millions of dollars of investment have been made in fish passage, fish screening, and fisheries restoration improvements, including almost \$40 million in 2017 (CDFW 2017).</p> <p>The commenter suggests that "refusing to implement the tributary flow objective," or making the tributary flow objective "expire," will "leverage" unspecified parties to implement non-flow actions. These are not reasonable approaches as local water agencies on the eastside tributaries, according to the hundreds of</p>

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		<p>not even attempt to require compliance with its recommended actions. Although the State Water Board may not force other agencies or entities to comply with its recommendations, it has tools available to incentivize compliance.</p> <p>For instance, the State Water Board could use flow requirements as leverage by refusing to implement the Tributary Flow Objective until non-flow actions were taken. Conversely, the Tributary Flow Objective could expire upon a date certain if particular non-flow actions are not taken. The State Water Board could enter into an agreement or memorandum of understanding with agencies tasked with non-flow measures which set forth deadlines and reporting requirements. In addition, the State Water Board could modify appropriate permits held by these agencies or entities if they failed to implement the non-flow actions.</p> <p>Because the State Water Board has not included any of these actions in the program of implementation it is deficient. The State Water Board has failed to do anything for the last twenty years regarding its recommendations to other agencies. Until other actions are taken, the narrative objectives cannot be met.</p>	<p>pages of comment they have provided, oppose implementation of the tributary flow objective. Therefore, refusing to implement the objective or allowing the objective to expire would not be leverage for those parties to act. To the extent that the commenter is referring to agencies such as CDFW, which is the trustee agency for the fish and wildlife of the state (Cal. Code Regs., tit. 14, § 15386(a)), CDFW is not a water right holder on the eastside tributaries responsible for the reductions in flow and alterations to the flow regime in the San Joaquin River basin that have negatively impacted fish and wildlife beneficial uses (see Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives). Therefore, it would be illogical to enter into agreements that would make CDFW responsible. The State Water Board must adopt objectives that reasonably protect fish and wildlife and the proposed plan amendments meet that standard. Threatening inaction with regard to the LSJR flow objectives so that other parties will act does not constitute reasonable protection.</p> <p>Moreover, the State Water Board is already providing the opportunity for stakeholders on the eastside tributaries to enter into agreements that could include non-flow measures that inform and expedite implementation of the flow objectives. These are referenced in the program of implementation as voluntary agreements and could include a mix of both flow and non-flow measures. Please see Master Response 1.1, General Comments, for additional discussion of voluntary agreements.</p>
3239	119	<p>Components of the Program of Implementation are unclear and require further clarification before adoption.</p> <p>The following sentence makes no sense given the objectives proposed by the State Water Board: "The required percentage of unimpaired flow is in addition to flows in the Lower San Joaquin River from sources other than the Lower San Joaquin River tributaries." (SED, Appx. K, p. 29.) This sentence makes no sense as there is no flow objective for the Lower San Joaquin River for percentage of flow, only minimum flow. If minimum flows are being met at Vernalis by flows other than flows from the tributaries, then do the tributaries have to release water? If so, what would it be? As to the percentage of UIF flow objective, this makes no sense.</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan regarding changes made to Appendix K, Revised Water Quality Control Plan, for clarity and consistency. These changes do not substantively change the LSJR flow objectives or alter the conclusions in the SED analyses.</p> <p>For simplicity and clarification, the sentence referenced by commenter is deleted as unnecessary since the program of implementation already specifies that the State Water Board will exercise its water right and water quality authority to help ensure that flows require to meet the LSJR flow objectives are used for their intended purpose and are not diverted for other purposes.</p>
3239	120	<p>The Proposed Objectives are unlawful because they are a waste and unreasonable use of water in violation of Article X, Section 2 of the California Constitution.</p> <p>Article X, section 2 of the California Constitution prohibits the "waste or unreasonable use or unreasonable method of use of water." (Cal. Const., art. X, § 2.) This constitutional mandate knows no exceptions and applies to "the use of all water, under whatever right the use may be enjoyed." (Peabody v. Vallejo, 2 Cal.2d 351, 367.) Accordingly, the rule must be followed by water users, the State Water Board and the courts of this State. Specifically, a water user is limited to taking "only such amount [of water] as he [or she] reasonably needs for beneficial purposes." (Pasadena v. Alhambra (1949) 33 Cal.2d 908, 925; see also City of Barstow v. Mojave Water Agency (2000) 23 Cal.4th 1224, 1241).</p> <p>The State Water Board is statutorily bound to "to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water," and is thus prohibited from requiring water to be used unreasonably. (Water Code, § 275; see State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 761-762 [analyzing whether the State Water Board's order to use water from New Melones reservoir to dilute salinity at Vernalis and meet the requirements of D-1641 amounts to an unreasonable use of water]; see also Baldwin v. County of Tehama (1994) 31 Cal.App.4th 166, 183.) Likewise, the courts of this State are precluded from imposing any physical solution or injunction "if its effect will be to waste water that can be used." (Rancho Santa Margarita v. Vail (1938) 11 Cal.2d 501,</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, for a discussion of reasonableness with respect to the requirements of the Porter-Cologne Water Quality Control Act, Clean Water Act, and California Constitutional Article X, section 2. In addition, the State Water Board will make its determination of reasonableness when it establishes the water quality objectives; this decision is not revisited as the objectives are implemented. Section 13241 "grants the [State Water] Board broad discretion to establish reasonable standards consistent with overall statewide interest." (United States v. State Water Resources Control Bd., supra, 182 Cal.App.3d at p. 116.) There is no set formula in determining reasonableness. Environmental characteristics of the area, beneficial uses, and economic considerations, for example, all are necessary parts of the determination of reasonableness. When establishing the water quality objectives, the State Water Board will consider the section 13241 factors and information in the SED, including the impacts and benefits of the proposed water quality objectives, in determining what will ensure reasonable protection of the beneficial uses.</p>

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		<p>558-559.) The purpose of this constitutional provision is "to make it possible to marshal the water resources of the state and make them available for the constantly increasing needs of all of its people." (Meridian, Ltd. v. San Francisco (1939) 13 Cal.2d 424, 449.)</p> <p>The measure of what constitutes a "reasonable use" is a question of fact, to be determined according to the circumstances of each particular case. (Environmental Defense Fund, Inc. v. East Bay Mun. Utility Dist. (1980) 26 Cal.3d 183, 194, citing Joslin v. Marin Municipal Water Dist. (1967) 67 Cal.2d 132, 139-140; see Jordan v. City of Santa Barbara (1996) 46 Cal.App.4th 1245, 1268.) A reasonable beneficial use in areas where water is in excess may not be a reasonable beneficial use "in an area of great scarcity and great need." (Tulare Irrigation Dist. v. Lindsay- Strathmore Irrigation Dist. (1935) 3 Cal.2d 489, 567.) Similarly, "[w]hat is a beneficial use at one time may, because of changed conditions, become a waste of water at a later time." (Tulare Irrigation Dist. supra, 3 Cal.2d at 567.)</p> <p>The circumstances that must be considered when evaluating whether a use is reasonable include: (1) the quantity of water needed for the beneficial use served (Lodi v. East Bay Municipal Dist. (1936) 7 Cal.2d 316, 339-340 [releasing a large quantity of water to force a small quantity of water into the surrounding underground water table is a waste]; City of Barstow v. Mojave Water Agency (2000) 23 Cal.4th 1224, 1241); (2) a comparison of other potential uses (Imperial Irrigation Dist. v. State Wat. Resources Control Bd. (1990) 225 Cal.App.3d 548, 570-571 [the mere fact "that a diversion of water may be for a purpose 'beneficial' in some respect . . . does not make such use 'reasonable' when compared with demands, or even future demands, for more important uses"]); and (3) local environmental conditions (Tulare Irr. Dist. v. Lindsay-Strathmore Irr. Dist. (1935) 3 Cal.2d 489, 567), among others.</p> <p>In analyzing whether the proposed objectives in the WQCP comport with Article X, section 2 of the Constitution, the first step requires an identification of the beneficial uses to be protected by the proposed objectives, and the quantity of water being required by the proposed objectives to protect those beneficial uses. Once the quantity of water required to protect each beneficial use is identified, the analysis shifts to whether using that quantity of water to protect that beneficial use is a reasonable use of that water under the circumstances. For the reasons stated below, the proposed objectives violate Article X, section 2 of the Constitution because they require waste and unreasonable use of water.</p>	
3239	121	<p>Beneficial Uses to be Served by the Proposed Objectives</p> <p>As relevant here, the WQCP states that the objectives in Table 3 "provide reasonable protection of fish and wildlife beneficial uses in the Bay-Delta Estuary including EST [estuarine habitat], COLD [cold freshwater habitat], WARM [warm freshwater habitat], MIGR [migration of aquatic organisms], SPWN [spawning, reproduction, and/or early development], WILD [wildlife habitat], and RARE [rare, threatened or endangered species]." (SED, Appx. K, at 13.)</p> <p>The WQCP states that parameters such as dissolved oxygen, temperature and toxic chemical all have threshold levels "beyond which adverse impacts to the beneficial uses occur." (SED, at Appx. K, p. 13.) However, the flow objectives have "no defined threshold conditions that [can] be used to set objectives" and therefore are "based on a subjective determination of the reasonable needs of all the consumptive and nonconsumptive demands on the waters of the Estuary." (SED, at Appx. K, p. 13.)</p>	Please refer to response to comment 3239-133.

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		<p>In sum, the WQCP states that the Narrative Flow Objective, the Tributary Flow Objective, and the Vernalis Flow Objective, all of which are contained in Table 3, protect the seven aforementioned beneficial uses.</p>	
3239	122	<p>Quantity of Water Needed for the Beneficial Use Served</p> <p>The proposed amendments to the WQCP for the Lower San Joaquin River include a new Narrative Objective, the Tributary Flow Objectives and the Vernalis Flow Objective. (SED, at Appx. K, p. 18.) The Tributary Flow Objective and the Vernalis Flow Objective are quantitative in nature, with the former requiring 30% to 50% unimpaired flow from each of the Stanislaus, Tuolumne and Merced Rivers from February through June based on a minimum 7-day running average, and the latter requiring a minimum flow of 800 to 1,200 cfs at Vernalis from February through June. (SED, at Appx. K, p. 18.) The WQCP states that the Tributary Flow Objectives will be adaptively adjusted to in order to implement the Narrative Objective (SED, at Appx K, p. 30.)</p>	Please refer to response to comment 3239-133.
3239	123	<p>Quantity needed to satisfy the Narrative Objective</p> <p>The Narrative Objective states, "Maintain inflow conditions from the San Joaquin River watershed to the Delta at Vernalis sufficient to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta. Inflow conditions that reasonably contribute toward maintaining viable native migratory San Joaquin River fish populations include, but may not be limited to, flows that more closely mimic the natural hydrographic conditions to which native fish species are adapted, including the relative magnitude, duration, timing, and spatial extent of flows as they would naturally occur. Indicators of viability include population abundance, spatial extent, distribution, structure, genetic and life history diversity, and productivity." (SED, at Appx. K, p. 18.)</p> <p>If the Narrative Objective is to be achieved only through the adaptive implementation of the Tributary Flow Objective and the Vernalis Flow Objective (SED, at 11-38 - 11-39), then the quantity of water needed to satisfy the Narrative Objective can only be determined through an examination of the two flow objectives.</p>	Please refer to response to comment 3239-133.
3239	124	<p>Quantity needed to satisfy the Tributary Flow Objective</p> <p>The Tributary Flow Objective requires 30% to 50% unimpaired flow from each of the Stanislaus, Tuolumne and Merced Rivers to be maintained from February through June, based on a minimum 7-day running average. (SED, at Appx. K, p. 18.) A plain reading of this objective requires nothing more than the maintenance of at least 30% unimpaired flow on each of the rivers, based on a minimum 7-day running average, provided that the unimpaired flow never exceeds 50% percent. However, the program of implementation in the WQCP indicates that the Tributary Flow Objective will be implemented by requiring a minimum of 40% unimpaired from each of the Stanislaus, Tuolumne and Merced Rivers, based on a minimum 7-day running average. (SED, at Appx. K, p. 29.)</p> <p>In spite of the quantitative nature of this objective, the SED does not focus on the volume of water necessary to meet it, but instead on the difference between the flows currently required in each of the three tributaries and the flows that would be required if the proposed objectives were satisfied. Specifically, the SED states that the long-term mean annual reduction in surface water supplies under a 40% unimpaired flow requirement would</p>	Please refer to response to comment 3239-133.

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		<p>be 293,000 acre feet. (SED, at ES-21.) While the reduction in surface supply is the focus of the SED, a thorough examination of the document reveals the total quantity of water necessary to meet the Tributary Flow Objective, assuming that the analysis in the SED is correct. The following tables [ATT35 - ATT38] shed light on the total amount of water needed to satisfy the Tributary Flow Objective at 40% unimpaired flow from February to June.</p> <p>While the table [ATT35] shows the cumulative distribution of flows, the estimated median unimpaired flow from February to June on the Merced River is 969 cfs in February, 1,303 cfs in March, 2,391 cfs in April, 3,955 cfs in May, and 2,451 cfs in June. (SED, at 5-19.) In terms of volume, the median amount would be 54,264 acre feet in February (969 cfs * 2 = 1,938 af/day * 28 days), 80,786 acre feet in March (1,303 cfs * 2 = 2,606 af/day * 31 days), 143,460 acre feet in April (2,391 cfs * 2 = 4,782 af/day * 30 days), 245,210 acre feet in May (3,955 cfs * 2 = 7,910 af/day * 31 days), and 147,060 acre feet in June (2,451 cfs * 2 = 4,902 af/day * 30 days), for a total median volume of 670,780 acre feet for February through June. At an unimpaired flow rate of 40%, the required median amount of water would be 268,312 acre feet.</p> <p>The estimated median unimpaired flow from February to June on the Tuolumne River [see ATT36] is 2,085 cfs in February, 2,566 cfs in March, 4,498 cfs in April, 7,343 cfs in May, and 5,648 in June. (SED, 5-23.) In terms of volume, the median amount would be 116,760 acre feet in February (2,085 cfs * 2 = 4,170 af/day * 28 days), 159,092 acre feet in March (2,566 cfs * 2 = 5,132 af/day * 31 days), 440,580 acre feet in April (7,343 cfs * 2 = 14,686 af/day * 30 days), 455,266 acre feet in May (7,343 cfs * 2 = 14,686 af/day * 31 days), and 338,880 acre feet in June (5,648 cfs * 2 = 11,296 af/day * 30 days), for a total median volume of 1,510,578 acre feet for February through June. At an unimpaired flow rate of 40%, the required median amount of water would be 604,231 acre feet.</p> <p>The estimated median unimpaired flow from February to June on the Stanislaus [see ATT37] is 1,251 cfs in February, 1,704 cfs in March, 3,247 cfs in April, 4,657 cfs in May, and 2,757 cfs in June. (SED, at 5-26.) In terms of volume, the median amount would be 70,056 acre feet in February (1,251 cfs * 2 = 2,502 af/day * 28 days), 105,648 acre feet in March (1,704 cfs * 2 = 3,408 af/day * 31 days), 288,734 acre feet in May (4,657 cfs * 2 = 9,314 af/day * 31 days), and 165,420 acre feet in June (2,757 cfs * 2 = 5,514 af/day * 30 days), for a total median volume of 629,858 acre feet. At an unimpaired flow rate of 40%, the required median amount of water would be 251,943 acre feet.</p> <p>The total quantity needed to meet the proposed Tributary Flow Objective is as follows: [see ATT38].</p> <p>The total median amount required from all the tributaries under a 40% unimpaired flow regime would be 1,124,486 acre feet (268,312 af [Merced], 604,231 af [Tuolumne], and 251,943 af [Stanislaus]).</p>	
3239	125	[ATT35: SJTA Table 3-1: Merced River cumulative distribution of unimpaired flows and 40% unimpaired 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.
3239	126	[ATT36: SJTA Table 3-2: Tuolumne River cumulative distribution of unimpaired flows and 40% unimpaired 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.

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3239	127	[ATT37: SJTA Table 3-3: Stanislaus River cumulative distribution of unimpaired flows and 40% unimpaired 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.
3239	128	[ATT38: SJTA Table 3-4: Cumulative distribution of unimpaired flows for all three tributaries combined and 40% unimpaired 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.
3239	129	<p>Quantity needed to satisfy the Vernalis Flow Objective</p> <p>Notwithstanding the Tributary Flow Objective, the Vernalis Flow Objective requires "a minimum base flow value between 800 - 1,200 cfs, at Vernalis . . . at all times during February through June." (SED, at Appx. K, p. 18.) The program of implementation states the Vernalis Flow Objective will be implemented by requiring a "base flow of 1,000 cfs, based on a minimum 7-day running average, at Vernalis at all times." (SED, at Appx. K, p. 29.) The program of implementation also states that "[w]hen the percentage of unimpaired flow requirements is insufficient to meet the minimum base flow requirement, the Stanislaus River shall provide 29 percent, the Tuolumne River 47 percent and the Merced River 24 percent of the additional total outflow needed to achieve and maintain the required base flow at Vernalis." (SED, at Appx. K, p. 29.)</p> <p>There are 150 days from February 1 to June 30, except during a leap year when there are 151 days. Using a conversion rate of 1 cfs equals 2 acre-feet/day, the quantity of water needed to meet the 1,000 cfs requirement is at least 300,000 acre feet (2,000 acre feet/day * 150 days = 300,000 acre feet). This number underestimates the amount of water necessary because it assumes no seepage or other losses between the release points on the Stanislaus, Tuolumne and Merced Rivers and the compliance point at Vernalis.</p>	Please refer to response to comment 3239-133.
3239	130	<p>Quantity needed to satisfy the October pulse flow objective</p> <p>The objectives also contain a requirement that a flow rate of 1,000 cfs be maintained at Vernalis in the month of October in all water years. (SED, at Appx. K, p. 18.) Using a conversion rate of 1 cfs equals 2 acre-feet/day, the quantity of water needed to meet the 1,000 cfs requirement is at least 62,000 acre feet (2,000 acre feet/day * 31 days = 62,000 acre feet). This number likely underestimates the amount of water necessary because it assumes no seepage or other losses between the release points on the Stanislaus, Tuolumne and Merced Rivers and the compliance point at Vernalis.</p>	Please refer to response to comment 3239-133.
3239	131	<p>Total Quantity needed to satisfy all the objectives</p> <p>Assuming that the flows from the Tributary Flow Objectives are sufficient meet the Vernalis Flow Requirement from February through June, and assuming that the Narrative Objective is achieved by the satisfaction of all the flow-related objectives, then the total quantity of water needed to satisfy the objectives will be equal to the sum of the amount required for the Tributary Flow Objective and the October pulse flow objective.</p> <p>The total median amount required to satisfy the Tributary Flow Objectives under a 40% unimpaired flow regime would be 1,124,486 acre feet. After adding the 62,000 acre feet required each year for the October pulse flow, the median amount required to satisfy the objectives would be 1,186,486 acre feet, or approximately 1.2 MAF. As an aside, it is noted that this number is not referenced anywhere in the SED. Instead, the reader is left to compute the number independently. This is a significant deficiency and should be rectified.</p>	Please refer to response to comment 3239-133.

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3239	132	<p>Instream Flow Incremental Methodology</p> <p>The results of the Instream Flow Incremental Methodology ("IFIM") conducted by USFWS also require releases of approximately 250 cfs, or approximately 500 acre feet/day, from each of the Stanislaus, Tuolumne and Merced Rivers during the remainder of the year, for a total of 1,500 acre feet per day from the three tributaries combined. Excepting the months of February through June, and October, there are 184 days in the remainder of the year. At a rate of 1,500 acre feet per day, the total amount of water required during the remainder of the year is approximately 276,000 acre feet. These contributions are in addition to the WQCP objectives.</p>	<p>Please refer to response to comment 3239-133.</p>
3239	133	<p>The State Water Board must decline to adopt the revisions to the WQCP under Article X, Section 2 of the Constitution because the analysis in the SED is insufficient to assess whether requiring 40% UIF (or 1.2 MAF) for the protection of beneficial uses constitutes a waste of water.</p> <p>The circumstances that must be considered when evaluating whether a particular use of water is reasonable (and not a waste) include the quantity of water needed for the beneficial use served. (see Lodi v. East Bay Municipal Dist, supra, 7 Cal.2d at 339-340 [releasing a large quantity of water to force a small quantity of water into the surrounding underground water table is a waste of water].) The SED does not provide any analysis of whether 40% unimpaired flow (or 1.2 MAF) from the Stanislaus, Tuolumne and Merced Rivers is needed to protect estuarine habitat (EST), cold freshwater habitat (COLD), warm freshwater habitat (WARM), migration of aquatic organisms (MIGR), spawning, reproduction, and/or early development (SPWN), wildlife habitat (WILD), or rare, threatened or endangered species (RARE).</p> <p>Instead, the document focuses on how the chosen amount of water (i.e., 40% unimpaired flow) can be used to inundate more land (ostensibly creating floodplain habitat for fall-run Chinook salmon) without simultaneously depleting reservoirs and adversely affecting instream water temperatures that could harm fall-run Chinook salmon. To the extent that the success of fall-run Chinook salmon can adequately serve as a proxy for protecting all the beneficial uses identified in the plan (a proposition that the SJTA rejects), the analytical approach in the SED is still backwards. It is apparent that Board staff chose the 40% unimpaired flow requirement first-- determining whether that amount of water was necessary to protect any of the beneficial uses--and then attempted to model a way in which that amount of water could be used without causing adverse impacts to instream temperatures that would harm fall-run Chinook salmon. (SED, at Appx. F1, p. F.1-12, F.1-13, F.1-31.)</p> <p>Although the SED acknowledges that requiring 40% unimpaired flow from February through June will deplete reservoirs and adversely affect instream water temperatures, the SED does not contain any analysis of whether a lesser amount of instream flow (such as 20% UIF) during above-normal or wet water years could achieve the same or better results for fall-run Chinook salmon by minimizing the drawdown on reservoirs. Instead, Board staff adhered to the 40% unimpaired flow requirement, and then attempted to mitigate the adverse effects of requiring such a large quantity of water for instream purposes by assuming the implementation of unrequired operational constraints, such as flow shifting, carryover storage and reservoir refill criteria.</p> <p>If the objectives require mitigation in order to avoid harmful effects to beneficial uses, then</p>	<p>Please refer to response to comment 3239-120 for a discussion of the State Water Board's determination of reasonableness.</p> <p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the justification for the LSJR plan amendments.</p> <p>Also, please refer to Master Response 3.1, Fish Protection, regarding the reasonable protection of fish and wildlife and the measurable benefits to aquatic resources from the plan amendments.</p>

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		<p>it is self-evident that the objectives are not protecting those beneficial uses. Moreover, if the same results could be achieved using less water in certain water years, then an objective which requires 40% unimpaired flow in all years would constitute a waste of water, at least to the extent that the same results could be achieved with a lesser amount. Without any analysis in the SED as to whether the same results could be achieved using less water, the Board cannot fulfill its constitutional obligation of ensuring that the objectives do not result in a waste of water. For this reason, the Board should decline to adopt the revisions to the WQCP which will require approximately 1.2 MAF of water.</p> <p>The 2010 Delta Flow Criteria Report provides an additional point of reference for assessing whether 40% unimpaired flow is necessary to protect the beneficial uses without resulting in a waste of water. The DFCR states that "[a]vailable scientific information indicates that average March through June flows of 5,000 cfs on the San Joaquin River at Vernalis represent a flow threshold at which survival of juveniles and subsequent adult abundance is substantially improved for fall-run Chinook salmon . . ." (2010 Flow Criteria Report, p. 119.)</p> <p>In the report, the San Joaquin River unimpaired flow was computed as "the sum of estimates from nine sub-basins in the watershed and are understood to represent the flow that would occur on the San Joaquin River at Vernalis. These nine sub-basins include the Stanislaus River at Melones Reservoir, San Joaquin Valley Floor, Tuolumne River at Don Pedro Reservoir, Merced River at Exchequer Reservoir, Chowchilla River at Buchanan Reservoir, Fresno River near Daulton, San Joaquin River at Millerton Reservoir, Tulare Lake Basin Outflow, San Joaquin Valley West Side Minor Streams." (2010 Flow Criteria Report, p. 97.)</p> <p>The average unimpaired flow at Vernalis for the months of February through June (1921-2003) was 529,000 acre feet (February), 668,000 acre feet (March), 929,000 acre feet (April), 1,467,000 acre feet (May), 1,117,000 acre feet (June), for a summed average amount of 4,710,000 acre feet over all five months. (2010 Delta Flow Criteria Report, p. 97; California Central Valley Flow Data, Fourth Edition Draft (May 2007), p. 45.)</p> <p>The Delta Flow Criteria report chose 60% UIF as a target because, at that rate of unimpaired flow, the average flow at Vernalis (in cfs) for the entire period of February through June is at, or above, 5,000 cfs in 85% of the water years. (2010 Flow Criteria Report, p. 119-122, Figure 20a.) In other words, the amount of water needed at Vernalis was determined first (5,000 cfs from February through June), then the percentage of unimpaired flow at which that flow rate could be achieved in most years was determined. An unimpaired flow of 60% would also meet or exceed 10,000 cfs from February to June in approximately 45% of years, which the report noted would be needed to achieve the doubling fall-run Chinook salmon in the San Joaquin Valley. (2010 Flow Criteria Report, p. 121, Figure 20a.) However, the report stated that additional information was necessary "to determine whether these flows could be lower or higher and still meet the Chinook salmon doubling goal in the long term." (2010 Flow Criteria Report, p. 121.)</p> <p>A review of some of the tables in the SED indicates that the DFCR goal of 5,000 cfs can be achieved at Vernalis with much less water than 40% unimpaired flow. For instance, under a 20% unimpaired flow regime, an average of 4,837 cfs (nearly 5,000 cfs) can be achieved at Vernalis at the 60% exceedance level and above. (SED, at Appx. F.1, Table F.1.3-6m, p. F.1-117.) Thus, in years where the unimpaired flow is at the 60% exceedance level and above, the 5,000 cfs target could be nearly achieved with a requirement of only 20% unimpaired flow on the three eastside tributaries. If the information in the 2010 Flow Criteria Report is</p>	

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		<p>correct that "[a]vailable scientific information indicates that average March through June flows of 5,000 cfs on the San Joaquin River at Vernalis represent a flow threshold at which survival of juveniles and subsequent adult abundance is substantially improved for fall-run Chinook salmon" (2010 Flow Criteria Report, p. 119), then the SED should have included an analysis of whether more than 20% unimpaired flow was necessary in wetter years where the total unimpaired flow is at the 60% exceedance level or above.</p> <p>Moreover, if 5,000 cfs at Vernalis from March through June will substantially improve survival and abundance of fall-run Chinook salmon, and if that flow can largely be achieved with a 20% unimpaired flow requirement, then requiring additional unimpaired flow, i.e., 30% to 50%, would constitute a waste and unreasonable use of water insofar as the additionally required flow is not needed to protect other beneficial uses. The absence of any analysis in the SED of whether the objectives can be achieved with less unimpaired flow under certain hydrologic conditions leaves the State Water Board without any way to assess whether requiring 40% unimpaired flow in all water years constitutes a waste of water, as the Board is required to do under Article X, Section 2 of the California Constitution.</p>	
3239	134	<p>Comparison of Other Potential Uses</p> <p>When evaluating whether a use of water is reasonable, there must be a comparison of the current or proposed uses with other potential uses of the same water. The mere fact "that a diversion of water may be for a purpose 'beneficial' in some respect . . . does not make such use 'reasonable' when compared with demands, or even future demands, for more important uses." (Imperial Irrigation Dist. v. State Wat. Resources Control Bd. (1990) 225 Cal.App.3d 548, 570-571.) This rule invokes the principle of diminishing marginal returns. For instance, assume it were reasonable to use 20% unimpaired flow from a river to help establish habitat that supports an annual return of 10,000 fall-run Chinook salmon.</p> <p>Further assume that requiring 40% unimpaired flow would help establish habitat that would support an annual return of an additional 15 fish. It is clear that the additional 20% unimpaired flow produces some benefit to fish and wildlife by ensuring the return of an additional 15 fish. However, in analyzing whether the 40% unimpaired flow requirement constitutes a waste of water under the principle of diminishing returns, the question presented would be whether requiring an additional 20% unimpaired flow to protect an additional 15 fish is reasonable considering the other demands being made upon that water.</p> <p>Apart from the beneficial uses that are identified as being protected by the Table 3 objectives, the WQCP also identifies the following beneficial uses in the plan area: municipal and domestic supply; industrial service supply; industrial process supply; agricultural supply; ground water recharge; navigation; recreation; shellfish harvesting; and commercial and sport fishing. (SED, at Appx. K, p. 10-11.). As explained below, the SED fails to properly analyze whether using 40% unimpaired flow to protect fish and wildlife beneficial uses is reasonable when compared to the other demands being made on the same water because the WSE model includes operational assumptions that are not required by the objectives.</p> <p>As such, the Board cannot assess--as it is required to do--whether requiring 40% unimpaired flow constitutes a waste of water. In any event, even if the operational assumptions included in the WSE were implementable as part of the WQCP, the modeling in the SED demonstrates that requiring 40% unimpaired flow would provide trivial incremental benefits to Central Valley fall-run Chinook salmon, and would constitute a waste of water</p>	<p>Please refer to response to comment 3239-120 for a discussion of the State Water Board's determination of reasonableness.</p> <p>Please refer to response to comment 3239-115 for a discussion of how the plan amendments consist of more than just the objectives and components such as adaptive implementation (e.g., flow shifting) and minimum reservoir carryover storage targets or other requirements (e.g., operations to maintain carryover storage) are also part of the plan amendments as described in Appendix K, Revised Water Quality Control Plan.</p> <p>Please refer to response to comment 3239-19 regarding the limitations of SalSim and why the State Water Board did not rely upon that model.</p> <p>Please refer to response to comment 3239 -74 for a discussion of the SED's conservative (i.e. more worst-case) approach to potential impacts to agricultural resources, as well as an explanation of groundwater pumping assumptions and consistency with SGMA.</p> <p>In addition, please refer to Master Response 3.2, Surface Water Analyses and Modeling, for additional information and responses to comments regarding Water Supply Effects modeling for the LSJR flow alternatives and why the additional analyses provided by SJTA and its member agencies do not reasonably represent implementation of the plan amendments.</p>

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		<p>when compared to the other uses that could be made of the water.</p> <p>The success of Central Valley fall-run Chinook salmon serve as a proxy in the SED for the protection of all beneficial uses identified as being protected by the revised objectives in Table 3. Accordingly, the benefits to fall-run Chinook salmon that result from using 40% unimpaired flow for instream purposes must be compared to the other beneficial uses that could be protected using the same water. The benefits to fall-run Chinook salmon are quantified using the computer model SalSim, as set forth in Chapter 19 of the SED. However, as with the rest of the analysis in the SED, the SalSim model incorporates various operational assumptions from the WSE model that are not required by the objectives, including carryover storage and flow shifting.</p> <p>As stated in Chapter 19, flows were modeled in SalSim using the same flow constraints as used in the WSE model. (SED, at 19-78). Thus, the SalSim modeling results referred to as SB20%UIF and SB30%UIF include carryover storage requirements that are not part of the objectives. (SED, at Appx. F1, p. F.1-36 - F.1-38). Similarly, the SalSim modeling results referred to as SB40%UIF, SB50%UIF and SB60%UIF include carryover storage requirements and flow shifting requirements that are not part of the objectives. (SED, at Appx. F1, p. F.1-36 - F.1-38).</p> <p>In addition, the SalSim model run referred to as SB40%MaxFS includes additional flow shifting outside the February through June period that is not required by the objectives, while SB40%OPP includes instream temperature targets that are not required by the objectives. (SED, at 19-80). As these model runs do not reflect a true implementation of the 40% UIF objective without unrequired operational constraints, the State Water Board has no information upon which to decide whether the use of 40% UIF to achieve incremental improvements to fall-run Chinook salmon populations constitutes a waste of water when compared to other beneficial uses that could be protected using the same water.</p> <p>In any event, the SalSim model results in the SED demonstrate that using 40% UIF to achieve trivial incremental benefits to fall-run Chinook salmon constitutes a waste of water when compared to the other beneficial uses that could be protected using the same water. The metric used in the SED to assess improvements in fall-run Chinook salmon is "total adult salmon production." (SED, at 19-81.) Production includes annual SJR Basin produced commercial and recreational harvest numbers, annual SJR Basin produced salmon that stray out of basin as adults, and total SJR Basin produced escapement (hatchery and in-river). (SED, at 19-81.)</p> <p>The SalSim results show that the benefits to salmon production of dedicating 40% UIF to instream uses are insignificant. Average annual production of Central Valley fall-run Chinook salmon is 707,598 (for the years 1976 through 2014). [Footnote 45: http://www.casalmon.org/PDFs/Chinookprod_CompleteDraft2015Reports6.30.16.pdf.] The SalSim analysis in the SED shows that dedicating 40% UIF to instream uses (SB40%UIF) will increase salmon production by 1,103 fish above baseline conditions. (SED, at 19- 84.) When compared to annual production of 707,598, this increase is a mere 0.15%, or less than a quarter of 1 percent. In other words, dedicating 40% UIF to instream uses will result in 15 additional fish for every 10,000 fish currently produced under baseline conditions each year.</p> <p>Even using the maximum flow shifting model results (SB40%MaxFS) which show the greatest incremental increase in salmon production, the results are still trivial. The anticipated increase in production under maximum flow shifting conditions is 4,139 fish</p>	

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		<p>over baseline. (SED, at 19-84.) Compared to the average annual production number for all Central Valley fall-run Chinook salmon of 707,598, the increase under maximum flow shifting is a mere 0.6%, or slightly more than onehalf of 1 percent.</p> <p>In contrast to these small incremental increases in production, the anticipated average reduction in water availability for agricultural purposes under 40% UIF is 293,000 acre feet annually, which is a 14% average annual reduction from baseline. (SED, at Appx. F1, p. F.1-69.) In dry and critically dry years, the average annual reduction in water supply jumps to 30% and 38%, respectively, below baseline water supply. (SED, at Appx. F1, p. F.1-72.) Notably, these calculations are based upon the assumption that the reduced surface water supply will be offset, in part, by groundwater pumping at maximum capacity. (SED, at 11-36 – 11-37.) Specifically, the analysis in the SED assumes that groundwater pumping will be used to meet the entire shortage in water surface supply up until the point that maximum groundwater pumping capacity achieved. (SED, at 11-37.)</p> <p>However, the SED recognizes that groundwater pumping at maximum capacity is not sustainable (SED, at 11-52), and thus the impact to water supply and agriculture in the SED is significantly understated. Nevertheless, when the average annual reduction in water supply of 14% is compared to the minimal increase in fall-run Chinook salmon of 0.15%, or even 0.6%, it is evident that raising the amount of water dedicated to instream uses from baseline to 40% UIF constitutes a waste of water. While the benefit to fall-run Chinook salmon is nearly imperceptible, the impact to water supply will be significant and will be felt by the agricultural community.</p> <p>The analysis provided by the SJTA in these comments is different than the State Water Board analysis. For comparison of other beneficial uses, the SJTA analysis is the correct analysis because it examines the 40% UIF and Vernalis base flows without additional operational assumptions that are not required by the objectives.</p> <p>As demonstrated in the table [ATT39], the real impact of the proposed project is significantly greater than reported in the SED. Just as the results from the SED make the case that the objectives will constitute a waste of water, the SJTA’s analysis makes an even stronger case.</p> <p>In the end, the analysis presented by the SJTA and its member agencies demonstrates that the proposed objectives will result in a waste and unreasonable use of water in violation of Article X, Section 2 of the California Constitution.</p>	
3239	135	[ATT39: Table summarizing WQCP impacts for the State Water Board and SJTA’s analyses.]	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.
3239	136	<p>June Flows</p> <p>The State Water Board has an obligation to set water quality objectives that (1) ensure the "reasonable protection of beneficial uses" considering all other demands being made on the waters involved (Water Code, § 13000, 13241), and (2) prevent waste or unreasonable use of water. (Cal. Const., art. X, § 2.) The Tributary Flow Objective and the Vernalis Flow Objective both require the release and/or bypass of water during the February through June period. (SED, at Appx. K, p. 18.) According to the Water Quality Control Plan, the purpose of these flows is to support and maintain the natural production of viable native San Joaquin River watershed fish migrating through the Delta. The plan makes this point clear by stating</p>	<p>As discussed in Master Response 3.1, Fish Protection, under current conditions, river flows are often very low and water temperatures are often very high during June in the San Joaquin Basin. These conditions are not suitable during many years for native fish, including juvenile salmonids migrating from the Stanislaus, Tuolumne, and Merced Rivers to the Bay-Delta or ocean. Despite poor historic flow and temperature conditions, historic fish monitoring data indicate the presence of important salmonid life stages emigrating during June in many years. This includes young-of-the-year steelhead and fall-run Chinook salmon smolts.</p> <p>Some commenters assert that June flows are unimportant. As described in Chapter 19 and Master Response 3.1, this assertion is incorrect. June flows are important in and of themselves for fish and wildlife in some years. The longer season allows fish additional time to rear and grow if temperature conditions are suitable.</p>

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		<p>that the flow objectives should be adaptively adjusted to achieve this goal. (SED, at Appx. K, p. 30.)</p> <p>The SED--which measures success by examining the impact of the flow objectives on fall-run Chinook salmon production and their habitat--fails to set forth any data, analysis or facts which would support the establishment of these flow objectives during the month of June. As explained below, the benefit of providing 40% unimpaired flow during June migration is minimal to nonexistent. The SED should have included an analysis of the Tributary Flow Objective running from February through May, so that the Board could compare the impacts of such a requirement with the impacts of a February through June requirement. In the course of the hearing process, SWB Staff presented the Board with additional information intended to demonstrate the impacts on water supply of requiring flows in June versus not requiring flows in June. The only information provided was the following graph [ATT40].</p> <p>Staff did not explain how the impacts reflected in this graphic were calculated. If Staff performed a modeling run where the Tributary Flow Objective was imposed from February-May, rather than February-June, then all of that information should be made available to the public and to the Board members. As indicated during the January 3, 2017 hearing, "staff agrees that to understand the effects of the proposal you need to understand more than just the long-term averages." (Transcript of Public Hearing before SWRCB, p. 45, Ins. 5-7.) The graphic above [ATT40], which only shows averages for each year type, is insufficient. Staff should provide all of the results from a February-May modeling run, including the cumulative distribution charts such as those shown in Table F.1.3-4(a)-(c), and the summary tables provided in Attachment 1 to Appx. F.</p> <p>Only by reviewing the results of a complete modeling for the February-May period can the Board determine whether requiring unimpaired flows of 40% during month of June is reasonable, as the Board is required to do under Water Code section 13241. As with all the other modeling runs that the Board should review, the February-May run should reflect a true 40% unimpaired flow requirement as directed by the objective, not a modified requirement with carryover storage, reservoir refill criteria, flow shifting and the other modeling constraints devised to mitigate the effects of the project.</p> <p>The SJTA provides the following information to demonstrate that there is no factual or scientific basis that requiring these flows in the month of June will assist in the migration of fall-run Chinook salmon, and that the objectives are therefore unreasonable considering the other demands made on the waters involved (Water Code, §§ 13000, 13241), and constitute a waste and unreasonable use of water. (Cal. Const., art. X, § 2.)</p> <p>Central Valley fall-run Chinook salmon exhibit two distinct outmigration strategies (Lindley 2009): [Footnote 46: Lindley S. T., Grimes C. B., Mohr M. S., Peterson W., Stein J., Anderson J. T., Botsford L. W., D.L. Bottom, C.A. Busack, T.K. Collier, J. Ferguson, J.C. Garza, A.M. Grover, D.G. Hankin, R.G. Kope P.W. Lawson, A. Low, R.B. MacFarlane, K. Moore, M. Palmer-Zwahlen, F.B. Schwing, J. Smith, C. Tracy, R. Webb, B.K. Wells, and T.H. Williams. What Caused the Sacramento River Fall Chinook Stock Collapse? NOAA Technical Memorandum. NOAATM- NMFS-SWFSC-447, 2009.] (1) fry migrants, which are typically the most abundant, migrate from the tributaries soon after emergence (i.e., January through March) to rear in the Delta; (2) smolt migrants remain near freshwater spawning areas for several months, migrating primarily from the tributaries during April and May and passing quickly (i.e., approximately seven days) through the Delta (SJRG 2011). [Footnote 47: San Joaquin River</p>	<p>The larger the fish the higher its survivability. In years when June flows are not suitable for fish rearing or migration, the volume of water represented by June flows can be very important if used to help shape flows between February and May, as is allowed under the program of implementation adaptive implementation element (b), if shifted to later in the year to prevent adverse impacts to fisheries as is allowed under adaptive implementation element (c), or both. For additional information regarding adaptive implementation under the program of implementation, please see Master Response 2.2, Adaptive Implementation. For additional information regarding the importance of June flows to adaptive implementation, please also see Master Response 3.2, Surface Water Analyses and Modeling.</p> <p>Please refer to response to comment 3239-120 for a discussion of the State Water Board's determination of reasonableness.</p> <p>Please refer to response to comment 3239-115 for a discussion of how the plan amendments consist of more than just the objectives and components such as adaptive implementation (e.g., flow shifting) and minimum reservoir carryover storage targets or other requirements (e.g., operations to maintain carryover storage) are also part of the plan amendments as described in Appendix K, Revised Water Quality Control Plan.</p>

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		<p>Group Authority [SJRGGA]. 2011. 2010 Technical Report: On implementing and monitoring of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan: Prepared by San Joaquin River Group Authority for California Water Resource Control Board. Available at http://www.sjrg.org.]</p> <p>Generalized timing of juvenile outmigration based on abundance estimates from rotary screw trap sampling in the Stanislaus and Tuolumne Rivers shows that in all but wet and above normal years, at least 99.3% of all juvenile salmon (i.e., fry, parr and smolts) migrate from late January through May, and 99.2% of smolts have migrated by May 31. (See SJTA Attachment 14, p. 3, Figure 1, Tables 1-5).</p> <p>During years of extremely high flows, such as during spring 1998 and 2006 when San Joaquin River flows at Vernalis were at or near flood monitor stage (approx. 22,000 cfs) or flood stage (approx. 34,000 cfs), smolt outmigration occurred later, with 90% of smolts migrating by June 5, 1998, and June 3, 2006 (See SJTA Attachment 14, p. 3, Figure 2). Since the proposed flow objective of 40% unimpaired flow will not reach these flood levels, the empirical data do not suggest that the proportion of smolts migrating during June will increase.</p> <p>These results are reflected in the SalSim model used by the State Water Board. Under the State Water Board's baseline, the juvenile outmigration numbers for the month of June are as follows: [see ATT41].</p> <p>Under the State Water Board's 40% unimpaired flow requirement, the June numbers would be as follows: [see ATT42].</p> <p>Almost all of the June smolt numbers can be explained by the Department of Fish & Wildlife's operations at the Merced River Hatchery. These are not the "natural" fish the objectives are designed to protect. (SED, at Appx. K, p. 18.) Also, in the last four years the Merced Hatchery has begun releasing almost all of their 1,500,000 smolts at Jersey Point, right next to Antioch. The SalSim model confirms the findings by FishBio that little to no Central Valley fall-run Chinook salmon migrate out in June.</p> <p>Comparing the SWB's Baseline run to the 40% UIF run, the results for June are as follows: [see ATT43].</p> <p>The numbers on the Stanislaus River go down. The numbers on the Tuolumne River essentially remain the same. The Merced River Hatchery accounts for the entire increase. All of the facts point to little or no smolt production on the Stanislaus River and Tuolumne River under Baseline, and the numbers remain the same even with 40% unimpaired flow in June. State Water Board Staff is well aware of this information.</p> <p>In the recently released scientific basis report for Phase II of the State Water Board's update to the Bay-Delta Plan, the Board included a figure [ATT44] demonstrating that approximately 90% of smolt outmigration on the San Joaquin River occurs by June 1. [Footnote 51: State Water Resources Control Board's Working Draft Scientific Basis Report for New and Revised Flow Requirements on the Sacramento River and Tributaries, Eastside Tributaries to the Delta, Delta Outflow, and Interior Delta Operations, Figure 3.4-10, p. 3-27; available at http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/2016</p>	

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		<p>1014_ph2_scireport.pdf.]</p> <p>As noted above, these are the fish that remained in the freshwater spawning areas after many fry migrants had already left. This data confirms the observations reported by FishBio that June outmigrants account for less than 1% of the overall outmigration on the San Joaquin River and its tributaries. (SJTA Attachment 14.) Furthermore, a recent article (Lehman et al. 2017) published in the Transactions of the American Fisheries Society provides support for the proposition that environmental and physical conditions in the Lower San Joaquin River for outmigrating salmon are extremely poor during June. [Footnote 52: SJTA Attachment 15.]</p> <p>This study examined the swimming capabilities of hatchery juvenile Chinook salmon under varying environmental conditions, both in a hatchery and field setting. Juvenile Chinook salmon from the Mokelumne River Hatchery were subjected to swimming trials using experimental swim tunnels and a mobile respirometer. The study found that swimming performance tended to decrease with increased water temperature and increased turbidity, specifically at temperatures over 19°C.</p> <p>The authors noted that this temperature threshold is similar to the temperature at which largemouth bass behavior and feeding is highest, and the reduced swimming performance could make Chinook salmon juveniles especially susceptible to predation. Water temperatures in the San Joaquin River and lower reaches of the tributaries during June are largely driven by ambient air temperatures, and regardless of flow, exceed 19°C during the majority of June. By June, the overwhelming majority of Chinook salmon have already migrated. Combined, this evidence supports focusing management actions earlier in the year (i.e., April/May) when environmental conditions can be managed to benefit smolt survival. (Attachment 15.)</p> <p>In sum, the scientific evidence demonstrates that--by June 1st--all fry migrants will have left the tributaries and lower San Joaquin River, and more than 90% of smolt migrants will have also left. The limited number of smolt migrants that may remain after June 1 will experience extremely poor environmental and physical conditions that cannot be improved by increased flow, such as warming water temperatures driven by ambient air temperatures and heightened predation activity by largemouth bass. State Water Board Staff is aware of this information and has even reported on it in the draft scientific basis report for the Phase II updates to the Bay-Delta Plan. Given this information, it is both unreasonable and a waste of water to require agricultural users to bypass/release 40% unimpaired flow during the month of June for the supposed protection of migrating Chinook salmon.</p>	
3239	137	[ATT40: SWB Slide No. 18, January 3, 2017 presentation. Graph of the June effect on diversions.]	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.
3239	138	[ATT 41: SJTA Table 4-1: SalSim juvenile count for June under SWB Baseline.]	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.
3239	139	[ATT42: SJTA Table 4-2: SalSim juvenile count for June under SWB 40% UIF.]	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.
3239	140	[ATT43: SJTA Table 4-3: Comparison of SWB Baseline and SWB 40% UIF.]	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.

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3239	141	[ATT44: SJTA Figure 4-1: Excerpted Figure 3.4-10 of SWRCB's Draft Working Scientific Basis Report for Phase II of the update to the Bay-Delta Plan.]	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.
3239	142	<p>The Proposed Project is unlawful because it violates the rules of water right priority.</p> <p>"California operates under a 'dual' or hybrid system of water rights which recognizes both doctrines of riparian rights and appropriative rights." (United States v. State Water Resources Control Bd., supra, 182 Cal.App.3d 82, 101.) "[A]ppropriation rights are subordinate to riparian rights so that in times of shortage riparians are entitled to fulfill their needs before appropriators are entitled to any use of the water." (Id. at 101-102.) Between appropriators, "the rule of priority is 'first in time, first in right' [where] [t]he senior appropriator is entitled to fulfill his [or her] needs before a junior appropriator is entitled to use any water." (Id at 102.) "Every effort . . . must be made to respect and enforce the rule of priority." (El Dorado Irr. Dist. v. State Water Resources Control Bd., (2006) 142 Cal.App.4th 937, 966.) The preservation of water right priority should be the "first concern" of the State Water Board in the exercise of its powers . . . (El Dorado, supra, 142 Cal.App.4th at 961, quoting Meridian, Ltd v. San Francisco (1939) 13 Cal.2d 424, 450.)</p> <p>To understand the issue of water right priority in the context of the regulation, one must first understand the fundamental difference between what was required in the 1995 WQCP/D-1641 and what is being presented in this proposed objective. In the 1995 WQCP, a flow objective was set at Vernalis. The flow at Vernalis could be met by accretions, bypass of flow, releases from storage, or some combination of all of the above. By contrast, the proposed flow objectives are solely based on bypassing the first 40% of the unimpaired flow at New Melones, New Don Pedro, and Exchequer. The objectives do not consider storage releases, nor accretions. Rather, the objectives are based solely on the unimpaired flow of the three rivers.</p> <p>Since proposed flow objectives are based on unimpaired flow, the implementation of such begins with riparians, then the most senior appropriators to most junior appropriator. It is a reverse priority objective. An example will make this point. [Footnote 53: This example is given with no upstream reservoirs or upstream appropriations.] If the UIF on the river in June is 500 cfs, for seven days, then the bypass downstream of the rim reservoir flow is 200 cfs. If the riparian demand exceeds 200 cfs, then the riparians must proportionally reduce their diversion to meet the flow requirement. If the riparian demand is fully met with the 200 cfs of flow, then senior appropriators can divert.</p> <p>While this example does not depict how the WQCP Objective would be implemented, it does show how the normal process of starting with cutting first is no longer applicable. Furthermore, the proposed objectives violate the rule of priority across the entire Delta watershed, and across the three eastside tributaries.</p>	<p>It is premature to object to the proposed amendments to the Bay-Delta Plan on the basis that they violate the rules of priority under California water law. (See Chapter 1, Introduction, for a discussion of water rights in California.) As discussed above, the proposed amendments to the Bay-Delta Plan have not yet been implemented by a water right decision amending specific water right permits and licenses, or by regulation. Thus, adjustments to water right priorities have not occurred and any challenge that the proposed amendments violate the rules of priority is therefore unripe. The proposed changes to the program of implementation identify future State Water Board processes, potentially both quasi-adjudicative and quasi-legislative, for implementing the water quality objectives in the Bay-Delta Plan. (Appendix K, Chapter IV, Program of Implementation.) Until the water quality objectives are implemented, any objection based on an alleged violation of the rules of priority is mere speculation. The State Water Board intends to fully meet all legal requirements when it implements the water quality objectives.</p> <p>Please refer to Master Response 1.2, Water Quality Control Planning Process, for additional discussion of why the proposed amendments to the Bay-Delta Plan do not violate the rules of priority under California water law.</p>
3239	143	<p>The entire Delta watershed must be considered for purposes of water right priority.</p> <p>The area to be protected by the Tributary Flow Objectives, the Vernalis Base Flow Objective, and the Narrative Objective extends across all three tributaries, through the San Joaquin River, and "in a larger area [past Vernalis], including within the Delta." (SED, at Appx. K, p. 28.) Despite the broad geographic area intended to be protected, these objectives (the LSJR flow objectives) only require contributions from the Stanislaus, Tuolumne and Merced Rivers.</p>	<p>Please refer to response to comment 3239-142.</p> <p>Please also see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the authority of the State Water Board to define the geographic scope of the plan.</p>

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		<p>Specifically, the Tributary Flow Objectives require 30% to 50% unimpaired flow on each of the three tributaries, with compliance points on tributaries themselves. (SED, Appx. K, p. 18.) The Vernalis Base Flow Objective requires flows of 800 to 1,200 cfs, which is to be provided from the Stanislaus, Tuolumne and Merced Rivers at certain percentages whenever the flows from the Tributary Flow Objective are insufficient to meet the base flow. (SED, at Appx. K, p. 29.) The WQCP also states that these objectives will be adaptively implemented to achieve the Narrative Objective. (SED, at Appx. K, p. 30.)</p> <p>Thus, although the objectives are intended to protect beneficial uses across the entire San Joaquin River watershed and through the Delta, the only water users responsible for ensuring those objectives are met are those who divert from the Stanislaus, Tuolumne and Merced Rivers. As demonstrated below, by requiring contributions from water right holders on the Stanislaus, Tuolumne and Merced Rivers, without requiring any contributions from other water right holders within the Delta watershed, the WQCP violates the rule of water right priority.</p> <p>Both the State Water Board and the courts have long recognized that the rule of water right priority applies to and among all water users within the Delta watershed when flows are required under a water quality control plan for the protection of the Bay Delta. For instance, when the State Water Board adopted Decision 1485, it required CVP and SWP operators to release water from storage or curtail diversions whenever the flow entering the Delta would otherwise be insufficient to meet the water quality standards in the 1978 Delta Plan. (El Dorado Irrigation Dist. v. State Water Resources Control Bd. (2006) 142 Cal.App.4th 937, 950, citing Decisions 1485 and 1584.)</p> <p>After the adoption of Decision 1485, USBR and DWR began protesting water right applications in the Delta watershed on the basis that (1) any diversion of water by a new applicant, i.e., a junior appropriator with respect to USBR and DWR, would require USBR and DWR to release more stored water to meet the Delta water quality objectives, and (2) the junior appropriator within the Delta watershed should share in the responsibility for meeting those objectives. (El Dorado, supra, 142 Cal.App.4th at 950.) To resolve this issue, the State Water Board adopted standard water right permit Term 91, which prohibits new permittees from diverting water whenever USBR or DWR are releasing water to meet Delta water quality standards. (Ibid.)</p> <p>Through Term 91, the Board effectively ensured that the water right priority system was upheld amongst water right holders throughout the Delta by precluding junior appropriators within the Delta watershed from diverting while USBR and DWR (the more senior appropriators) were releasing water to meet Delta water quality objectives. In other words, the Board recognized that water right priority must be analyzed on a Delta-watershed-wide basis whenever a water right holder is releasing or bypassing flows to satisfy Delta water quality objectives.</p> <p>Similarly, in El Dorado Irrigation Dist. v. State Water Resources Control Bd., the Third District Court of Appeal held that the State Water Board violated the rule of priority by including a Term 91 condition in a water right permit with a priority date of 1927 held by the El Dorado Irrigation District because the Board did not impose Term 91 conditions on other water right holders within the Delta watershed with priorities junior to El Dorado's priority. (El Dorado, supra, 142 Cal.App.4th at 964-965, 969.) As relevant here, the court applied the rule of priority across all water users in the Delta watershed.</p>	

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		<p>With respect to the revised WQCP designed to protect beneficial uses in the Bay Delta, the Board's decision to require contributions only from water users on the Stanislaus, Tuolumne and Merced Rivers, without requiring any contributions from other water right holders within the Delta watershed, particularly on the San Joaquin side of the Delta, constitutes a violation of the rule of water right priority.</p>	
3239	144	<p>Water users on the San Joaquin River, upstream of the confluence with the Merced River, are improperly exempted.</p> <p>The WQCP does not call for any contributions from water users on the San Joaquin River, upstream of the confluence with the Merced River. In fact, the upper San Joaquin River is entirely excluded from the Plan Area. (SED, at Figure 2-1b.) As the upper San Joaquin River is part of the Delta watershed, the WQCP violates the rule of water right priority by requiring that senior water right holders on the Stanislaus, Tuolumne or Merced Rivers contribute flows to benefit the Delta before any contributions are made from more junior water right holders on the upper San Joaquin River.</p> <p>The Friant Dam facilities located on the upper San Joaquin River are operated by USBR. The Friant Division alone comprises more than 30% of the average unimpaired flow in the San Joaquin River basin. (SED, at Table 5-2, p. 5-7 [1,732 TAF/5,665 TAF].) In June, due to the snowmelt run-off characteristic of the upper San Joaquin River, approximately 35% of the average unimpaired flow of the San Joaquin River Basin would come from Friant. (SED, at 5-16, 5-19, 5- 24, 5-27.) Apart from the San Joaquin River Exchange Contractors, the water users on the upper San Joaquin River are junior to the direct diversion rights of TID, MID, CCSF, OID and SSJID. In addition, the Kings, Fresno, and Chowchilla Rivers diversions are junior to TID, MID, CCSF, OID and SSJID's direct diversion rights.</p> <p>The SED acknowledges that USBR settled an 18-year legal dispute involving its operation of Friant Dam on the upper San Joaquin River. (SED, at 2-9.) Pursuant to the settlement agreement, USBR has agreed to release water from Friant Dam for the purpose of restoring flows on the upper San Joaquin River to the confluence with the Merced, a stretch of river which has run dry in many locations due to the operations at Friant. (SED, at 2-9; NRDC v. Rodgers (2005) 381 F.Supp.2d 1212, 1216.)</p> <p>Rather than incorporating these flows into its plan, or otherwise establishing a compliance point on the San Joaquin River upstream of the confluence with the Merced, the SED merely notes, "the amount of [water] observed [on the upper San Joaquin River] at the mouth of the Merced River is uncertain." (SED, at 2-9.) While such a statement may have had some persuasive power in 2012 when the SWRCB released its first SED for Phase 1 of its update to the Bay-Delta WQCP, the statement clearly has no such authority now. USBR began releasing flows from Friant Dam for the SJRRP in 2014, and recently petitioned the State Water Board to recapture some of those flows in the lower San Joaquin River. (State Water Board Order WR 2016-0017.)</p> <p>The U.S. Geological Survey operates a sensor on the San Joaquin River, immediately upstream of the confluence with the Merced River (SMN [sensor ID]). The mean daily flow at that location is reported on the California Data Exchange Center ("CDEC") and is readily available. To the extent water is needed in the main stem of San Joaquin River from Merced to Vernalis, contributions could come from Friant and could be easily monitored. [Footnote 54: For example, the 2017 flow schedule can be found at <a 214="" 524="" 916"="" 974="" href="http://www.restoresjr.net/download/ra-recommendations/rar2017/20170206_RA-Flow-</p> </td> <td data-bbox="> <p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the State Water Board's authority to define the geographic scope of the Bay-Delta Plan and how the fish and wildlife beneficial uses of the three salmon-bearing tributaries of the Lower San Joaquin River, the Stanislaus, Tuolumne, and Merced Rivers, have been affected by insufficient flows.</p> <p>The upper SJR refers to the portion of the San Joaquin River from the confluence of the Merced River upstream to Friant Dam and is not included in the plan amendments because it does not currently support salmon runs. The San Joaquin River Restoration Program (SJRRP) is intended to restore salmon to the Upper SJR. The State Water Board will evaluate the progress of the SJRRP and may consider water quality objectives above the San Joaquin River's confluence with the Merced River in future updates to the Bay-Delta Plan. Please refer to Master Response 1.1, General Comments, Chapter 3, Alternatives Description, and Appendix K, Revised Water Quality Control Plan, for additional information about the Upper SJR and SJRRP.</p> <p>Please refer to response to comment 3239-142 regarding why the plan amendments do not violate the rule of priority.</p> <p>Several changes were made to the LSJR flow objectives in Table 3 Water Quality Objectives for Fish and Wildlife Beneficial Uses (Table 3) of the Bay-Delta Plan. These changes were made for clarity and consistency and do not substantively change the LSJR flow objectives from the DRSED. These changes include revisions to the SJR Vernalis base flow objective in response to comments, including revisions to the description of the base flow objective in the program of implementation.</p> </p>	

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		<p>Schedule.pdf.]</p> <p>In sum, the failure to require contributions from water users on the upper San Joaquin River constitutes a violation of the rule of priority to the extent that water right holders on the three eastside tributaries hold more senior rights than those on the upper San Joaquin River.</p> <p>As an aside, it is unclear whether SJRRP flows that happen to reach Vernalis will be counted towards the Vernalis Base Flow Objective under the new WQCP. The plan states that "[w]hen the percentage of unimpaired flow requirement is insufficient to meet the minimum base flow requirement [at Vernalis], the Stanislaus River shall provide 29 percent, the Tuolumne River 47 percent and the Merced River 24 percent of the additional total outflow needed to achieve and maintain the required base flow at Vernalis." (SED, at Appx. K, p. 29.) Since the SJRRP flows are not part of the "unimpaired flow requirement," it is unclear whether those flows will be part of the sufficiency calculation for determining whether additional contributions are necessary from the three eastside tributaries. This issue needs clarification.</p>	
3239	145	<p>Westside Diversions along the San Joaquin River downstream of the confluence with the Merced River are improperly exempted.</p> <p>The map depicting the Plan Area excludes diverters on the west side of the lower San Joaquin River downstream of Merced River. (SED, at Figure 2-1a). The failure to include these diverters is problematic for two reasons: (1) the diverters on the west side of the San Joaquin River are junior to the water right holders in the Plan Area, and (2) there is no protection for the flows that are bypassed or released on the three eastside tributaries.</p> <p>First, the diverters on the west side of the San Joaquin River hold water rights that are junior to those held by TID, MID, CCSF, OID and SSJID. (Meridian, Ltd. v. San Francisco (1939) 13 Cal.2d 424.) As junior water right holders, the westside diverters should be required to bypass flows to meet the Vernalis Objective and to achieve the Narrative Objective before any contributions are required from the senior water right holders on the three eastside tributaries. In order to comply with the rule of water right priority, the WQCP must be revised to require contributions from the junior water right holders on the west side of the San Joaquin River before requiring any contributions from the senior water right holders on the eastside tributaries. In addition, the SED should be revised to include an analysis of how those contributions will impact the westside diverters. Currently, there is no analysis in the SED of westside diversion amounts, timing, or water rights. The document should be revised to address these omissions.</p> <p>Second, the failure to regulate or curtail diversions by junior water right holders on the west side of the San Joaquin River will likely result in upward adjustments to the UIF requirements of the Tributary Flow Objectives. The WQCP calls for adaptive adjustments to the Tributary Flow Objectives in order to "support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta." (SED, at Appx. K, p. 30.) In other words, the Tributary Flow Objectives will be continually adjusted for the ostensible purpose of achieving the Narrative Objective. (SED, at Appx. K, p. 18.)</p> <p>If the flows from the Tributary Flow Objectives are more than sufficient to meet the Vernalis Base Flow Objective, then westside diverters, and any other diverter downstream of the</p>	<p>The SJR west side tributaries do not support salmon populations and supply less than 1 percent of the available average unimpaired flow to the watershed. Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the authority of the State Water Board to define the geographic scope of the plan and protect flows, including up to and past Vernalis. The Vernalis base flow objective mandates additional flows when the required percent of unimpaired flow from the three tributaries is insufficient to reach 1,000 cubic feet per second at Vernalis. In other words, this is a condition that may occur in a critically dry year despite compliance with the numeric unimpaired flow objective.</p> <p>The assertions by the commenter that other water right holders will divert flows released to meet the Water Quality Control Plan is speculative and unsubstantiated. The State Water Board has the authority to protect the flows required to meet the Water Quality Control Plan through water right and water quality proceedings, including, potentially, a subsequent regulation. See Master Response 1.2, Water Quality Control Planning Process regarding the authority of the State Water Board to impose enforceable requirements.</p> <p>Please refer to response to comment 3239-142 regarding why the plan amendments do not violate the rule of priority.</p> <p>Please see response to comment 3239-89 regarding why the program of implementation is more specific than what a court has held is adequate under Water Code section 13242.</p>

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		<p>tributary compliance points, will be able to divert the flows bypassed/released by TID, MID, CCSF, OID and SSIID, at least insofar as those diversions will not cause noncompliance with the Vernalis Base Flow Objective. [Footnote 55: The SJTA is assuming in this example that the Board will prevent west side diverters from diverting water from the lower San Joaquin River if doing so would cause noncompliance with the Vernalis Base Flow Objective. The supposed method for imposing this restriction on west side diversions is the exercise of the Board's water right and water quality authority "to help ensure that the flows required to meet the LSJR flow objectives are used for their intended purpose and are not diverted for other purposes." (SED, at Appx. K, p. 28.)]</p> <p>Thus, if achieving the Vernalis Base Flow Objective is not sufficient to achieve the Narrative Objective, and if the Tributary Flow Objectives are supposed to be continually adjusted to achieve the Narrative Objective, then it is highly likely that the unregulated diversions by junior water right holders on the west side of the San Joaquin River will result in the need to increase the unimpaired flow requirements on the tributaries in order to ensure that the Narrative Objective is achieved. This is problematic because the junior water right holders on the west side of the San Joaquin River will be diverting water in such a way that requires even more contributions from senior water right holders on the eastside tributaries, thereby violating the rule of priority.</p> <p>The program of implementation (POI) suggests that the State Water Board may attempt to regulate these downstream diverters. Specifically, the POI states, "The State Water Board will exercise its water right and water quality authority to help ensure that the flows required to meet the Lower San Joaquin River flow objectives are used for their intended purpose and are not diverted for other purposes." (Appx. K Bay-Delta Plan, p. 28) However, the POI does not specify how the westside diverters will be regulated, nor does it indicate which objective, if any, would be implemented by such regulation, as is required in a WQCP. (Water Code, § 13242.)</p> <p>Notably, there is an unresolved legal question as to whether flows that are released in compliance with a WQCP objective are automatically protected from diversion by other users, or whether such flows are abandoned and available for diversion by others, such as water users in the Delta, absent protection under Water Code section 1707. This issue was raised in a complaint filed by the State Water Contractors with the SWRCB on June 16, 2015, alleging that diverters in the Delta south of the San Joaquin River are unlawfully diverting releases of SWP stored water. (STJA Attachment 16.) The State Water Board has yet to address this complaint. As the current WQCP raises the same issue, resolution is needed.</p> <p>There are several issues embedded in these fact patterns, all of which will require resolution: (1) is meeting a WQCP objective a beneficial use of water, (2) is water considered abandoned after it meets a WQCP objective, (3) if water is deemed abandoned after it satisfies a WQCP objective, how will it be determined whether the Narrative Objective is satisfied, and who will make such a determination, (4) what will prevent a downstream diverter from appropriating the water once it has met the WQCP objective on the tributaries, (5) if the San Joaquin River flow at Vernalis exceeds the minimum base flow objective, is the water released on the tributaries subject to diversion after it reaches the San Joaquin, (5) does the regulated water right holder bear the "burden" of depletions (natural and by diversion) when meeting the objectives. These are the legal issues that the State Water Board needs to address, but continues to ignore in this Bay-Delta Plan.</p>	

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3239	146	<p>CVP and SWP Exports in the South Delta are improperly exempted.</p> <p>Exports by the CVP and SWP pose the same water right priority issues as the westside diversions on the San Joaquin River. The State Water Board did no analysis of the fate of the San Joaquin River flow entering the Delta. The DSM2 model is available, but was not used by the SWB. Dr. Paulsen collaborated with Dan Steiner and used the SJTA 40% UIF run to determine San Joaquin River inflow under the proposed Tributary Flow Objective. Her analysis shows the fate of San Joaquin River inflow once it reaches the Delta in a below normal year (1966), a dry year (1968), and a critically dry year (1988). As shown in Table 5-1 [ATT45], when Delta inflow from the San Joaquin River increases under 40% unimpaired flow, there is a corresponding increase in exports by the CVP and SWP. (SJTA Attachment 6, p. 7, 17.)</p> <p>The SED recognized that Delta exports would increase by an average of 76,000 acre-feet annually under 40% unimpaired flow. (SED, at 5-78.) However, Dr. Paulsen’s analysis demonstrates that the increase could be significantly higher than the number reported in the SED when the WSE modeling constraints used by SWB Staff--such as carryover storage, refill criteria and flow shifting--are eliminated. For instance, exports would increase by 275 TAF in a below normal year such as 1996, by 178 TAF in a dry year such as 1968, and by 152 TAF in a critically dry year such as 1988.</p> <p>USBR and DWR, as operators of the CVP and SWP, are some of the most junior water right holders in the entire Bay-Delta system. It is a violation of water right priority to require senior water right holders on the three eastside tributaries to reduce diversions for the supposed benefit of fish migrating through the Delta, while simultaneously creating a situation that allows for additional diversions by the junior CVP and SWP operators in the Delta. Moreover, as noted above, only 1.3% of San Joaquin River inflow (from February 1-June 30) contributes to Delta outflow--even under 40% unimpaired flow. (SJTA Table 2-7.)</p> <p>In sum, water right priorities are once again turned on their head when the most senior water right holders must bypass water while the most junior water right holders in the Basin continue to divert unabated in higher quantities.</p>	<p>The Sacramento River watershed provides over eighty percent of the inflow to the Delta, contributing almost 23 million acre-feet. In contrast, the San Joaquin River watershed contributes about 4 million acre-feet, or around fifteen percent (DWR 2009). For this reason, Delta exports are largely driven by flows from the Sacramento River watershed and interior Delta flow requirements for the protection of fish and wildlife will be addressed as part of the instream flow requirement to reasonably protect fish and wildlife beneficial uses in the Sacramento River watershed, Cosumnes, Mokelumne, and Calaveras Rivers.</p> <p>See Chapter 5, Surface Hydrology and Water Quality, regarding the State Water Board’s current process of reviewing the export restrictions included in the 2006 Bay-Delta Plan as part of its periodic review of the plan (Section 5.4.2, Methods and Approach, Exports and Outflow).</p> <p>Please refer to response to comment 3239-142 regarding the rule of priority.</p>
3239	147	<p>[ATT45: SJTA Table 5-1: Summary of Delta Inflow, Exports and Outflow derived from SJTA Attachment 6.]</p>	<p>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.</p>
3239	148	<p>Other South Delta diverters are improperly excluded.</p> <p>According to the SWRCB’s data from the joint enforcement proceeding commenced against Byron-Bethany Irrigation District and West Side Irrigation District, which culminated in an order of dismissal in ORDER WR 2016-0015, average diversions in the San Joaquin Delta amount to 65,641 acre feet from February through June. (ENF01951 & ENF01949, Exhibit WR-51, Sheet - Delta Sr Combined 2015-06-15 [selected for San Joaquin Delta diverters only].)</p> <p>In order to adhere to the water right priority system, the State Water Board must consider what contributions, if any, must be made by south Delta diverters to protect San Joaquin River fish migrating through the Delta. Any diverters in the south Delta who have rights junior to those held by water right holders on the three eastside tributaries must contribute flows first. The creation of a plan which does not even contemplate contributions from</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the State Water Board’s authority to define the geographic scope of the Bay-Delta Plan and how the fish and wildlife beneficial uses of the three salmon-bearing tributaries of the Lower San Joaquin River, the Stanislaus, Tuolumne, and Merced Rivers, have been affected by insufficient flows.</p> <p>As described in the program of implementation, the State Water Board will exercise its water right and water quality authority to ensure that flows required to meet the LSJR flow objectives are used for their intended purpose and not diverted for other purposes.</p> <p>Please refer to response to comment 3239-142 regarding the rule of priority.</p>

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		south Delta diverters runs afoul of the rules of water right priority.	
3239	149	<p>Water right holders on Calaveras, Mokelumne, and Cosumnes Rivers are improperly excluded.</p> <p>It is not clear from the WQCP or the SED how water right holders on the Calaveras, Mokelumne, and Cosumnes Rivers will be addressed. As flows from these rivers contribute to the Delta, this omission should be corrected to ensure that water right holders on these rivers contribute in accordance with their water right priority.</p>	<p>See response to comment 3239-148.</p> <p>The LSJR includes the three salmon-bearing tributaries to the LSJR – the Stanislaus, Tuolumne, and Merced Rivers – and the mainstem of the LSJR between the confluence of the Merced River to Vernalis. The LSJR flow objectives to reasonably protect fish and wildlife beneficial are proposed because the 2006 Bay-Delta Plan water quality objectives on the SJR at Vernalis do not provide reasonable protection for fish and wildlife beneficial uses in the Stanislaus, Tuolumne, and Merced Rivers.</p> <p>The Calaveras, Mokelumne, and Cosumnes Rivers are tributary to the San Joaquin River but at a point downstream of Vernalis where the river is part of the tidally influenced Delta estuary. Therefore, the Calaveras, Mokelumne and Cosumnes cannot contribute to the flows necessary to reasonably protect the fish and wildlife beneficial uses in rivers that are upstream. For this reason requirements for flows and cold water habitat in the Sacramento River, its tributaries, and the eastside tributaries to the Delta (the Mokelumne, Cosumnes and Calaveras rivers) are being addressed in a separate proceeding.</p> <p>Please refer to response to comment 3239-142 regarding the rule of priority.</p>
3239	150	<p>Riparian water right holders are not analyzed.</p> <p>The SED assumes that riparian rights will not be affected by the WQCP. Specifically, the modeling in the SED assumed that "[r]iparian . . . demands are fully met, because these diverters are considered senior to appropriative ones." (SED, at Appx. F1, p. F.1-38.) This assumption is erroneous. The WQCP's requirement of 30% to 50% for instream uses could affect riparian water right holders if the remaining flow, i.e., 70% to 50%, were insufficient to meet all riparian demand. In such a scenario, riparian diverters would be collectively curtailed. While it may be unlikely that riparians will be curtailed, the likelihood is unknown because the SWB failed to analyze the issue. This error should be corrected.</p>	<p>Please see Master Response 3.2, Surface Water Analyses and Modeling regarding the modeling of streamflow and demand, including riparian diversions.</p> <p>As discussed in Master Response 1.1, General Comments, the State Water Board may consider changes to water rights and other actions to implement plan amendments as described in Appendix K, including adding conditions to existing water rights or taking other water right actions that would require some water right holders to not divert water when flows are required to meet the LSJR flow objectives.</p> <p>As discussed in Master Response 1.2, the Water Quality Control Planning Process, the State Water Board has broad authority under Article X, section 2, of the California Constitution, the public trust doctrine, and statutes over water rights to implement the plan amendments through water right actions, including actions involving riparian users and senior appropriators. All water rights, regardless of the basis of right, are subject to the constitutional reasonableness doctrine. (Cal. Const., art X, § 2; Light, supra, 226 Cal.App.4th at p. 1479.) The public trust doctrine prevents water users from acquiring a vested right to appropriate water in a manner harmful to public trust interests. (National Audubon, supra, 33 Cal.3d at p. 445.) The State Water Board may exercise its regulatory powers through either quasi-legislative or quasi-judicial proceedings. (See e.g., Light, supra, 226 Cal.App.4th at pp. 1472-1473 [in regulating the unreasonable use of water, the State Water Board can weigh the use of water for the protection of wildlife habitat against the commercial use of water by riparian users and early appropriators].)</p>
3239	151	<p>The WQCP provides protection to municipal supply without consideration of water right priority.</p> <p>The WQCP states that the Board will "take actions as necessary to ensure that implementation of the flow objectives does not impact supplies of water for minimum health and safety needs, particularly during drought periods." (SED, at Appx. K, p. 28.) To the extent that this provision of the program of implementation will prioritize municipal beneficial uses over other beneficial uses without respect to water right priority, it is unlawful. "[T]here is no legislative or judicial authority in California for the enforced advancing of the priority of an appropriation for one beneficial purpose over that of a prior</p>	<p>Please refer to response to comment 3239-142 for a discussion of why it is premature to object to the proposed amendments to the Bay-Delta Plan on the basis that they violate the rules of priority under California water law.</p> <p>In addition, while the priority system is a critical component of California water law, the rules of priority are not absolute. Certain overarching legal principles can override strict adherence to the water right priority system. (El Dorado Irrigation District v. State Water Resources Control Board (2006) 142 Cal.App.4th 937, 965-66 [citing reasonable use, public trust, and legislative declarations of priority as examples].) Any change in priority is constrained, however: "the subversion of a water right priority is justified only if enforcing that priority will in fact lead to the unreasonable use of water or result in harm to values protected by the public</p>

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		<p>appropriation for another beneficial purpose, either in time of water shortage or otherwise, without making due compensation." (Hutchins, California Law of Water Rights, p. 174.)</p> <p>The only mechanism by which the State Water Board can assign a higher priority to a later appropriation serving a more preferred beneficial use is through the imposition of permit terms and conditions on the earlier appropriation. (see Racanelli, supra, 182 Cal.App.3d at 132 [recognizing the very limited authority of the Board to impose permit conditions that give a higher priority to a more preferred beneficial use even though later in time].) Thus, where a water right is not based on a permit issued by the State Water Board or its predecessor agency, the Board has no authority to prioritize one beneficial use over another in violation of water right priority. (Young v. State Water Resources Control Bd. (2013) 219 Cal.App.4th 397, 404 ["the Water Board does not have jurisdiction to regulate riparian and pre-1914 appropriative rights"].) The Board's effort to effectuate such a prioritization in the WQCP constitutes a violation of the rule of water right priority.</p>	<p>trust." (Id. at p. 967.) Thus, to the extent the comments are based on argument that the State Water Board cannot impose conditions on water right permits requiring instream flows to meet water quality objectives that affect the order of priority, that objection is inconsistent with El Dorado Irrigation District. In El Dorado Irrigation District, the Court found a subversion of the rule of priority precisely because the State Water Board in that case did not treat all diverters with similar restrictions, and because the Board failed to provide sufficient justification for the subversion of priority. (Id. at pp. 969-71.)</p> <p>A water right proceeding to implement the plan amendments would generally follow the water right priority system and in accordance with applicable law. This could, for example, result in adding conditions to existing water rights or taking other water right actions that would prohibit some water right holders from diverting water when flows are required to meet the proposed flow objectives (Executive Summary, ES5.4, Effects of the Flow Proposal). Again, however, the State Water Board has yet to make any concrete decisions about which water right permits will be modified and what conditions will be attached. Once it gets to the implementation process, the State Water Board will carefully examine and balance the competing uses of water in reaching its decisions about how to implement the water quality objectives.</p> <p>As discussed in Master Response 2.1, Amendments to the Water Quality Control Plan, the program of implementation provides that the State Water Board will take actions as necessary to ensure that the LSJR flow objectives does not impact water supplies for minimum health and safety needs, particularly during droughts. This provision is in furtherance of the state's Human Right to Water policy, which declares that every human being has the right safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. (Wat., Code § 106.3). Please see Master Response 2.7, Disadvantaged Communities, for responses to comments regarding the human right to water and water code Section 106.3. Actions that the State Water Board may take include, but are not limited to, assistance with funding and development of water conservation efforts and regional water supply reliability projects and regulation of public drinking water systems and water rights.</p> <p>As discussed in Master Response 2.7, Disadvantaged Communities, consistent with Water Code section 106.3 and Resolution No. 2016-0010, the State Water Board has and will continue to consider the Human Right to Water in considering past, present, and probable future beneficial uses of water, including municipal beneficial uses, when considering adoption of the plan amendments in accordance with Water Code section 13241. The State Water Board is acutely aware of and sensitive to the water supply effects disclosed in the SED. In consideration of the Human Right to Water, the SED, Appendix K, Revised Water Quality Control Plan, states that the State Water Board "will also take actions as necessary to ensure that the implementation of the flow objectives does not impact supplies of water for minimum health and safety needs, particularly during drought periods."</p>
3239	152	<p>The WQCP violates the rule of water right priority amongst water right holders on the Stanislaus, Tuolumne, and Merced Rivers.</p> <p>Apart from violating the rule of priority by excluding all diverters on the San Joaquin River, the WQCP also violates the rule of priority by requiring certain percentage contributions from the Stanislaus, Tuolumne, and Merced Rivers whenever the Tributary Flow Objectives are insufficient to satisfy the Vernalis Base Flow Objective. Specifically, the program of implementation states, "[w]hen the percentage of unimpaired flow requirement is insufficient to meet the minimum base flow requirement, the Stanislaus River shall provide 29 percent, the Tuolumne River 47 percent and the Merced River 24 percent of the additional total outflow needed to achieve and maintain the required base flow at Vernalis." (SED, at Appx. K, p. 29.)</p> <p>These contribution percentages violate the rule of priority because they ignore the fact</p>	<p>Please refer to response to comment 3239-142 for a discussion of why it is premature to object to the proposed amendments to the Bay-Delta Plan on the basis that they violate the rules of priority under California water law.</p>

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		<p>water right holders on the Stanislaus, Tuolumne and Merced Rivers have different priority levels. The Board cannot require contributions in accordance with these percentages because they are not based on water right priority. The Board should decline to adopt the plan in its current form as it violates the rule of priority.</p>	
3239	153	<p>The Proposed Objective is unlawful because the State Water Board cannot regulate flow in the San Joaquin River tributaries through the Basin Plan covering the San Francisco Bay-Delta.</p> <p>The State Water Board developed the Bay-Delta Plan pursuant to its authorities under the Clean Water Act and the Porter Cologne Act. Under these two authorities, the purpose of a basin plan is to protect "water bodies and the beneficial uses of those water bodies." (City of Arcadia (2011) 191 Cal.App.4th 156, 178.) Further, Water Code section 13050 describes a water quality control plan as applying to only those beneficial uses "for the waters within a specified area." (Water Code, § 13050[.]) Thus, water quality control plans are developed to protect specific waters within a defined geographic scope.</p> <p>The Bay-Delta Plan specifically regulates the waters within the San Francisco Bay and the Delta Estuary. (SWRCB 1978 Bay-Delta Plan, at I-3 [stating the purpose of the plan was to "protect beneficial uses of Delta water supplies"]; SWRCB 2006 Bay-Delta Plan, at 1.) This includes the waters of the San Francisco Bay, the San Pablo Bay, the Suisun Bay, the water bodies of the interior Delta, the Sacramento River from the Delta up to the confluence of the American River, and the lower San Joaquin River from the Delta up to Vernalis. (SWRCB 2006 Bay-Delta Plan, at Figure 1.) Since its original adoption in 1978, the State Water Board has revised the Bay-Delta Plan several times. Through these revisions, however, the geographic scope and the beneficial uses to be protected have remained the same, consistent with guidance provided by Water Code section 13050. (See 1978 Bay-Delta Plan, at I-3; 1995 Bay-Delta Plan, at Figure 1; 2006 Bay-Delta Plan, at Figure 1.)</p> <p>The proposed project seeks to protect beneficial uses outside the geographic scope of the Bay-Delta Plan, and also proposes to completely change the geographic scope of the Bay-Delta Plan. The proposed geographic changes are unlawful for several reasons. First, the State Water Board did not notice the changes to the geographic scope and regulated waters. The State Water Board noticed its review of the Bay-Delta Plan on February 13, 2009 ("2009 NOP"). The 2009 NOP noticed the State Water Board was beginning its review of the San Joaquin River Flow Objective. The 2009 NOP did not provide notice the State Water Board planned to review the geographic scope of the Bay-Delta Plan or otherwise regulate waters outside the Bay-Delta Plan. The State Water Board revised the 2009 NOP by issuing a revised Notice of Preparation in 2011 ("2011 NOP"). The 2011 NOP did not notice the State Water Board was reviewing or amending the geographic scope of the Bay-Delta Plan, nor did it notice that it would be regulating waters not included in the Bay-Delta Plan.</p> <p>Second, the proposed changes to the geographic scope are significant and the Lower San Joaquin River Flow Objective no longer seeks to regulate the waters in the Bay-Delta. The waters regulated in the Bay-Delta Plan do not include the San Joaquin River upstream of Vernalis, nor the Stanislaus, Tuolumne, or Merced Rivers. Now, the WQCP proposes to regulate the San Joaquin River from its confluence with the Merced River to Vernalis, and the Stanislaus, Tuolumne, and Merced Rivers. Thus, the geographic scope and regulated waters of the existing Bay-Delta Plan are entirely different than the geographic scope and waters of the proposed project. Because the Bay-Delta Plan only regulates specific waters, the regulation of waters beyond the geographic scope of the Bay-Delta Plan cannot--and</p>	<p>Please see Master Responses 1.2, Water Quality Control Planning Process, regarding the scope of the Bay-Delta plan proceedings and Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the LSJR flow requirements and the program of implementation.</p> <p>The Notices of Preparation (NOPs) released by the State Water Board properly noticed the location of the project (i.e., geographic scope) pursuant to State CEQA Guidelines (Cal. Code Regs. tit. 14, § 15082[a]). Please also see Master Response 2.5, Baseline and No Project, for a discussion of the State Water Board's Notice of Preparation's sufficiency.</p> <p>The State Water Board released the NOP for Environmental Documentation for the Update and Implementation of the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary: Southern Delta Salinity and San Joaquin River Flows (2009 NOP) on February 13, 2009. The 2009 NOP identified the project location as "the Bay-Delta watershed and its upstream tributaries and any reservoirs for which water may be used to meet the water quality objectives, including upstream reservoirs and San Luis Reservoir."</p> <p>The State Water Board released the Revised NOP (2011 NOP) on April 1, 2011 to clarify the scope of State Water Board review of the southern Delta salinity and San Joaquin River flow objectives. The 2011 NOP updated the project title to "Update to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary: Water Quality Objectives for the Protection of Southern Delta Agricultural Beneficial Uses; San Joaquin River Flow Objectives for the Protection of Fish and Wildlife Beneficial Uses; and the Program of Implementation for Those Objectives" and specified the project location for the San Joaquin River Flow Objectives for the Protection of Fish and Wildlife Beneficial Uses as including "the watersheds of the three salmon bearing tributaries to the San Joaquin River: the Stanislaus, Tuolumne, and Merced Rivers down to the San Joaquin River near Vernalis." The 2011 NOP included detailed maps of the project area (i.e., geographic scope). Furthermore, NOP 2011 Attachment 2, Draft San Joaquin River Fish and Wildlife Flow Objectives Program of Implementation, described potential draft modifications to the Bay-Delta plan, including both narrative and unimpaired flow requirements for the Merced, Tuolumne, and Stanislaus Rivers.</p> <p>As discussed in Chapter 1, Introduction, Section 1.4.1, Porter-Cologne Act, Regional Water Boards have primary responsibility for adopting water quality control plans for their respective regions, subject to State Water Board and United States Environmental Protection Agency (USEPA) approval (Wat. Code, § 13240 et seq.). The State Water Board may also adopt water quality control plans, which will supersede regional water quality control plans for the same waters to the extent of any conflict (Id., § 13170).</p> <p>As discussed in Appendix K, Revised Water Quality Control Plan, a water quality control plan must establish beneficial uses (Wat. Code § 13050 (j)). The 17 beneficial uses to be protected by the 2006 Bay-Delta Plan were established in 1978 and 1991. Those same 17 beneficial uses are identified by the Central Valley Water Quality Control Plan for the Sacramento and San Joaquin River Basins as beneficial uses for the Merced, Stanislaus, and Tuolumne Rivers.</p> <p>As discussed in Master Response 1.1, General Comments, California has a multitude of water management challenges and necessary actions to address those challenges. The State Water Board is considering the amendments to the 2006 Bay-Delta Plan pursuant to the State Water Board's independent obligation and responsibility to protect the quality of the waters of the state to protect beneficial uses. The amendments to</p>

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		<p>should not--be performed through a review of the plan. (Water Code, § 13050.)</p> <p>Third, the proposed LSJR Flow Objective is no longer tied to a Delta benefit. In the 1978, 1995, and 2006 plans, the water quality objectives were directly tied to the protection of beneficial uses in the Delta. (1978 Bay-Delta Plan, at III-1 [protecting "beneficial uses in the Delta and Suisun Marsh"]; 1995 Bay-Delta Plan, at [protecting the "multitude of beneficial uses" served by the "waters of the Bay-Delta Estuary"]; 2006 Bay-Delta Plan, at 5 [developing a plan to protect the waters of "the Delta, Suisun Bay, and Suisun Marsh"].) The WQCP no longer proposes to protect beneficial uses of the Bay or Delta; instead, the revised regulations proposes to protect beneficial uses in "those portions of the San Joaquin River (SJR) Basin that drain to, divert water from, or otherwise obtain beneficial use (e.g., surface water supplies) from the three eastside tributaries." (SED, at 7-1.)</p> <p>The State Water Board attempts to tie the benefits of the proposed Tributary Flow Objective to a downstream Delta benefit, by including the Narrative Objective which mentions protection of San Joaquin River watershed fish migrating through the Delta. However, both the analysis performed in the SED and information provided by the SJTA demonstrate that little, if any, of the proposed releases will benefit the Delta and Bay at all. This is a complete departure from the previous Bay-Delta plans; the Tributary Flow Objective will not protect beneficial uses in the Delta and therefore is not truly an amendment to the Bay-Delta Plan or the former Lower San Joaquin River flow objective therein.</p> <p>Fourth, the reality is that the Tributary Flow Objective is a very focused and localized plan that is entirely contained in the Central Valley region and is the responsibility of the Central Valley Regional Water Quality Control Board. The Regional Water Quality Control Boards are responsible for developing water quality requirements for the water basins within their respective jurisdictions. (Water Code, § 13240 ["Each regional board shall formulate and adopt water quality control plans for all areas within the region"].) The State Water Board may develop statewide water quality regulations or water quality control plans spanning more than one basin. (County of Los Angeles v. California State Water Resources Control Board (2006) 143 Cal.App.4th 985, 1000; Water Code, § 13140.)</p> <p>The Bay-Delta Plan is a water quality control plan spanning more than one basin. However, unlike the Bay-Delta Plan, the Tributary Flow Objective does not span more than one basin. In fact, the proposed regulation is localized in the three tributaries to the San Joaquin River. For this reason, water quality regulation of the tributaries is the duty of the Regional Board, rather than the State Water Board. (Water Code, § 13240.) It is therefore unlawful for the State Water Board to attempt to reach outside the scope of the Bay-Delta Plan and regulate tributary flows outside the Bay-Delta area.</p> <p>The proposed plan is neither a Bay-Delta Plan, nor a basin plan. As the SED points out, the Delta will be dealt with later, namely in Phase II. Similarly, it is not a San Joaquin River basin plan, as the entire San Joaquin River watershed south of Merced is excluded, as is everything on the west side of the San Joaquin River. Essentially, the proposed project is a tributary instream flow determination which should have been developed in an entirely different process, as explained below.</p> <p>Pursuant to the Sacramento-San Joaquin Delta Reform Act of 2009, the Board was to submit to the legislature "a prioritized schedule and estimate of costs to complete instream flow studies for the Delta and for high priority rivers and streams in the Delta watershed . .</p>	<p>the 2006 Bay-Delta Plan are separate and distinct from any other program, plan, project, or proceedings within the State Water Board’s jurisdiction, or that of any other state, federal, or local agency, including the Sacramento–San Joaquin Delta Reform Act of 2009 (Delta Reform Act).</p> <p>The Delta Reform Act directed the State Water Board to submit to the legislature the “Instream Flow Studies for the Protection of Public Trust Resources: A Prioritized Schedule and Estimate of Costs” (Schedule) referenced in the comment. This was a separate and distinct process from the amendments to the 2006 Bay-Delta Plan, but it is worth noting that the Schedule identified the Merced, Stanislaus, and Tuolumne Rivers as “High Priority Rivers and Streams Tributary to the Sacramento River and Delta” rather than as “High Priority Rivers and Streams Outside the Sacramento River and Delta Watershed.”</p> <p>As discussed in Master Response 1.2, Water Quality Control Planning Process, the Delta Reform Act also required the State Water Board to develop the 2010 Delta Flow Criteria Report, which identified the volume, timing, and quality of flows under different hydrologic conditions that protect public trust resources in the Delta. This report, and subsequent scientific assessments, including those identified in Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, and in Master Response 3.1, Fish Protection, have shown that flows are important through the full geographic range of fish migration, and the Stanislaus, Tuolumne and Merced Rivers (individually or combined) have had larger reductions in natural production and returns from the ocean of adult fall-run Chinook salmon than any of the other tributaries (or combination of tributaries) to the Sacramento River or San Joaquin River when comparing the 1967–1991 and 1992–2010 time periods. As explained in Chapter 3, Alternative Description, the State Water Board focused on the three salmon-bearing tributaries (the Stanislaus, Merced, and Tuolumne Rivers), because that portion of the San Joaquin basin supports an existing fishery that can be maintained and improved. The State Water Board will consider additional measures to protect beneficial uses in other areas, such as the upper San Joaquin River, when those areas are restored and can support a fishery.</p>

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		<p>." (Water Code, § 85087.) The State Water Board’s initial list of high priority streams in 2010 included the Stanislaus, Tuolumne and Merced Rivers. (SWRCB, Instream Flow Studies for the Protection of Public Trust Resources, A Prioritized Schedule and Estimate of Costs; December 2010). [Footnote 56: Instream Flow Studies report available at http://www.waterboards.ca.gov/publications_forms/publications/legislative/docs/2011/instream_flow2010.pdf.]</p> <p>After creating the list of high priority streams, the State Water Board decided to abandon its effort to perform Instream flow/Public Trust proceedings on the three tributaries. Instead, the Board shifted to using the Bay-Delta Plan as a vehicle to get additional flows out of the three tributaries. Unfortunately for the State Water Board, this shift from a Public Trust proceeding to a Basin Plan/Water Quality Plan accounts for much that is wrong with the WQCP objectives.</p> <p>For these reasons, the Board should not adopt the proposed revisions to the Bay-Delta Plan, and should leave the development of water quality control plans for the San Joaquin River basin to the Regional Water Quality Control Board.</p>	
3239	154	<p>The Proposed Objective is unlawful because flow is not a water quality constituent that can be regulated through a water quality control plan.</p> <p>The Porter Cologne Water Quality Control Act establishes a comprehensive program for water quality control. Water quality control plans are developed pursuant to Porter Cologne authority and consist of three parts: (a) designation of beneficial uses, (b) water quality objectives, and (c) a program of implementation. (Water Code, § 13050[j].) The purpose of water quality objectives is to set the level of water quality constituents or characteristics for the reasonable protection of beneficial uses of water. (Water Code, § 13050[h]. Water quality means chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affect its use. (Water Code, § 13050[g].)</p> <p>Quantity of water is a descriptive term that reflects the amount of water, but it is not a characteristic of the water itself. Thus, flow is not water quality constituent or characteristic. The recent storm water case out of the United States District Court for the Eastern District of Virginia clarifies the distinction between water quality and water flows. (Virginia Department of Transportation v. United State Environmental Protection Agency (2013) 2013 U.S. Dist. LEXIS 981 ("VDot").)</p> <p>In the VDot matter, the Department of Transportation challenged the EPA’s regulation of storm water runoff through the Clean Water Act. Specifically, the Department of Transportation claimed that storm water is not a pollutant that can be regulated by the EPA. The Eastern District Court agreed and prohibited the regulation of storm water as a "surrogate" for water quality, rather than regulating pollutants directly. (VDot, at 9.) The Court understood the EPA’s storm water regulation was attempting to control water quality with flow, but the Court made clear that the EPA was required to regulate pollutants directly and had no authority to regulate the flow of water in an effort to control water quality. (Id.)</p> <p>Thus, applying the holding in VDot to the present matter, the State Water Board cannot regulate flow pursuant to the Clean Water Act because flow is not a water quality constituent. Because flow is not a water quality constituent, it cannot be regulated through a water quality control plan. For these reasons, the Tributary Flow Objective is unlawful and</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board authorities related to the water quality control planning process and the Porter-Cologne Water Quality Control Act.</p> <p>As noted by the commenter, water quality objectives identify chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water, along with levels or limits on those characteristics (Id., § 13050, subds. (g)-(h); see also State Water Resources Control Board Cases, supra, 136 Cal.App.4th at pp. 696-97). Flow is a physical characteristic of water that effects its use. US EPA regulations and the corresponding goals and provisions of the federal Clean Water Act (CWA) allow states to adopt narrative and (or) numeric criteria, including flow criteria, that address the physical and biological integrity of the Nation’s waters (see CWA sections 101 and 303(c); see also Title 40 of the Code of Federal Regulations (40 CFR) part 131.11(b)).</p>

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		<p>must be set aside.</p>	
3239	155	<p>The proposed amendments to the WQCP violate federal antidegradation policy.</p> <p>The Clean Water Act requires that a state’s water quality standards contain the following elements: (1) designated uses, (2) methods used and analysis conducted to support water quality standards revisions, (3) numeric or narrative water quality criteria sufficient to protect those designated uses, and (4) an antidegradation policy. (See 33 USCS § 1313[c][2][A]; Protection of Environment, 40 C.F.R. §§ 131.6; 131.11[a][1]; 131.11[b][1],[2]; 131.12.) With respect to the antidegradation policy, the EPA’s regulations require the state to "develop and adopt a statewide antidegradation policy" as well as "methods for implementing the antidegradation policy." (40 C.F.R. § 131.12[a][d]; Northwest Env’tl. Advocates v. United States EPA (Or. Dist. Ct. 2003), 268 F.Supp.2d 1255, 1264.) The federal policy requires that "existing instream water users and the level of water quality necessary to protect the existing uses . . . be maintained and protected." (40 C.F.R. § 131.12[a][1].)</p> <p>The State Water Board has adopted Resolution No. 68-16, entitled "Statement of Policy with Respect to Maintaining High Quality Waters in California." (SWRCB Resolution No. 68-16.) The Board has interpreted this resolution as incorporating the federal policy wherever federal policy applies under federal law. (SED, at 23-3.) By its own terms, the resolution "is to be followed in any of its water right or water quality actions." (Central Delta Water Agency v. State Water Resources Control Bd., (2004) 124 Cal.App.4th 245, 265.)</p> <p>Specifically, the resolution states, "[w]henver the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies." (SWRCB Resolution No. 68-16, ¶ 1.)</p> <p>As demonstrated below, the State Water Board has failed to perform the necessary analysis to determine whether the proposed amendments to the WQCP will comport with federal antidegradation requirements and Resolution No. 68-16. Currently, the 2006 Bay-Delta Plan requires the following minimum monthly average flow rate on the San Joaquin River at Vernalis: [see ATT46].</p> <p>Under the proposed amendments to the water quality control plan, these flow requirements would no longer be controlling. Instead, the controlling factors would be an unimpaired flow percentage of 30% to 50% from the three eastside tributaries (on a minimum 7-day running average), with a minimum base flow of 800 to 1,200 cfs at Vernalis, from February through June. (SED, Appx. K, p. 18.) Without providing any analysis as to whether the new flow requirements would result in more or less flow at Vernalis, or whether the new flow requirements would provide better water quality in the lower San Joaquin River or in any of the three eastside tributaries, the SED concludes that the proposed plan amendments "will likely result in water quality improvements in the San Joaquin River (SJR) Watershed and the southern Delta." (SED, at 23-2.)</p> <p>The only basis for this conclusion appears to be the State Water Board’s assertion "the flow objectives may be adjusted" as part of an adaptive management program if monitoring and "other best available scientific information indicates that such changes will be sufficient" to meet the narrative objective, i.e., that the changes will "support and maintain the natural</p>	<p>An antidegradation analysis is presented in Section 23.5 of Chapter 23, Antidegradation. The overall conclusion of the analysis is "The LSJR and SDWQ alternatives, as well as their implementation, are not expected to reduce water quality; rather, water quality will be maintained and generally improved." (chapter 23, page 23-28) Furthermore, please see Master Response 2.2, Adaptive Implementation, for a description and discussion of adaptive implementation.</p>

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		<p>production of viable native SJR Watershed fish populations migrating through the Delta . . ." (SED, at 23-4.) In other words, rather than performing the scientific analysis prior to proposing these changes to the WQCP to ensure that the amendments do not result in a degradation of water quality, the State Water Board has taken the position that the scientific analysis will be performed later, and in real-time, as part of implementing the plan. The failure to perform an antidegradation analysis to ensure that the proposed objectives do not result in a degradation of water quality is a dereliction of duty, and a violation of Resolution No. 68-16. `</p> <p>Furthermore, the State Water Board's adaptive management plan is so far-reaching that it would amount to an amendment of the proposed objectives. Specifically, the SED states that the initial 40% flow requirement set forth in the objectives might be changed (within the 30% to 50% range); that the flows may not be released on a 7-day running average of unimpaired flow, but instead on an "adaptive schedule" that does not coincide with a 7-day running average of unimpaired flow; and that the flow requirements may be "shifted" outside the February through June period for release later in the year, or in a subsequent year. (SED, at 23-4.)</p> <p>The latter two proposals are fundamental changes to the proposed objectives, which clearly and explicitly require the maintenance of a percentage of unimpaired flow on a minimum 7-day running average from February through June, and which do not require any releases outside of the February through June period. (SED, at Appx. K, p. 18.) While the Board has modeled the proposed objectives as if some version of these adaptive adjustments was in place (such as one method of flow shifting), it has not analyzed the broad range of flow scenarios that are permissible under the proposed adaptive adjustments to determine whether implementation of these changes would degrade water quality.</p> <p>As the SED does not demonstrate that the new objectives will not cause a degradation of water quality, the Board should decline to adopt the WQCP. Moreover, as the plan itself must contain an antidegradation policy under the Clean Water Act (See 33 USCS § 1313[c][2][A]), the State Water Board should decline to adopt the proposed amendments because they fail to comport with federal law and the requirements for EPA approval.</p>	
3239	156	[ATT46: SJTA Table 8-1. Vernalis base and pulse flows as reflected in Table 3 of the 2006 Bay-Delta Plan.]	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.
3239	157	<p>The Proposed Project is unlawful because it violates FERC's exclusive jurisdiction.</p> <p>The SJTA incorporates all of the comments submitted by Modesto Irrigation District and Turlock Irrigation District on the issue of FERC's exclusive jurisdiction.</p>	<p>The comment makes reference to comments submitted by other entities. To review responses to comments submitted by other entities within the comment period on the 2016 Recirculated Draft SED, please refer to the index of commenters in Volume 3 to locate the letter number(s) of interest.</p> <p>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. For information on State Water Board legislative or adjudicative powers involving water rights and water quality to require implementation of the water quality objectives, including use of Clean Water Act section 401 water quality certification authority associated with Federal Energy Regulatory Commission (FERC) hydropower licensing processes to implement the LSJR flow objectives, please see Master Response 1.2, Water Quality Control Planning Process.</p>
3239	158	The Proposed Objective is unlawful because the State Water Board failed to fully implement the 2006 Water Quality Control Plan objectives.	As discussed in Master Response 1.2, Water Quality Control Planning Process, water quality control plans must be "periodically reviewed and may be revised." (Wat. Code, § 13240); Clean Water Act (CWA) section 303(c) (33 U.S.C. § 1313(c)) requires a triennial review of state water quality "standards," which is ordinarily

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		<p>After adopting water quality objectives, the State Water Board is required to fully implement those objectives; failure to fully implement the objectives amounts to a de facto amendment without complying with the procedural requirements for amending a water quality control plan. (State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 734.) To date, the State Water Board has not fully implemented the SWRCB 2006 Bay-Delta Plan. USBR has repeatedly failed to comply with the flow requirements at Vernalis.</p> <p>In addition, the SWRCB 2006 Bay-Delta Plan includes several non-flow measures in its plan of implementation. These measures include installation of screening facilities on diversions, modification of existing commercial and sport fishing regulations, expansion of the illegal harvest program, improvement of hatchery programs, and expansion of gravel replacement and maintenance. (2006 Bay-Delta Plan, at 34-37.) The State Water Board did not include these measures as superfluous to the protection of beneficial uses; instead, the State Water Board characterized the non-flow measures as "necessary to achieve the objectives." (SWRCB 2006 Bay-Delta Plan, at 22.) Despite the necessity, these actions were never implemented.</p> <p>The proposed project seeks to create new flow requirements on the three eastside tributaries for the protection of fish and wildlife beneficial uses, without first determining whether the 2006 Bay-Delta Plan is sufficient to protect those same uses. Before the Board takes the drastic step of altering the 2006 Bay-Delta Plan to include geographic area never before included in the plan, the Board should implement the 2006 Bay-Delta Plan as written and determine whether it is sufficient to protect fish and wildlife beneficial uses. Having never fully implemented the 2006 Bay-Delta Plan, the Board simply cannot know whether the plan was sufficient or not.</p> <p>The State Water Board cannot continue to ask for increased flow and allow the non-flow measures from the 2006 Bay-Delta Plan to continue to be ignored. Before the State Water Board can change the Lower San Joaquin River Flow Objective, it must first implement the existing non-flow actions. (State Water Resources Control Bd. Cases, supra, 136 Cal.App.4th at 734.) Only after those actions are implemented, may the State Water Board review the existing flow objectives to determine if more flow is needed protect fish and wildlife.</p>	<p>combined with any review under state law. The Bay-Delta Plan was most recently revised in 2006. Neither the Porter-Cologne Act nor the CWA requires the State Water Board to fully implement a water quality control plan before making amendments.</p> <p>Please also see response to comment 3239-118.</p>
3239	159	<p>The proposed revisions to the Bay-Delta Plan violate the Clean Water Act.</p> <p>Section 303 of the Clean Water Act requires each state, subject to approval by the Environmental Protection Agency (EPA), to "institute comprehensive water quality standards" in order "to prevent water quality from falling below acceptable levels." (Pud No. 1 v. Wash. Dep't of Ecology (1994) 511 U.S. 700, 704, quoting EPA v. California ex rel. State Water Resources Control Bd. (1976) 426 U.S. 200, 205, n. 12; see 33 U.S.C. § 1313.) In establishing water quality standards, the states must consider the "use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and [navigation]." (33 U.S.C. § 1313[c][2].)</p> <p>The State Water Board has taken the position that regulation of water quantity, including the regulation of instream flow, is not a water quality standard under the Clean Water Act that is subject to EPA approval or enforcement. (SED, at Appx. K, p. 5; SJTA Attachment 12.) In the event the State Water Board changes its position, or in the event it is determined by a court that the State Water Board's position is incorrect, it is the SJTA's position that, for various reasons, the information in the SED is insufficient for the Board to conduct the necessary balancing required under the Clean Water Act for the setting of water quality</p>	<p>This comment does not provide a basis for modifying the plan amendments or raise significant environmental issues. Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board consideration of beneficial uses in the context of the water quality control planning process.</p>

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		standards.	
3239	160	<p>The Proposed Objectives are unlawful because they amount to an adjudicatory action without due process of law.</p> <p>The State Water Board is empowered to undertake both adjudicatory and regulatory functions in allocating water rights and protecting water quality. (Water Code, § 174.) Although the State Water Board possesses this dual authority, the two functions have "distinct attributes." (Racanelli, supra, 182 Cal.App.3d at 112.)</p> <p>The development of a water quality control plan is a regulatory function in which the State Water Board acts in a quasi-legislative capacity. (State Water Resources Control Bd. v. Office of Admin. Law (1993) 12 Cal.App.4th 697, 701-702 [amendments to the regional water quality control plan were "regulatory"]; (Ibid.) The State Water Board's review of the water quality objectives in the Bay-Delta Plan is also a quasi-legislative act. (Ibid.) ["In performing its regulatory function of ensuring water quality by establishing water quality objectives, the Board acts in a legislative capacity."])</p> <p>Water quality objectives are not self-effectuating; instead, the State Water Board must act separately to implement the actions delineated in the program of implementation. (Water Code, § 13242 [requiring a program of implementation to achieve the objectives].) Usually, the State Water Board implements the objectives by amending water rights. In contrast to developing water quality objectives, the State Water Board's amendment of water rights is an adjudicatory function. (Racanelli, supra, 182 Cal.App.3d at 113 ["in undertaking to allocate water rights, the Board performs an adjudicatory function"], citing Temescal Water Co. v. Dept. of Public Works (1995) 44 Cal.2d 90, 100-06.)</p> <p>Because property rights are at issue in an adjudicative water-right proceeding, the State Water Board is required to comply with Government Code section 11425.10, which provides due process protections such as directed notice, an opportunity to be heard, the ability to present and rebut evidence, and the right to cross examine. (Cal. Code Regs., tit. 23, § 648[b].) The same due process requirements are not required when the State Water Board acts in a legislative capacity, such as when the Board develops water quality objectives and amends a water quality control plan. (Gov. Code, § 11353.)</p> <p>As demonstrated below, the State Water Board's proposals for the Tributary Flow Objective and the Vernalis Flow Objective are framed so narrowly that they amount to an adjudication of the rights of OID, SSJID, TID, MID, and CCSF. Oakdale Irrigation District, South San Joaquin Irrigation District, Turlock Irrigation District, Modesto Irrigation District, and the City and County of San Francisco. By conducting this adjudication through the guise of a quasi-legislative action, i.e., an amendment to the water quality control plan, the State Water Board is violating the due process rights of the SJTA members.</p> <p>When developing water quality objectives, "the Board is directed to consider not only the availability of unappropriated water (Water Code, § 174) but also all competing demands for water in determining what is a reasonable level of water quality protection (Water Code, § 13000)." (Racanelli, supra, 182 Cal.App.3d at 118.) Similarly, the State Water Board 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." (Water Code, § 13241[c][emphasis supplied].)</p>	<p>The commenter seems to be confusing the Bay-Delta Plan's program of implementation to achieve the water quality objectives -- a component of the Plan required by the Porter-Cologne Act -- with the future implementation of the plan in a water right or water quality proceeding. These processes are distinct. For further discussion of the implementation of the plan amendments through water rights proceedings, please see Master Response 1.2, Water Quality Control Planning Process.</p>

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		<p>In Racanelli, the First District Court of Appeal held that the Board’s decision to establish water quality objectives for the Delta based on the amount of water available prior to the construction and operation of the CVP and SWP and facilities (collectively the "Projects"), known as the "without project" standard, violated these rules because the "Board considered only the water use of the Delta parties . . . and the needs of the customers served by the [P]rojects . . . [while] [n]o attention was given to water use by the upstream users." (Ibid.) In other words, the standard was set "only at a level which could be enforced against the projects." (Id. at 119.) The Racanelli Court stated that a "global perspective" of the available water resources was necessary. (Ibid. at 119.)</p> <p>The Court observed that the imposition of a "without project" standard upon the Projects themselves "represents one reasonable method" of achieving water quality control in the Delta, but the Court explained that the Board cannot satisfy its water quality planning obligations if it does not consider "other actions which could be taken to achieve Delta water quality, such as remedial actions to curtail excess diversions and pollution by other water users." (Ibid. at 120.)</p> <p>The State Water Board’s Tributary Flow Objective and Vernalis Flow Objective are unlawful for the same reasons that the "without project" standard in Racanelli was unlawful, namely, they target a select group of water users and ignore the possible contributions or actions of other water users. The State Water Board’s new flow proposal has a narrative objective and two numeric flow objectives. (SED, at ES-4; Appx. K, p. 18.)</p> <p>Both the narrative and numeric objectives purport to cover a broad geographic area that extends far beyond the locale of the three eastside tributaries that are identified as being the contributing resources for achieving those objectives. Specifically, the Narrative Objective states that inflow conditions from the "San Joaquin River watershed to the Delta" should be maintained at sufficient levels to support and maintain the natural production of viable native San Joaquin River watershed fish populations "migrating through the Delta." (SED, at Appx. K, p. 18.)</p> <p>Similarly, the program of implementation states, "[a]lthough the lowest downstream compliance location from the Lower San Joaquin River flow objective is at Vernalis, the objectives are intended to protect migratory Lower San Joaquin River fish in a larger area, including within the Delta . . ." (SED, at Appx. K, p. 28.) Despite the broad geographic scope of the objectives, which covers the entire San Joaquin River watershed through the Delta, the Tributary Flow Objective only requires the maintenance of an unimpaired flow percentage below the rim dams on each of the Stanislaus, Tuolumne and Merced Rivers. (SED, at ES-5; 1-1 - 1-2; Appx. K, p. 18.) [Footnote 57: The "plan area" in the SED is described as the Stanislaus River watershed from New Melones to the confluence of the San Joaquin River, the Tuolumne River watershed from New Don Pedro Reservoir to the confluence of the San Joaquin River, and the Merced River watershed from the Lake McClure to the confluence of the San Joaquin River, as well as the mainstem of the San Joaquin River between its confluence with the Merced River downstream to Vernalis. (SED, at 1-2.)]</p> <p>Likewise, the SED states that the Vernalis Flow Objective will be satisfied by releases from the Stanislaus, Tuolumne and Merced Rivers: "When the percentage of unimpaired flow requirement is insufficient to meet the minimum base flow requirement, the Stanislaus River shall provide 29 percent, the Tuolumne River 47 percent and the Merced River 24 percent of the additional total outflow to achieve and maintain the required base flow at</p>	

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		<p>Vernalis." (SED, at Appx. K, p. 29.)</p> <p>By only requiring the maintenance of unimpaired flow below the rim dams on each of the three eastside tributaries, and by only requiring contributions from the three eastside tributaries to meet the Vernalis Flow Objective, and by proposing to meet the Narrative Objective by adaptively adjusting the Tributary Flow Objective (SED, at Appx. K, p. 30), the State Water Board's proposed objectives are designed in such a way that they can only be enforced against water users who divert from the Stanislaus, Tuolumne and Merced Rivers, upstream of the compliance points on each of those rivers. The major water users on those rivers include the SJTA member agencies SSJID, OID, TID, MID, and the City and County of San Francisco. (SED, at 2-7, 2-18.)</p> <p>All of the water users upstream of the confluence of the Merced River with the San Joaquin River are notably exempt from this regulation, as are the water users on the westside of the San Joaquin River, and the water users on the Calaveras, Mokelumne and Cosumnes Rivers (SED, at Figure ES-1 [showing the Calaveras, Mokelumne and Cosumnes Rivers in the San Joaquin River Basin]). By exempting these water users and the resources available to them, the State Water Board has improperly ignored numerous water resources that should have been included in developing the objectives designed to protect "the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta." (SED, at Appx. K, p. 18.)</p> <p>Specifically, on the Upper San Joaquin River, the State Water Board has ignored Eastman Lake behind Buchanan Dam on the Chowchilla River (Storage Capacity: 150,000 acre feet [Footnote 58: Eastman Lake storage: http://cdec.water.ca.gov/cgi-progs/profile?s=BUC&type=res]), Hensley Lake behind Hidden Dam on the Fresno River (Storage Capacity: 90,000 acre feet [Footnote 59: Hensley storage: http://cdec.water.ca.gov/cgi-progs/profile?s=HID&type=res]), and Millerton Lake behind Friant Dam on the Upper San Joaquin River (Storage Capacity: 520,500 acre feet [Footnote 60: Millerton Lake storage: http://cdec.water.ca.gov/cgi-progs/profile?s=MIL&type=res]). (SED, at Figure 2-3.)</p> <p>The average annual unimpaired flow for the Upper San Joaquin River at Friant Dam is 1,702,000 acre feet, which, standing alone, "represents approximately 28 percent of the unimpaired flow on the SJR at Vernalis." (SED, at 2-9.) That figure of 28 percent does not include the resources on the tributaries further upstream on the Chowchilla and Fresno Rivers. The State Water Board did not consider, nor incorporate these resources, when setting the numeric requirements in the Tributary Flow Objective and the Vernalis Flow Objective.</p> <p>The State Water Board has also ignored the water users on the lower San Joaquin River that are downstream of the compliance points on each of the three eastside tributaries. These water users include, but are not limited to, the following: [see ATT47].</p> <p>Due to the location of these water users downstream of the compliance points, none can contribute to meeting the Tributary Flow Objective, and none are directed to contribute to the Vernalis Flow Objective, the latter of which is to be satisfied with flows from the Stanislaus, Tuolumne and Merced Rivers. (SED, at Appx. K, p. 29.) Although the SED indicates that these water users may be subject to conditions requiring them to curtail or cease diversions "when flows are required to meet the proposed flow objective," the WQCP does not identify these contributions as objectives, and fails to indicate how such a</p>	

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		<p>contribution might be achieved or implemented in the absence of an objective. (SED, at ES-23.)</p> <p>Similarly, the Plan Area also includes the Southern Delta, and rightfully so, because the San Joaquin River enters and supplies water to the Southern Delta. The WQCP only addresses salinity impacts to lands in the South Delta. There is no requirement that South Delta water users contribute to the flow objectives by curtailing diversions, or taking any other action, in order to achieve the objectives for fish and wildlife beneficial uses, despite the fact that the WQCP explicitly states that "the objectives are intended to protect migratory LSJR fish in a larger area, including within the Delta." (SED, at Appx. K, p. 28.)</p> <p>In summary, the Plan Area includes 806,547 total acres. (SED, at 11-11.) The amount of land in the entire San Joaquin River Hydrologic Region is approximately 3.73 million acres (SED, at 2-5), which leaves approximately 2.92 million acres of land that are not included, but which still fall within the San Joaquin River basin. [Footnote 62: The map in figure ES-1 does not accurately depict the San Joaquin River Basin. The San Joaquin River Basin also includes the Kings River Basin. (See Comprehensive Study of Sacramento and San Joaquin River Basins by U.S. Army Corps of Eng'rs, 2002, Appx. B, at 11-4,11-5; Turner v. James Canal Co., 155 Cal. 82, 91 [explaining that the Kings River and San Joaquin River are hydrologically connected through the Fresno Slough].)]</p> <p>When the hydrologically connected Kings River basin is added, the amount of land that is within the San Joaquin River basin that is not included in the plan increases even more. In addition, while the WQCP focuses on the seven water right holders identified in the table above, it excludes approximately 4,500 water right holders in the San Joaquin River Basin.</p> <p>By developing objectives that can only be achieved through the imposition of restrictions on a select group of water users and water right holders, the State Water Board has unlawfully "ignore[d] other actions which could be taken to achieve Delta water quality, such as remedial actions to curtail excess diversions . . . by other water users" and/or flow contributions from other water users within the system. (Racanelli, supra, 182 Ca.App.3d at 120.) The necessary "global perspective" which considers all available water resources is severely lacking here. (Racanelli, supra, 182 Cal.App.3d at 119.)</p> <p>The beneficial uses to be served must drive the objectives (Water Code, § 13241), not the ability of the State Water Board to obtain/regulate water right holders. (Racanelli, supra, 182 Cal.App.3d at 120 ["the Board compromised its important water quality role by defining its scope too narrowly in terms of enforceable water rights"].) As the objectives do not 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 State Water Board's proposed amendments to the water quality control plan are in violation of Water Code section 13241[c].</p> <p>Moreover, because the objectives area are so geographically limited and can only be implemented against a select number of water right holders, namely the SJTA member agencies who account for nearly all of the water directly diverted or stored from the Stanislaus and Tuolumne Rivers, it amounts to a de facto adjudication of the water rights of the SJTA member agencies. The water rights held by the SJTA member agencies are vested property rights that cannot be infringed upon or otherwise taken by governmental action without due process. (Racanelli, supra, 182 Cal.App.3d at 101; Ivanhoe Irrigation Dist. v. All Parties (1957) 47 Cal.2d 597, 623; U.S. v. Gerlach Live Stock Co. 339 U.S. 725, 752-54.) The</p>	

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		<p>Racenelli Court clearly explained that the regulatory function of adjudicating water rights is distinct from the quasi-legislative function of adopting water quality control objectives. (Racenelli, supra, 182 Cal.App.3d at 112.)</p> <p>By developing an objective which can only be achieved by imposing restrictions on a select group of water users, as was done against the SJTA members here and against the Projects in Racanelli, the Board has effectively exercised its adjudicatory authority over water rights. Having done so in the context of a quasi-legislative process, namely the development of a water quality control plan, the State Water Board has subverted numerous due process protections, including the requirements of providing directed notice, the opportunity to be heard, the ability to present and rebut evidence, and the right to cross examine. (Cal. Code Regs., tit. 23, § 648[b].)</p> <p>For these reasons, the State Water Board should decline to adopt the proposed amendments to the water quality control plan.</p>	
3239	161	[ATT47: SJTA Table 13-1, showing average annual demand of lower San Joaquin River water users.]	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.
3239	162	<p>The Salinity Standard is flawed because it improperly allocates all responsibility for salinity control at Vernalis to senior right holders on the Stanislaus, Tuolumne and Merced Rivers, contrary to the express findings of D-1641.</p> <p>Appendix K of the Draft 2016 SED states that increased flow from the Stanislaus, Tuolumne, and Merced Rivers will assist in achieving the southern Delta salinity objective: "In addition to the above requirements, the salinity water quality objective for the southern Delta will be implemented through the Lower San Joaquin River flow objectives, which will increase inflow of low salinity water into the southern Delta during February through June and thereafter under adaptive implementation to prevent adverse effects to fisheries. This will assist in achieving the southern Delta water quality objective." (Draft 2016 SED, Appx. K, at 45.)</p> <p>San Francisco collected decades of salinity data in the 1930s, 1940s and 1950s on the Tuolumne and lower San Joaquin Rivers in anticipation that increasing diversions and application of irrigation water would result in increased salinity in the San Joaquin River. The Department of Water Resources took over this monitoring effort in the early 1960s.</p> <p>State Water Board Decision 1641 ("D-1641") [Footnote 63: Revised Water Right Decision 1641, In the Matter of: Implementation of Water Quality Objectives for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary; A Petition to Change Points of Diversion of the Central Valley Project and the State Water Project in the Southern Delta; and A Petition to Change Places of Use and Purposes of Use of the Central Valley Project, December 29, 1999, Revised in Accordance with Order WR 2000-02, March 15, 2000, State Water Resources Control Board, available at http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/decisions/d1600_d1649/wrd1641_1999dec29.pdf.] contains findings regarding the source of salinity in the San Joaquin River that are consistent with this historic data:</p> <p>"10.2.1.1 EFFECTS OF UPSTREAM WATER DIVERSION AND USE</p> <p>"The largest diversions of water from the San Joaquin River and its tributaries are by (1)</p>	The flow objectives are intended to protect fish and wildlife beneficial uses on the Eastside tributaries. The additional flow will provide incidental benefit to salinity conditions in the southern Delta by reducing the salinity concentration of water flowing into the southern Delta. However responsibility for meeting the southern Delta salinity objectives is the responsibility of DWR and USBR as described in D-1641. Please see Master Response 3.3, Southern Delta Water Quality, for discussion of why the southern Delta Salinity objectives are being updated and the responsibilities of DWR and USBR.

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		<p>[United States Bureau of Reclamation ("USBR")] at New Melones Reservoir and Millerton Lake; (2) MID and TID at New Don Pedro Reservoir; and (3) [Merced Irrigation District ("Merced ID")] at Lake McClure. Additionally, the diversions into pipelines by the City and County of San Francisco from the Tuolumne River upstream of the Delta deplete Vernalis flows by 240 [TAF]. Taken together, these diversions have significantly reduced the flows in the San Joaquin River. Because of [Central Valley Project ("CVP")] diversions, alone, the flow of the San Joaquin River at Vernalis has decreased by 550 [TAF] per year on average with 345 [TAF] of this decrease occurring from April through September. The water diverted from the upstream tributaries to the lower San Joaquin River is of high quality. Thus, these diversions result in a substantial reduction in the assimilative capacity of the San Joaquin River.</p> <p>"Despite the reduction in the assimilative capacity of the San Joaquin River that results from upstream diversions, water users in the San Joaquin basin upstream of the Delta are not necessarily responsible for implementation of the southern Delta salinity objectives by virtue of their depletions. Water diverted by the upstream parties is put to beneficial use for purposes such as irrigation, hydropower generation, recreation, and fish and wildlife enhancement. These are reasonable and beneficial uses that contribute to ensuring that the State's water resources are put to beneficial use to the fullest extent of which they are capable. (See Cal. Const., art. X, § 2.) It has long been recognized that it is reasonable to expect that upstream development will eventually reduce the amounts of water available downstream. (Town of Antioch v. Williams Irrig. Dist. (1922) 188 Cal. 451.)</p> <p>"In Antioch, the California Supreme Court held that it would not be reasonable for an appropriator to enjoin upstream diversions so that sufficient flow would remain to hold back salt water from the ocean. The current situation is similar to the Antioch case with respect to the depletion of water, since Antioch indicates that it may not be reasonable to require junior water right holders, solely because of their depletions, to release or bypass extra water to dilute downstream salinity. In appropriate circumstances, of course, the SWRCB has authority to restrict diversions or require releases to protect water quality from seawater intrusion or loss of assimilative capacity. (United States v. State Water Resources Control Board (1986) 182 Cal.App.3d 82, 117 ("Whatever final conclusion is to be drawn from Antioch regarding the nature and extent of common law . . . rights to salinity control, existing constitutional and legislative authorities encompass the [SWRCB's] obligation to protect the quality of Delta waters.")) In this case, however, it is not necessary, and would not be reasonable, to require that depletions be reduced, since the water quality objectives can and should be attained through regulation of other controllable factors.</p> <p>"In this case, the depletions in the tributaries and the water right holders incurring the depletions are not the primary cause of salinity problems. Return flow from upstream diversions of water does not contribute significantly to the salt loading in the San Joaquin River. From 1977 through 1997, return flows from the Merced, Tuolumne and Stanislaus rivers contributed four, nine, and six percent, respectively, of the annual salt load of the river. Return flows from the upstream segment of the San Joaquin River also contribute little to the salt in the lower river. As discussed below, other factors contribute far more to the salinity concentrations in the southern Delta.</p> <p>"10.2.1.2 THE EFFECT OF DISCHARGES IN THE CVP SERVICE AREA ON VERNALIS SALINITY</p> <p>"Although water quality problems on the San Joaquin River began with the reduction of flows due to upstream development and the advent of irrigated agriculture, they were</p>	

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		<p>exacerbated with construction of the CVP. The CVP consists of 18 federally operated reservoirs and four reservoirs operated jointly with the DWR. The Delta-Mendota Canal and pumping plant first began operating in 1951. The San Luis Dam and the California Aqueduct were completed in 1967. [South Delta Water Agency's] witness testified that between 1930 and 1950 the average salt load at Vernalis was 750,000 tons per year. Between 1951 and 1997, the salt load has averaged more than 950,000 tons per year. Peak loads have exceeded 1.5 million tons per year following extended droughts. [Central Valley Regional Water Quality Control Board ("Central Valley RWQCB staff")] testified that from the 1960s onward there has been an increase in salt load and concentrations. The April through August salt load in the 1980s was 62 percent higher than the load in the 1960s and the corresponding annual load increase was 38 percent.</p> <p>"Central Valley RWQCB staff described geographic sources of salinity based on historical data from 1977 through 1997. The Central Valley RWQCB staff concluded that high salinity at Vernalis is caused by surface and subsurface discharges to the river of highly saline water. The sources of the discharges are agricultural lands and wetlands. Approximately 35 percent of the salt load comes from the northwest side of the San Joaquin River, and approximately 37 percent of the salt load comes from the Grasslands area. These areas receive approximately 70 percent of their water supply from the CVP, 20 percent from precipitation and 10 percent from groundwater. The [total dissolved solids ("TDS")] concentration of agricultural drainage water from the Grasslands area that discharges to the river through Mud Slough is approximately 4,000 [milligrams per liter "mg/l"]. In some cases, drainage water is more than ten times the concentration of the Vernalis salinity standard. . . .</p> <p>"Based on the above discussion, the SWRCB finds that the actions of the CVP are the principal cause of the salinity concentrations exceeding the objectives at Vernalis. The salinity problem at Vernalis is the result of saline discharges to the river, principally from irrigated agriculture, combined with low flows in the river due to upstream water development. The source of much of the saline discharge to the San Joaquin River is from lands on the west side of the San Joaquin Valley which are irrigated with water provided from the Delta by the CVP, primarily through the Delta-Mendota Canal and the San Luis Unit. The capacity of the lower San Joaquin River to assimilate the agricultural drainage has been significantly reduced through the diversion of high quality flows from the upper San Joaquin River by the CVP at Friant. The USBR, through its activities associated with operating the CVP in the San Joaquin River basin, is responsible for significant deterioration of water quality in the southern Delta. . . ."</p> <p>(D-1641, at 80-82 [citations omitted].)</p> <p>In response to these findings, D-1641 appropriately allocated responsibility to the CVP for meeting the Vernalis salinity standard: "The USBR's actions have caused reduced water quality of the San Joaquin River at Vernalis. Therefore, this order amends the CVP permits under which the USBR delivers water to the San Joaquin basin to require that the USBR meet the 1995 Bay-Delta Plan salinity objectives at Vernalis." (Id. at 86.)</p> <p>The contribution of west side lands to San Joaquin River salinity is thus well known to the State Water Board, yet the Draft 2016 SED simply defers action with regard to reducing these discharges, contrary to the conclusion in D-1641 that salinity control "can and should be attained through regulation of other controllable factors," i.e. prevention of the discharges in the first place. (D-1641, at 81.) While Appendix K acknowledges ongoing drainage reduction processes such as the San Luis Unit Feature Reevaluation Project and the</p>	

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		<p>San Joaquin River Realtime Salinity Management Program, (see Draft 2016 SED, Appx. K, at 49-50), there is no acknowledgement that these programs have failed to significantly reduce salinity loading by west side agriculture into the San Joaquin River. Given the considerable resources that have been spent over the years on these programs, it makes no sense to disregard these efforts. The SWB even concludes that if these programs are successful, then additional regulatory measures would be unnecessary.</p> <p>Instead, the Draft 2016 SED effectively shifts the economic burden of salinity reduction to senior rights holders on the three San Joaquin River tributaries by taking their water to solve the problem. The "main objective" of the San Joaquin River Real-time Salinity Management Program is to "control and time the releases of wetland and agricultural drainage to coincide with periods when dilution flow is sufficient to meet the Vernalis salinity objectives." (Draft 2016 SED, Appx. K, at 50.) The implication here is that "the solution to pollution is dilution," i.e. increased flows from the three tributaries will be used to avoid solving the drainage problem because higher flows will allow greater discharge of high salinity drain water from wildlife refuges and from west side agricultural land, without answering the basic question of whether it is reasonable to conduct irrigated agriculture on lands that are responsible for over 70-percent of the salt loading in the San Joaquin River without a feasible disposal option.</p> <p>The bottom line is that the State Water Board is not following the process described in D-1641: "In the absence of an agreement, the SWRCB's approach to allocating responsibility would be to fashion an allocation that it believes mitigates the water right holders' impacts on salinity and flow related impacts on the Bay-Delta Estuary. Such an approach would include consideration of the factors discussed in California Constitution, Article X, section 2, the public trust doctrine, and applicable statutes, in addition to providing a reasonable method of calculating the responsibilities of the water right holders." (D-1641, at 12-13, fn. 13.)</p> <p>By not including the west side tributaries of the San Joaquin River in the Draft 2016 SED, the State Water Board cannot accomplish the approach set forth in D-1641 for allocation of responsibility based on relative contributions toward the problem of San Joaquin River salinity.</p>	
3239	163	<p>The SED fails to comply with the requirements of CEQA and the Board should not adopt it.</p> <p>The proposed amendments to the WQCP are a discretionary action of a state agency and therefore subject to environmental review pursuant to the California Environmental Quality Act (CEQA). The Board acknowledges the Proposed Project is required to comply with CEQA. (SED, at ES-1.) The water quality control planning program is a certified regulatory program under which CEQA allows the State Water Board to prepare an SED in place of an environmental impact report. (Cal. Code Regs., tit. 14, § 15251; Cal. Code Regs., tit. 23, § 3775.) Although the environmental review is being performed pursuant to an SED, the review remains "subject to the broad policy goals and substantive standards of CEQA." (City of Arcadia v. State Water Resources Control Board (2006) 135 Cal.App.4th 1392, 1422 ("City of Arcadia").)</p> <p>The draft Staff SED is fundamentally flawed and does not comply with CEQA. The following comments set forth the flaws of the SED.</p>	<p>Please see Master Response 1.1, General Comments, for a discussion regarding the approach to the environmental analysis including, but not limited to, the project description, the use of a Substitute Environmental Document to meet California Environmental Quality Act requirements, and the application of the substantial evidence standard.</p> <p>Please see response to comment 3239-165 regarding the sufficiency of the project description.</p> <p>Please also see Chapter 4, Introduction to Analysis, Section 4.3, Analytical Framework, for a discussion of the SED's approach to reasonably foreseeable methods of compliance.</p>

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		<p>Standard of Review</p> <p>The California Environmental Quality Act, Pub. Res. Code, § 21000 et seq. ("CEQA"), requires a governmental agency to evaluate the environmental impacts whenever it considers approval of a discretionary project. (California Sportfishing Protection Alliance v. State Water Resources Control Bd.) (2008) 160 Cal.App.4th 1625, 1642). The purpose of environmental review is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, environmental review protects not only the environment but also informed self-government. (Napa Citizens for Honest Government v. Napa County Bd. of Supervisors (2001) 91 Cal.App.4th 342, 355.)</p> <p>An accurate, stable and finite project description is essential for an informative and legally sufficient environmental review. (County of Inyo v. City of Los Angeles (1977) 71 Cal.App.3d 185, 193.) "[O]nly through an accurate view of the project may the public and interested parties and public agencies balance the proposed project's benefits against its environmental cost, consider appropriate mitigation measures, assess the advantages of terminating the proposal and properly weigh other alternatives." (City of Santee v. County of San Diego (1989) 214 Cal.App.3d 1438, 1454.)</p> <p>Judicial review of CEQA analyses of non-adjudicative decisions extends only to whether there was a prejudicial abuse of discretion: "an agency may abuse its discretion under CEQA either by failing to proceed in the manner CEQA provides or by reaching factual conclusions unsupported by substantial evidence." (Save Tara v. City of West Hollywood (2008) 45 Cal.4th 116, 131, as modified (Dec. 10, 2008) [citing Pub. Res. Code, § 21168.5].)</p> <p>"[T]he ultimate decision of whether to approve a project, be that decision right or wrong, is a nullity if based upon an EIR [environmental impact report] that does not provide the decisionmakers, and the public, with the information about the project that is required by CEQA. The error is prejudicial if the failure to include relevant information precludes informed decision making and informed public participation, thereby thwarting the statutory goals of the EIR process." (Napa Citizens for Honest Government, 91 Cal.App.4th at 355-356 (citation omitted) (internal quotation omitted); see also California Oak Foundation v. City of Santa Clarita (2005) 133 Cal.App.4th 1219, 1237 [citing Concerned Citizens of Costa Mesa, Inc. v. 32nd Dist. Agricultural Assn. (1986) 42 Cal.3d 929, 935].)</p> <p>Similarly, CEQA's purpose to facilitate informed decision making and public participation is contravened when important information is "scattered here and there in EIR appendices," or significant analyses are "buried in an appendix." (California Oak Foundation, 133 Cal.App.4th at 1239 (citing Santa Clarita Organization for Planning the Environment v. County of Los Angeles (2003) 106 Cal.App.4th 715, 723.) Information that cannot be found or is not readily accessible is not a substitute for a good faith reasoned analysis. (Id.)</p> <p>For purposes of CEQA, "[s]ubstantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." (Cal. Code Regs., tit. 14, § 15384[b].) "Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate, or evidence of social or economic impacts which do not contribute to or are not caused by physical impacts on the environment does not constitute substantial evidence." (Cal. Code Regs., tit. 14, § 15384[a].)</p> <p>"In lieu of the requirement for preparing an EIR or negative declaration, CEQA provides a</p>	

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		<p>mechanism for the exemption of certain regulatory programs which themselves require a plan or other written documentation containing environmental information." (City of Sacramento v. State Water Resources Control Bd. (1992) 2 Cal.App.4th 960, 973-74, as modified (Feb. 14, 1992) (citing Pub. Res. Code, § 21080.5(a); Wildlife Alive v. Chickering (1976) 18 Cal.3d 190, 196.) The State Water Board's water quality control planning program is a certified regulatory program and thus a substitute environmental document, or "SED," may be prepared in lieu of an EIR. (Draft 2016 SED, at 1-3 (citing Pub. Res. Code, § 21080.5(c); Cal. Code Regs., tit. 14, § 15251[g].)</p> <p>An SED, like an EIR, must still comply with CEQA requirements. Specifically, all conclusions must be supported with substantial evidence in the administrative record. (Cal. Code Regs., tit. 23, § 3777[a].) An SED must include: "identification of any significant or potentially significant adverse environmental impacts of the proposed project;" "analysis of reasonable alternatives to the project and mitigation measures to avoid or reduce any significant or potentially significant adverse environmental impacts;" and "environmental analysis of the reasonably foreseeable methods of compliance." (Cal. Code Regs., tit. 23, § 3777[b][2-4]; Cal. Code Regs., tit. 14, § 15187[b]-[c].) The environmental analysis of the reasonably foreseeable methods of compliance "shall take into account a reasonable range of environmental, economic, and technical factors, population and geographic areas, and specific sites" at a program level. (Cal. Code Regs., tit. 23, § 3777[c].)</p> <p>The SED is also required to comply with the requirements of Public Resources Code Section 21159, that provides an agency "shall perform, at the time of the adoption of a rule or regulation requiring . . . a performance standard . . . an environmental analysis of the reasonably foreseeable methods of compliance." (Pub. Res. Code, § 21159(a).) The required environmental analysis must, at a minimum, include: "[a]n analysis of the reasonably foreseeable environmental impacts of the methods of compliance;" "[a]n analysis of reasonably foreseeable feasible mitigation measures;" and, "[a]n analysis of reasonably foreseeable alternative means of compliance with the rule or regulation." (Pub. Res. Code, § 21159(a)(1-3).) Similar to the requirements prescribed by California Code of Regulations, Title 23, Section 3777 identified above, the environmental analysis of the reasonably foreseeable methods of compliance required by the statute must "take into account a reasonable range of environmental, economic, and technical factors, population and geographic areas, and specific sites" at a program level. (Pub. Res. Code, § 21159(c-d).)</p>	
3239	164	<p>Adoption of the Staff SED would result in the State Water Board not proceeding in a manner required by law.</p> <p>CEQA requires environmental review of discretionary state actions, including the Proposed Project. In drafting the SED, Staff failed to comply with several of the legal requirements, rendering the SED unlawful and preventing the State Water Board from being able to adopt the Staff draft without proceeding in a manner that would violate the law. The legal deficiencies are set forth in this section below.</p> <p>The Notice(s) of Preparation Are Not Lawful</p> <p>When a lead agency for a project determines that an environmental impact report is required, the agency must send a "notice of preparation" (NOP) to the Office of Planning and Research, and to each responsible and trustee agency, stating that an EIR will be prepared. (Cal. Code Regs., tit. 14, § 15082[a].) The purpose of the NOP is to provide the public and regulated community with notice of the action the State Water Board intends to</p>	<p>Please see Master Responses 1.2, Water Quality Control Planning Process, regarding the scope of the Bay-Delta plan proceedings and Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the LSJR flow requirements and the program of implementation. Please see Master Response 1.1, General Comments, regarding the public review and recirculation process, the State Water Board's public outreach process, and legal basis for recirculation. The 2016 recirculated SED evaluates the same project identified in the 2009 Notice of Preparation (NOP).</p> <p>The NOPs released by the State Water Board included a description of the project, location of the project, and probable environmental effects of the project, pursuant to State CEQA Guidelines (Cal. Code Regs. tit. 14, § 15082[a].</p> <p>The State Water Board released the NOP for Environmental Documentation for the Update and Implementation of the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary: Southern Delta Salinity and San Joaquin River Flows (2009 NOP) on February 13, 2009. The 2009 NOP identified the project title as "Update and Implementation of the Water Quality Control Plan for the San Francisco Bay / Sacramento-San Joaquin Delta Estuary" and the project location as "the Bay-Delta</p>

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		<p>take. The NOP must include, at a minimum, a description of the project, the location of the project, and the probable environmental effects of the project. (Cal. Code Regs., tit. 14, § 15082[a][1].)</p> <p>The Board issued two NOPs for the update and implementation of the Water Quality Control Plan, one in 2009 and another in 2011. Neither provides a description of the currently Proposed Project. The NOP dated February 13, 2009 (2009 NOP), described the Proposed Project as a review and update of the flow objectives on the San Joaquin River. Critically, the 2009 NOP did not provide notice for a project that would create entirely new numeric flow objectives on the three eastside tributaries to the San Joaquin River.</p> <p>On April 1, 2011, the Board circulated a revised NOP (2011 NOP) in order to "clarify the scope of the State Water Board's current review of the Southern Delta salinity and San Joaquin River flow objectives and the program of implementation for those objectives . . ." (Exh. [2011 NOP], at 3.) The 2011 NOP continued to describe the project as a "review of and potential amendments to . . . the San Joaquin River flow objectives for the protection of fish and wildlife beneficial uses." (Exh. [2011 NOP], at 4.) The 2011 NOP also included a notice of potential new "narrative" objective at the confluence of each of the three eastside tributaries with the San Joaquin River. (2011 NOP, Attachment 2, at 1.)</p> <p>The 2011 NOP did not provide notice the State Water Board planned to create new numeric flow objectives on the three eastside tributaries, which is now being proposed by Staff. (SED, Appx. K.) The 2011 NOP explicitly stated that "the State Water Board is not currently considering any other changes to the Bay-Delta Plan or any specific changes to water rights and other requirements implementing the Bay-Delta Plan." (2011 NOP, Attachment 2, at 3.) The Board also stated that it would "provide additional notice regarding review of other aspects of the Bay-Delta Plan and its implementation in the future." (2011 NOP, Attachment 2, at 3.)</p> <p>The State Water Board is required to circulate a NOP with an accurate description of the project. (Cal. Code Regs., tit. 14, § 15082[a][1].) In violation of this requirement, Staff has now released the Proposed Project which proposes an entirely new project containing, among other things, numeric flow objectives on the three eastside tributaries (SED, Appx. K, at 18), a new narrative flow objective that is different than the narrative flow objective proposed in the NOP (SED, Appx. K, at 18), minimum reservoir carryover storage targets (SED, Appx. K, p. 28), and end-of-drought storage refill requirements. (SED, Appx. F.1, at F.1-32.) The Board never circulated a new or revised NOP with a project description fitting the current proposal in the SED. The failure to issue a new or revised NOP describing the project in its current proposed form is a violation of Section 15082(a)(1) of the California Code of Regulations.</p> <p>Moreover, the 2012 SED is not a substitute for a proper NOP. The CEQA Guidelines do not allow for a recirculated EIR, or in this case a recirculated SED, to serve as a substitute for a NOP. (See Cal. Code Regs., tit. 14, § 15082[a][1].) The NOP violation is a problem for several reasons. First, it fails to provide proper notice to the regulated community, which is the purpose of the notice requirements. Second, it fails to provide trustee and responsible agencies with the opportunity to comply with their requirements under CEQA. For example, there is a distinct process requiring responsible and trustee agencies to respond to NOPs which is different from the process for responding to draft EIRs or SEDs. (Cal. Code Regs., tit. 14, § 15082[b].)</p>	<p>watershed and its upstream tributaries and any reservoirs for which water may be used to meet the water quality objectives, including upstream reservoirs and San Luis Reservoir."</p> <p>The 2009 NOP project description states "[t]he proposed Project includes both: 1) the review and update of water quality objectives and the program of implementation in the Bay-Delta Plan and 2) changes to water rights and water quality regulation consistent with the program of implementation. Accordingly, the environmental documentation will identify and evaluate the significant environmental impacts associated with potential changes to the Bay-Delta Plan and potential changes to water rights and other measures implementing the plan that may be needed to ensure the reasonable protection of beneficial uses in the Bay-Delta watershed."</p> <p>The State Water Board released the Revised NOP and Notice of Additional Scoping Meeting (2011 NOP) on April 1, 2011 to clarify the scope of State Water Board review of the southern Delta salinity and San Joaquin River flow objectives, the program of implementation for those objectives included in the Bay-Delta Plan, and the scope of the environmental documentation in support of that review.</p> <p>The 2011 NOP updated the project title to "Update to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary: Water Quality Objectives for the Protection of Southern Delta Agricultural Beneficial Uses; San Joaquin River Flow Objectives for the Protection of Fish and Wildlife Beneficial Uses; and the Program of Implementation for Those Objectives" and specified the project location for the San Joaquin River Flow Objectives for the Protection of Fish and Wildlife Beneficial Uses as including "the watersheds of the three salmon bearing tributaries to the San Joaquin River: the Stanislaus, Tuolumne, and Merced Rivers down to the San Joaquin River near Vernalis."</p> <p>The 2011 NOP project description clarifies that "[t]he proposed Project includes review of and potential amendments to water quality objectives for the protection of southern Delta agricultural beneficial uses; San Joaquin River flow objectives for the protection of fish and wildlife beneficial uses; and the program of implementation for those objectives included in the 2006 Bay-Delta Plan. The proposed project also includes potential changes to the monitoring and special studies program included in the 2006 Bay-Delta Plan."</p> <p>The 2011 NOP Attachment 2, Draft San Joaquin River Fish and Wildlife Flow Objectives Program of Implementation, presented potential draft modifications to the Bay-Delta plan, including both narrative and unimpaired flow requirements for the Merced, Tuolumne, and Stanislaus Rivers. The proposed minimum reservoir carryover storage targets in the Program of Implementation (see Appendix K, Revised Water Quality Control Plan, Chapter IV, Program of Implementation) do not change the project identified in the NOPS.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the modeling approach and assumptions. As discussed in Appendix F, Hydrologic and Water Quality Modeling, the SED analyses include assumptions for processes and variables (e.g., end-of-year drought storage fill requirements) that are reasonable and necessary for a program-level analysis of water supply storage and delivery. The WSE assumptions represent examples of system operations to determine the significance of impacts pursuant to CEQA and should not be "be construed as establishing the responsibilities of water right holders. Nor is this plan to be construed as establishing the quantities of water that any particular water right holder or group of water right holders may be required to release or forego to meet the objectives in this plan." (Appendix K, Chapter I., Introduction, Section B., Purpose and Applicability).</p> <p>For information regarding the SED baseline, please see Master Response 2.5, Baseline and No Project.</p>

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		<p>Specifically, after a NOP is circulated, the responsible and trustee agencies have 30 days to provide the lead agency with a response that identifies significant environmental issues and reasonable alternatives and mitigation measures that those agencies "will need to have explored in the draft EIR." (Cal. Code Regs., tit. 14, § 15082[b][1][a].) After the responses are received, the draft EIR or SED that is in preparation "may need to be revised or expanded to conform to [those] responses . . ." (Cal. Code Regs. tit., 14, § 15082[a][4].) In other words, the purpose of the NOP is to allow for input prior to the circulation of any Draft EIR or SED. Indeed, a lead agency cannot circulate a draft SED for public review "before the time period for responses to the notice of preparation has expired." (Cal. Code Regs. tit., 14, § 15082[a][4].) By failing to provide a NOP with an accurate project description, the Board unlawfully divested the responsible and trustee agencies of the opportunity to provide input prior to preparation of the SED.</p> <p>The failure to issue a new or revised NOP has also distorted the impact analysis in the SED, compromising its value as an informative CEQA document. An SED, "must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation [NOP] is published . . ." (Cal. Code Regs., tit. 14, § 15125[a].) The environmental setting at the time the NOP is published serves as the "baseline" against which the lead agency compares the project to determine whether an impact is significant. (Cal. Code Regs., tit. 14, § 15125[a].)</p> <p>Since the issuance of the 2011 NOP, numerous conditions have changed in the vicinity of the project. For example, at the time the NOP was circulated, the flow requirements at the Vernalis compliance point on the San Joaquin River were set in accordance with the Vernalis Adaptive Manage Program (VAMP), an experimental flow regime that concluded in 2011. (SED, at 3-13.) Accordingly, the VAMP flows are included as part of the baseline in the SED. (SED, at 3-13.) As the VAMP flows were "generally lower than the Table 3 flows in the 2006 Bay-Delta Plan" which is now in place, the impact of the project as compared to the baseline does not accurately reflect the impact of the project on current conditions.</p> <p>For the above reasons, Staff failed to properly issue an NOP for the recirculated SED, which means the State Water Board cannot adopt the Staff draft and also proceed in a manner required by law.</p>	
3239	165	<p>The SED project description is not lawful.</p> <p>An accurate description of the project is a necessary element of environmental review. (County of Inyo v. City of Los Angeles (1977) 71 Cal.App.3d 185, 192.) The purpose of environmental review is to provide the public with detailed information about the effects a proposed project is likely to have on the environment. (Laurel Heights Imp. Ass'n of San Francisco, Inc. v. Regents of University of California (1988) 47 Cal.3d 37, 391 ("Laurel Heights"); Pub. Resources Code, § 21061; Cal. Code Regs., tit. 14, § 15003[b].) CEQA requires a project description sufficient to permit preparation of a meaningful and accurate report of the impacts of the proposed project. (Laurel Heights, at 396.)</p> <p>Most environmental documents dedicate an entire chapter to describing the project purpose and goals. The SED does not include such a chapter. The SED includes a short section in which the proposed project is described in less than a page. Section 1.1 states the proposed project would create a new LSJR Flow Objective for the protection of fish and wildlife beneficial uses and an associated program of implementation. (SED, at 1-1.) Given the complexity of the Proposed Project, this simplified description is not sufficient and fails</p>	<p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for information demonstrating that the project (defined as the plan amendments) description, including the program of implementation, is clear and provides sufficient detail to allow for a meaningful analysis and comparison between the "No Project Alternative" and plan amendment alternatives. The description of the plan amendments and the alternatives evaluated in the SED are adequate and meet the requirements of the State Water Board's certified regulatory program and CEQA.</p> <p>Please see Master Response 1.1, General Comments, for response to comments regarding the length and complexity of the SED. The State Water Board has made every attempt to present the SED in plain language and in a clear format with emphasis on the information that is useful to the public, agencies, and decision-makers (Executive Summary, Chapter 4, Introduction to Analysis, Chapter 18, Summary of Impacts and Comparison of Alternatives, and more).</p> <p>The State Water Board has the responsibility to comply with and follow applicable laws, CEQA and the Porter-Cologne Water Quality Control Act, as it relates to reviewing and revising the Bay-Delta Plan. As discussed in Master Response 1.2, Water Quality Control Planning Process, water quality control plans must be "periodically reviewed and may be revised." (Wat. Code, § 13240); Clean Water Act (CWA) section 303(c)</p>

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		<p>to properly reflect what Staff is proposing.</p> <p>Specifically, the project description fails to identify a project horizon. Therefore it is unclear whether the Proposed Project will be in effect for a few months or eternity. This fundamental attribute of the Proposed Project appears to be up in the air. Staff has made several confusing and contradictory comments regarding Project horizon. At one point Staff commented that the Project horizon is likely between 10-20 years. (12/12/16 Workshop, Les Grober, at 60:17- 18; 61:7-8.) At a different time, Staff stated that the Project did not have a specific time horizon. (Staff Technical Meeting, 11/18/2016 at 29:24-26.) These responses are both contrary to the statutory requirement to review and amend the Water Quality Control Plan every three years. (Water Code, § 13241.) Thus, it is not clear how long the Proposed Project will be in place, which makes environmental review increasingly difficult.</p> <p>Another example of lacking project description is that no preferred alternative is identified. The Staff SED discloses that Tributary Flow Objective will require a range between 30 to 50 percent of unimpaired flow. However, the SED fails to identify that the Staff preferred alternative is 40 percent of unimpaired flow. Appendix K states that 40 percent unimpaired flow will be implemented unless another percent is selected by the adaptive management teams and/or Executive Director. (SED, at Appx. K, p. 29.) This default language is unclear and does not constitute the identification of a preferred alternative. The identification of a preferred alternative is a key component of environmental review. (CEQA Guidelines, at 15126.6(a)(c)(2).) The SED has not correctly identified a preferred alternative and for that reason is unlawful.</p> <p>Most critically, the project description fails to disclose several fundamental portions of the Proposed Project that are hidden in the program of implementation. For example, the project description does not disclose that the program of implementation states the State Water Board will require minimum reservoir levels. The project description fails to disclose that the Proposed Project will require the participation in working groups to manage flows on an annual basis and develop biological objectives. Staff does not disclose these components in the project description. Instead, the SED states the program of implementation will be developed by stakeholders in the future. (SED, Appx. K, at 4.)</p> <p>Because the program of implementation is part of the Proposed Project and the SED does not describe the program of implementation sufficiently to allow meaningful environmental review, the project description is deficient. Because the SED does not include a sufficient project description and program of implementation the State Water Board failed to proceed in the manner required by law.</p>	<p>(33 U.S.C. § 1313(c)) requires a triennial review of state water quality “standards,” which is ordinarily combined with any review under state law. The Bay-Delta Plan was most recently revised in 2006.</p> <p>As described in the Executive Summary, Section ES 3.1, Lower San Joaquin River Flow and Southern Delta Salinity Proposals and Appendix K, Revised Water Quality Control Plan, the proposed LSJR flow objectives for February through June would require 40 percent of unimpaired flow, with an allowed adaptive range between 30 percent – 50 percent. The required percentage of unimpaired flow could be adapted within the allowable range through approved adaptive methods. For information on adaptive methods, please see Master Response 2.2, Adaptive Implementation.</p> <p>Please also see Master Response 2.1, regarding the LSJR Flow Program of Implementation, including discussion of the STM working group, and reservoir carryover storage.</p>
3239	166	<p>The SED employs an incorrect baseline.</p> <p>CEQA requires the SED to designate a proper baseline as the foundation for its environmental analysis. (Cal. Code Regs., tit. 14, § 15125.) A proper baseline must reflect the existing physical conditions and enable the environmental analysis to evaluate the impacts of the proposed project. (Cherry Valley Pass Acres v. City of Beaumont (2010) 190 Cal.App.4th 316 (“Cherry Valley”); Neighbors for Smart Rail v. Exposition Metro Line Construction (2012) 205 Cal.App.4th 552.) The general baseline rule provides that the baseline is usually set at the time the notice of preparation is published or at the time the environmental analysis is commenced. (Cal. Code Regs., tit. 14, § 15125.) The general rule is not rigid; rather, the State Water Board has flexibility is necessary to accommodate and</p>	<p>Please see Master Response 2.5, Baseline and No Project, for discussions of the No Project Alternative and baseline; why the No Project Alternative assumes full compliance with D1641; VAMP flows; and SJRRP.</p> <p>Please also see Master Response 3.2, Surface Water Analyses and Modeling, regarding the modeling approach used in the Recirculated SED.</p>

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		<p>account for changing conditions. (Cherry Valley, at 336.)</p> <p>Selection of a proper baseline is important; without an appropriate baseline, an adequate analysis of an environmental impact cannot be measured. (Cherry Valley, at 337.) Further, selecting an improper baseline will skew the environmental analysis. Setting a baseline too late may incorporate some early project impacts into the baseline without sufficiently analyzing these impacts, while setting a baseline too early may attribute non-project-related impacts to the proposed project. (Id.) The State Water Board failed to set the baseline in a manner required by law. This failure renders the SED's evaluation of environmental impacts arbitrary and capricious.</p>	
3239	167	<p>Baseline is outdated.</p> <p>Staff selected 2009 as the baseline to which it will compare the impacts of the Proposed Project. Staff's position is that it is required to use the 2009 baseline because the original NOP was released at that time. (12/15/2016 Workshop, at 47:23-48:5.) However, the Proposed Project has changed fundamentally since the 2009 NOP. For example, the compliance points are now on different rivers compared to the 2009 Draft SED, the Proposed Project now includes reservoir operation constraints that were not in the 2009 version, and the Proposed Project also includes participation in groups that will develop annual operations and biological objectives that were not previously included in the 2009 version.</p> <p>Because the Proposed Project differs so fundamentally from the previously proposed project, Staff is required to issue a revised NOP. If Staff had complied with issued an updated NOP it would not be able to claim that its hands are tied and it would be able to appropriately update the baseline as well. Due to both the changes in the Proposed Project, the fact that 2009 is now 8 years ago, and there have been several substantial changes to the physical environment in that time, Staff must also revise the baseline to include a proper, current baseline that is reflective of the existing environment. Without such an adjustment, the baseline includes flows that are no longer required and excludes other requirements that are in place, but not part of the Proposed Project.</p>	<p>Please see response to comment 3239-164 regarding the NOP.</p> <p>Please see response to comment 3239-166 regarding the SED baseline.</p>
3239	168	<p>VAMP Flows</p> <p>The SED baseline is incorrect because it includes the Vernalis Adaptive Management Program ("VAMP") flows. The inclusion of VAMP flows misrepresents the allocation of responsibility for San Joaquin River flows, mischaracterizes the existing physical environment, and underestimates the environmental impacts of the proposed alternative.</p> <p>Under D-1641, the State Water Board allocated responsibility for meeting the San Joaquin River flows to the United States Bureau of Reclamation ("USBR") out of New Melones. The SJTA members have never been responsible for meeting previous flow objectives on the San Joaquin River. Pursuant to the San Joaquin River Agreement ("SJRA"), the SJTA members agreed to release flows through VAMP.</p> <p>During VAMP, the SJTA members were able to provide flow because SJRA revenue funded conservation programs and efficiencies not otherwise funded. The term of the SJRA expired in 2010. D-1641 recognized VAMP flows would expire and recognized this expiration could occur before new objectives were in place. (Decision No. 1641, at 132, 162.) By including VAMP flows in the baseline the SED misrepresents the existing responsibilities of the USBR</p>	<p>Please see response to comment 3239-166.</p>

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		<p>and SJTA members.</p> <p>The inclusion of VAMP flows in the baseline also mischaracterizes the existing physical environment. VAMP flows are no longer in place. Although D-1641 controls since VAMP ended, the USBR, which is responsible for satisfying the San Joaquin River Flow Objectives, has been operating under a series of temporary urgency change permits (TUCP) and is operating pursuant to the TUCP mandated flow release schedule. Further, as the February 15, 2017 letter from USBR makes clear, USBR does not plan to comply with D-1641 requirements.</p> <p>The inclusion of VAMP flows in the baseline results in the SED underestimating environmental impacts of the Proposed Project. First, the SED underestimates the impact of the proposed project’s reduction to water delivery. Because the baseline includes VAMP flows, the SED only analyzes the environmental impact of releasing flows in excess of VAMP flow levels. The Irrigation Districts are not currently providing VAMP flows. Therefore, the SED underestimates the impact of the proposed regulation.</p> <p>Second, the inclusion of VAMP flows in the baseline falsifies operations at New Melones. By including VAMP flows, the SED makes water available from the Merced, Tuolumne and Stanislaus Rivers, masking the impacts of USBR operating New Melones to meet D-1641 requirements. In order to meet D-1641 requirements, New Melones operators would often need to draw down the reservoir to near empty. The SED fails to evaluate the impacts to this extreme operation scenario and analyze whether the proposed regulation would further adversely impact the operation of New Melones under existing conditions.</p>	
3239	169	<p>San Joaquin River Restoration Program</p> <p>The SED baseline does not include any flows from the San Joaquin River Restoration Program ("SJRRP"). Currently, the SJRRP affects flows, seepage and drainage in the San Joaquin River system. The SJRRP is part of the existing physical environment and therefore should be reflected as part of the baseline.</p>	<p>Please see response to comment 3239-144 regarding the SED approach to the San Joaquin River Restoration Program.</p> <p>Please also see response to comment 3239-166 regarding the SED baseline.</p>
3239	170	<p>The SED fails to evaluate dry year impacts.</p> <p>The Mediterranean climate of California is defined by periods of wet and dry years; the system is boom and bust. Dry year and drought periods are not just likely to occur--they are guaranteed to happen. In dry years, water delivery is often reduced, groundwater use is increased, fields may be fallowed, hydropower generation is reduced, and the economy is adversely impacted. Staff is proposing to reduce water deliveries. These reductions will affect the environment differently depending on the existing hydrology. Staff recognizes the extreme variation in impacts between wet and dry years. In wet years, the Proposed Project would have almost no impact, while in dry years, the same objective would have dramatic and devastating impacts.</p> <p>The State Water Board is required to analyze the environmental impacts of the Proposed Project. (Cal. Code Regs., tit. 3, § 3777[a][1].) Because the environmental impacts of the Proposed Project vary greatly depending on the hydrologic year type, Staff is required to analyze the impacts of the proposed project in various water year types. It is not sufficient for the State Water Board to average the results and only evaluate the environmental impacts of the averages.</p>	<p>The SED analyses are not limited to average years. Average results for water supply effects are the simplest measure for comparative purposes (see Tables ES-2 and 5-19a). However, the SED also presents average annual values by water year type, which shows typical conditions in dry and critical years (see Table ES-3), decile percentile distributions (see Table 5-20a), and percent exceedance plots showing all 82 years of the 1922-2003 evaluation period (see Appendix F.1, Hydrologic and Water Quality Modeling, Figures F.1.3-3(c), F.1.3.4(c), and F.1.3.5(c)). Please see Master Response 2.3, Presentation of Data and Results in the SED and Response to Comments, regarding the cumulative distributions presented in the impact analysis and the use of cumulative distributions to identify dry and critically years.</p> <p>Chapter 21, Drought Evaluation, provides an analysis of the frequency and severity of dry years, using the annual (WY) percent of average runoff as the metric for identifying (and normalizing) the sequence of runoff for the past 94 years. Fluctuation in runoff from year to year is one of the major characteristics of California’s rainfall and runoff. The Water Supply Effects model (WSE) analyzes the effects of the plan amendments. Appendix G, Agricultural Economic Effects of the Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results, Section G.2.1, Inputs from the WSE Model, explains the WSE model performs calculations on a monthly time step using 82 years of CALSIM II hydrology (water years 1922–2003) as input to New Melones Reservoir, New Don Pedro Reservoir, and Lake McClure, respectively. A more detailed description of the model is presented in Appendix F.1.</p>

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		<p>This is unlawful because the average does not reflect the widely variable potential impacts. (San Joaquin Raptor Rescue Center v. County of Merced, (2007) 149 Ca.App.4th 645, at 665-666 [finding the environmental review of a project with widely variable potential impacts deficient for failing to analyze peak impacts.]) In San Joaquin Raptor, a mining project disclosed peak project levels, but only analyzed the environmental impacts of the average production. The Court determined this was inadequate because it was reasonably foreseeable that the peak operation may occur and thus the environmental impacts of the peak production must be analyzed.</p> <p>In fact, CEQA statute prohibits the reliance of averages where more specific data is available. (Cal. Code Regs., tit. 23, § 3777[c].) The data on dry years is readily available to Staff. Staff actually discloses the dry year data in the SED, but fails to analyze impacts in such dry years. (SED, at Appx. F.1, p. 64.)</p> <p>The lack of dry year analysis is a significant failure. Because the Proposed Project will result in only very minimal or very significant impacts, "average" impacts will very rarely occur. Yet these rarely occurring "average" impacts are the only impacts for which the environmental analysis is performed. Therefore, averaging the impacts does not properly disclose the reasonably foreseeable impacts of the Proposed Project. Because the impacts of the Proposed Project vary so widely between average and dry years and because the dry year data is readily available, it is not adequate to analyze only the average water year type.</p> <p>Because the law requires Staff analyze dry year impacts, and it failed to do so, the State Water Board cannot adopt the Staff draft and proceed in a manner required by law.</p>	<p>Chapter 9, Groundwater Resources, describes that in response to implementation of the proposed flow objectives, impacts to groundwater resources would be more severe in dry years, and describes the historical local response to increase groundwater pumping when surface water supply is reduced.</p> <p>Chapter 11, Agricultural Resources, identifies that any increases in flows would result in a reduction in surface water supply, and that a reduction in surface water supply could potentially lead to reductions in crop acres. In addition to averages, Chapter 11 also provides percent exceedance plots illustrating, by crop types, the variability of impacts to irrigated acres.</p> <p>Chapter 20, Economic Analysis, evaluates the economic effects on agricultural production and hydropower generation.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, for more information on the modeling of water supply reliability.</p>
3239	171	<p>The SED fails to disclose project impacts prior to mitigation.</p> <p>CEQA requires the lead agency to identify the environmental impacts of the Proposed Project. To the extent these impacts are found to be significant, Staff must consider mitigation. However, CEQA is clear that prior to mitigation, the full impacts of the Proposed Project must be disclosed. Staff fails to identify all Proposed Project impacts prior to incorporating mitigation. (San Joaquin Raptor Rescue Center v. County of Merced, (2007) 149 Ca.App.4th 645, at 665-666)</p> <p>For example, the minimum reservoir levels were developed by Staff to mitigate for temperature impacts from the Proposed Project. When explaining the development of reservoir minimums, Staff explains: "[W]ith the increased drawdowns that would occur to meet the flow requirements, that was found to have temperature effects. So this was done to not have those effects by increasing the carryover storage." (12/5/2016 Workshop, Less Grober, at 73:6-9.)</p> <p>In this situation, where the Proposed Project results in temperature impacts, CEQA requires Staff to first disclose the impacts from the Proposed Project. Staff never disclosed the impacts. Instead, Staff developed mitigation in the form of reservoir minimum requirements and ONLY disclosed the impacts of the Proposed Project with the included mitigation. This is violation of CEQA and causes several fundamental disclosure issues.</p> <p>First, it fails to disclose the full impacts of the Proposed Project to the public. Second, it asks the public or regulated community to believe that the Staff developed the reservoir minimums to mitigate for temperature impacts that were never disclosed without getting to review or analyze the temperature impacts. Third, it further asks the public to have faith</p>	<p>Please see Master Response 1.1, General Comments for a general discussion regarding mitigation. The program of implementation includes the provision for minimum reservoir storage targets to prevent unintended consequences at other times of the year, such as higher temperatures, as result of providing more February to June flows (see Implementation of February through June LSJR Flow Objectives in Appendix K, Revised Water Quality Control Plan). The State Water Board modeled potential reservoir operations for the purpose of 1) analyzing impacts of the plan amendments and 2) showing the range of potential impacts in such a way that the public and the State Water Board can compare the relative effects. The modeled operations are not intended to be prescriptive. Specific carryover storage requirements will be established when implementing the plan amendments through water rights and water quality proceedings. Reservoir storage targets are part of the program of implementation, not a form of mitigation.</p> <p>The groundwater substitution assumption in the impact analysis is not a form of mitigation. Groundwater substitution is the historical local response to reduced surface water supplies. It is, therefore, reasonable to assume that groundwater users will choose to increase groundwater pumping in response to implementation of the plan amendments. As discussed in Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, if water users choose to increase groundwater pumping to maintain existing levels of water use, there could be an effect on groundwater resources. Conversely, if groundwater is not pumped, then there could be some effects on local agricultural.</p>

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		<p>that the reservoir minimums actually mitigate the temperature conditions that were allegedly occurring. Fourth, it fails to provide State Water Board members with the information that would provide them with the ability to weigh and balance the benefit of the reservoir minimums against the alleged temperature impacts.</p> <p>Staff also fails to disclose the agriculture impacts of the Proposed Project without mitigation. Specifically, Staff assumes that an average quantity of 105,000 acre feet of groundwater will be pumped to mitigate the Proposed Project’s reduced water deliveries to agriculture. (SED, at Appx. G, p. 15.) Staff explains how it off-set agriculture impacts by mitigating with groundwater: "For the purposes of agricultural resources, the full reduction on surface water supply would occur to all agricultural crops. For the purposes of groundwater resources, we link this to the agricultural analysis and that the shortfall expected to occur in the agricultural analysis would result in an increasing groundwater pumping over a subbase scenario and a reduction in groundwater recharge." (12/12/16 Workshop, at 26:4-11.)</p> <p>This means that Staff includes groundwater mitigation before disclosing the loss to agriculture. Staff failed to evaluate the potential impacts to agriculture without groundwater mitigation. Again, this causes several problems. First, it fails to disclose the full impacts of the Proposed Project to the public. Second, it requires the public to trust that Staff correctly identified the amount of groundwater that will be pumped and that this amount of groundwater would off-set a specific quantity of agriculture impacts. This trust is required because Staff fails to disclose the agriculture impacts without groundwater mitigation, requiring stakeholders to trust that pre-mitigation impacts existed and that mitigation resolved a portion of those impacts. Third, it fails to provide State Water Board members with the information necessary to weigh and balance the benefit of groundwater pumping against the agriculture impacts.</p>	
3239	172	<p>The SED No-Project Alternative is unlawful.</p> <p>The SED analysis of the no-project alternative does not proceed in a manner required by law for several reasons. First, the environmental analysis of the no-project alternative includes operational requirements which would not exist if the State Water Board took no action. Specifically, the no-project alternative assumes Oakdale Irrigation District ("OID") and South San Joaquin Irrigation District ("SSJID") would share the responsibility of the USBR to comply with D- 1641.</p> <p>This assumption is unfounded and unsupported; neither OID nor SSJID are responsible for existing D-1641 flows and in addition, both OID and SSJID have water rights that are senior to those of the USBR. Thus, if the State Water Board took no action, OID/SSJID would not experience delivery reductions. If the State Water Board took no action, OID and SSJID would continue delivering water to their respective service areas and the USBR would meet the existing requirements by drawing down New Melones. Therefore, the environmental analysis of the noproject alternative is based on flawed operational assumptions. These flaws prevent Staff from properly analyzing the environmental impacts of deciding not to adopt the Proposed Project.</p> <p>Third, Staff evaluates the impacts of the no-project alternative by using the WSE Model. The WSE Model makes several assumptions that do not exist and would not exist if the State Water Board took no action. For this reason, the WSE Model skews the no-project analysis</p>	<p>Please see Master Response 2.5, Baseline and No Project, regarding a description of baseline, a description of the No Project Alternative and assumptions to support it and a description of the modeling of the No Project Alternative.</p>

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		<p>and misrepresents the environmental impacts.</p> <p>Fourth, the environmental analysis of the no-project alternative does not reflect the reality that the no-project alternative is not viable and will result in New Melones Reservoir emptying in dry years. Staff does not understand how New Melones Reservoir is operated. This lack of understanding is demonstrated in Staff’ description of the no-project alternative on the Stanislaus River and lack of accounting for the water right priority of OID and SSJID.</p> <p>Staff must understand the operation of the reservoirs it is proposing to regulate. The failure to demonstrate this understanding is a fundamental defect. Had Staff understood New Melones operations, the environmental analysis would reflect that compliance with the existing regulations is not operationally possible, as these requirements would often require New Melones to be emptied. Therefore, Staff’s no-project alternative, which assumes OID and SSJID allocate water to meet the existing requirements is faulty and misrepresents environmental impacts.</p> <p>Fifth, Staff fails to recognize that for the past several years, flows at Vernalis have been controlled by several temporary urgency change permits (TUCP). The no-project alternative should consider whether such TUCP relief will continue to control the flows on the San Joaquin River in the future.</p>	
3239	173	<p>The SED phasing approach is unlawful.</p> <p>Historically, the State Water Board has performed its review of the Bay-Delta Plan in one comprehensive process. (See 2006 Bay-Delta Plan; See 1995 Bay-Delta Plan; See 1991 Bay-Delta Plan; See 1978 Bay-Delta Plan.) Although the objectives are complex and multi-faceted, the Bay-Delta Plan is a single basin plan that includes water quality objectives whose purpose is to protect the beneficial uses in the Bay-Delta Estuary. (See 1995 Bay-Delta Plan, at 3.) Because the purpose of the water quality objectives is to benefit a Bay-Delta watershed, many of the objectives are inextricably interrelated. For example, the San Joaquin River Objectives are affected by and affect the objectives which set reverse flows, export/inflow ratios, and Delta outflows.</p> <p>The State Water Board split its review of the Bay-Delta Plan into phases by reviewing south Delta salinity and San Joaquin River Flow Objectives in a process that is prior to and separate from the remainder of the "comprehensive" review. (SED, Appx. KI, Executive Summary.) This separation is unlawful for several reasons.</p> <p>First, the Bay-Delta Plan is a basin plan covering a single designated area. Separating south Delta and San Joaquin River flows from the remainder of the basin plan review results in a piecemealed analysis that is non-comprehensive. The San Joaquin River is one of the two main rivers whose confluence makes up the Delta. Separating the flow objectives on the San Joaquin River from the larger "comprehensive" review of the remainder of the Bay-Delta Plan makes little sense. The quantity of San Joaquin River flows that will reasonably be required to protect the beneficial uses in the Delta is affected by reverse flows, exports, and other factors being reviewed in the "comprehensive" review. For this reason, evaluating San Joaquin River flows in isolation, without considering the other basin-wide mechanisms that are interrelated, results in a non-comprehensive piecemealed review.</p> <p>Second, separating the processes will require water users on the San Joaquin River to expend twice the resources to achieve the same result. Because SJTA interests will be</p>	<p>Please See Master Response 1.2, Water Quality Control Planning Process, regarding the scope of the Bay-Delta plan proceedings, including discussions on the State Water Board’s multi-pronged approach to address the ecological crisis in the Bay-Delta and protect beneficial uses in the Bay-Delta and tributary watersheds and SED evaluation of potential cumulative environmental effects associated with the LSJR flow and southern Delta salinity objectives together with other projects and programs that could cause related impacts, including the Sacramento Bay-Delta watershed update.</p> <p>The commenter misquoted the California Code of Regulations, title 23, section 3777. Section 3777 does not require a single SED for a single basin plan amendment, nor does Section 3777 prevent multiple SEDs for a single basin plan amendment. Section 3777 specifically states “Any water quality control plan, state policy for water quality control, and any components of California’s water quality management plan as defined in Code of Federal Regulations, title 40 sections 130.2(k) and 130.6, proposed for board approval or adoption must include or be accompanied by Substitute Environmental Documentation (SED) and supported by substantial evidence in the administrative record.”</p>

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		<p>subject to all "phases" of the Bay-Delta Plan review, it will be required to participate in two different review processes in front of the State Water Board, review at least two different environmental documents, and to the extent the adoption and/or implementation of any revised objectives do not comply with law, the SJTA will have to challenge two different actions adopting objectives and two different implementation plans. This unfairly prejudices the regulated parties in Phase 1.</p> <p>Third, the piecemealed process is not conducive to properly evaluating the cumulative impacts of the Proposed Project. Staff does not take into consideration the impact of the potential subsequent amendment of objectives in the later "comprehensive" review. As noted above, these subsequent objectives may require different flows from San Joaquin River water users or impact the efficacy of the flows required by amended south Delta salinity and San Joaquin River Flow Objectives. Staff must consider the cumulative environmental impacts from Phase 1 and Phase 2.</p> <p>Fourth, the California Code of Regulations, title 23, section 3777, requires a single SED be performed for each basin plan amendment. (Cal. Code Regs., tit. 23, § 3777.) Section 3777 specifically states that "Any water quality control plan . . . proposed for [State Water] Board approval or adoption must be accompanied by an SED." (Id.) This code provision does not provide or otherwise allow for multiple SED's for a single basin plan amendment. For these reasons, the phasing approach to a single basin plan results in the failure of the State Water Board to proceed in a manner required by law.</p>	
3239	174	<p>The SED unlawfully segments environmental analysis.</p> <p>The State Water Board divided its review and update of the Bay-Delta Plan into two phases. Phase 1 of the process consists of "proposed amendment to the Bay-Delta Plan involving the LSJR flow objectives and the southern Delta salinity objectives." (SED, at ES-2.) Phase II consists of "reviewing and considering updates to other elements of the Bay-Delta Plan, including Delta outflows, Sacramento and tributary inflows (other than the SJR inflows), and ecosystem regime shift." (SED, at ES-2.) Along with this phasing approach, the State Water Board divided its environmental analysis by phases as well. Therefore, the SED for Phase I and evaluation of Phase I impacts is separate from the evaluation of impacts for later phases. This amounts to impermissible segmentation for several reasons.</p> <p>First, CEQA prohibits the division of a single project into several projects, as the review of the environmental impacts of a single project must be considered together. (Laurel Heights, at 396.) The review of the Bay-Delta Plan is one project. Previously the State Water Board has reviewed and revised the Bay-Delta Plan as a single project. To split up a single project into several pieces for the purpose of environmental review violates CEQA requirements.</p> <p>Second, the Bay-Delta is system that is interconnected, works together and cannot be separated out into different phases. "Past experience has shown that piecemeal efforts to address the Bay-Delta's problems have failed because those problems are interrelated and because conflicting interest groups and stakeholders can block actions that promote some interests at the expense of others" (In re Bay-Delta, supra, 43 Cal.4th at 1165 [acknowledging that CALFED properly "determined that the four primary project objectives had to be addressed concurrently"].) The regulation of flows in one area affects the Bay-Delta system; all changes to the Bay-Delta Plan must be considered concurrently to have an accurate understanding of these changes and how they function in the system at the same</p>	<p>Please see Master Responses 1.2, Water Quality Control Planning Process, regarding the scope of the Bay-Delta plan proceedings. As discussed in the Executive Summary, the State Water Board is engaged in a multi-pronged approach to address the ecological crisis in the Bay-Delta and protect beneficial uses in the Bay-Delta and tributary watersheds. This SED evaluates the proposed amendments to the Bay-Delta Plan involving the Lower San Joaquin River (LSJR) flow objectives and southern Delta salinity objectives, sometimes referred to as Phase I of the Bay-Delta Plan update. In a separate process, the Sacramento Bay-Delta watershed update, the State Water Board is reviewing and considering updates to other elements of the Bay-Delta Plan, including requirements for flows and cold water habitat in the Sacramento River, its tributaries and tributaries to the Delta (the Mokelumne, Cosumnes, and Calaveras Rivers); Delta outflows; and water project operations in the interior Delta (State Water Board 2017a). These separate water quality proceedings involve different water quality objectives, largely different geographic areas, and can be developed and implemented independently of each other.</p>

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		<p>time.</p> <p>Third, because the SED analyzes the Proposed Project separately from the other objectives in later phases that the State Water Board intends to propose for the rest of the Bay-Delta Plan, it necessarily limits the number of alternatives and mitigation measures that are available for consideration. Staff confines its analysis to an area characterized (albeit incorrectly) as the "SJR Basin." (SED, ES-5; Figure ES-1.) As such, any alternatives that would have allowed for lesser flow objectives on the San Joaquin River or three eastside tributaries due to flow contributions from the Sacramento River basin to the Bay-Delta Estuary were not considered. Likewise, any mitigation measures that might have called for greater contributions from the Sacramento River basin in order to limit or reduce impacts in the San Joaquin River basin were also not considered, and indeed could not have been considered due to the segmented environmental analysis.</p> <p>Given that the stated purpose of the Proposed Project is to protect "fish populations migrating through the Delta," the significant flow contributions of the Sacramento River to the Bay-Delta should not have been ignored when determining and/or analyzing the possible alternatives for the flow objectives on the San Joaquin River, and the potential mitigations measures for impacts within the San Joaquin River basin. On an even more limited geographic scale, the SED also fails to analyze any alternatives or mitigation measures that would incorporate flows or other contributions from the Upper San Joaquin River (upstream of Merced), the Mokelumne River, and the Cosumnes River, all of which are part of the "SJR Basin" identified in the document. (SED, Figure ES-1.) The potential contributions from these areas of the plan should also not have been ignored.</p> <p>"The purpose of an EIR is to give the public and the government agencies the information needed to make informed decisions, thus protecting 'not only the environment but also informed self-government.'" (In re Bay-Delta etc. (2008) 43 Cal.4th at 1162 [quoting Citizens of Goleta Valley v. Board of Supervisors (1990) 52 Cal.3d 553, at 564].)</p> <p>"The EIR is the heart of CEQA, and the mitigation and alternatives discussion forms the core of the EIR." (In re Bay-Delta, supra, 43 Cal.4th at 1162.) By ignoring the impacts and contributions of the Sacramento River Basin to the Bay-Delta when setting the Proposed Project, the program SED failed to describe "a range of reasonable alternatives to the project" (CEQA Guidelines, § 15126.6[a]), or "feasible measures which could minimize significant adverse impacts" (CEQA Guidelines, § 15126.4[a][1].) A "single program EIR," or in this case a single program SED, was required for the entire Bay-Delta Plan. (CEQA Guidelines, § 15168.)</p>	
3239	175	<p>The SED's programmatic approach is unlawful.</p> <p>Staff states that the environmental effects of the Proposed Project were evaluated on a "programmatic level, which is a broader level than a project-specific analysis." (SED, at 4-11.) The CEQA roadmap outlined in the SED indicates that subsequent "project-specific environmental review" will occur at later date. (SED, at 4-11.) As demonstrated below, the decision to prepare a programmatic level SED on a project that makes specific amendments to two objectives in the Bay- Delta Plan, as opposed to comprehensive review of the entire Bay-Delta Plan, constitutes unlawful segmentation of the environmental review.</p> <p>The CEQA Guidelines allow for the preparation of a "Programmatic" document when the project is "a series of actions that can be characterized as one large project" and where the</p>	<p>Please see Master Response 1.1, General Comments, regarding the SED's programmatic level of analysis. Please see Master Response 1.2, Water Quality Control Planning Process regarding the updates to the plan amendments through independent proceedings.</p> <p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, for information regarding the program of implementation. The program of implementation in Appendix K of the SED provides a description of the program of implementation and identifies that the plan amendments will be implemented by 2022 through water rights or water quality proceedings.</p> <p>As described in Appendix K, Revised Water Quality Control Plan, the State Water Board will consider, in a future water rights proceeding or proceedings, the nature and extent of water right holders' responsibilities to meet these objectives. Until those proceedings have taken place, it would be too speculative of the State</p>

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		<p>actions are related, either (1) geographically, (2) as "logical parts in the chain of contemplated actions," (3) "[i]n connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program," or (4) "[a]s individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways." (Cal. Code Regs., tit. 14 [CEQA Guidelines], § 15168[a].)</p> <p>A "Program EIR" is required whenever a "phased project" is "to be undertaken and where the total undertaking comprises a project with significant environmental effect . . ." (CEQA Guidelines, § 15165.) In such circumstances, the lead agency must prepare "a single program EIR for the ultimate project." (CEQA Guidelines, § 15165.) As relevant here, the entire Bay-Delta Plan constitutes the "one large project" that will be undertaken in phases, and for which "a single program EIR" was required to be prepared. (CEQA Guidelines, §§ 15165, 15168.)</p> <p>Applying these rules to the Proposed Project, if Staff wished to perform a programmatic level environmental review, it could have done so by performing a programmatic review of the State Water Board's entire Bay-Delta Plan review, prior to the evaluation of the specific phases. The review of Phase 1, which consists of specific revisions to two specific water quality objectives is not a "series of actions" that can be characterized as a larger project. Rather, it is one of the specific actions for which a project level analysis is required.</p> <p>In addition to the fact that the Proposed Project is too specific for Staff to perform a programmatic document, it also lacks the necessary detail and analysis necessary even for a programmatic document. As noted above, Staff purports to analyze the environmental impacts associated with the Proposed Project at a "programmatic level." (SED, at 4-11.) Programmatic documents are used "in conjunction with the process of tiering." (In re Bay-Delta etc. (2008) 43 Cal.4th 1143, 1170.) The "tiering" of environmental review is a one-directional process: from "general matters in broader EIRs (such as on general plans or policy statements)" to "narrower EIRs or ultimately site-specific EIRs" that incorporate the general discussions by reference. (CEQA Guidelines, § 15385.)</p> <p>Tiering can also be used to stage environmental review, but only where certain issues are "not yet ripe." (CEQA Guidelines, § 15385.) A lead agency may defer analysis where accessing "site-specific information may not be feasible" such deferral is allowed "until such time as the lead agency prepares a future environmental document" on a project level. (In re Bay-Delta, at 1170.) Thus, the analysis of a potential environmental impact may not be deferred "when it is 'a reasonably foreseeable consequence' of the plan and the agency preparing the plan has 'sufficient reliable data to permit preparation of a meaningful and accurate report on the impact' of the factor in question." (Los Angeles Unified School Dist. v. City of Los Angeles (1997) 58 Cal.App. 4th 1019, 1028.)</p> <p>In violation of the rules requiring analysis of all reasonably foreseeable consequences, Staff fails to consider several foreseeable impact. For example, Staff does not consider the impacts that will result to junior water right diverters on the west side of the San Joaquin River, downstream of the rim dams. Staff recognizes the "reduction in availability of surface water could affect water users who obtain their water from diversions anywhere within the plan area and extended plan area--anywhere within the Stanislaus, Tuolumne, and Merced River Watersheds." (SED, at ES-23.) Staff further states, "implementation will generally follow the water right priority system [and] [t]his could result in adding conditions to existing water rights or taking other water right actions that would require some water right</p>	<p>Board to attempt to determine impacts to specific water users at a greater level of detail than what is included in the SED.</p>

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		<p>holders to not divert water when flows are required to meet the proposed flow objective." (SED, at ES-23.) Despite acknowledging this impact, Staff fails to analyze the environmental results.</p> <p>"A program EIR should contain a sufficient degree of analysis, in the light of what is reasonably feasible, to provide decision makers with information that enables them to make a decision which intelligently takes account of environmental consequences." (North Coast Rivers Alliance v. Kawamura (2015) 243 Cal.App.4th 647.) The failure to consider the impact to downstream diverters renders the SED deficient, even from a programmatic level.</p>	
3239	176	<p>The failure to consider a range of reasonable alternatives is unlawful.</p> <p>Staff must consider a reasonable range of alternatives which could feasibly attain the basic objectives of the Proposed Project. (Pub. Resources Code, § 15126(d); Friends of the Eel River v. Sonoma County Water Agency (2003) 108 Cal.App.4th 859, 873 ("Friends of Eel River").) It is well-established that environmental review is not required to analyze every conceivable alternative. (Preservation Action Counsel v. City of San Jose (2006) 141 Cal.App.4th 1336.)</p> <p>However, Staff is required to analyze a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. (Id.) Further, Staff is required to provide sufficient information "from which one could reach an intelligent decision as to the environmental consequences and relative merits of the available alternatives." (San Joaquin Raptor, at 738; [quoting Friends of Eel River, at 873]; Wildlife Reserve Center v. County of Stanislaus, (1994 27 Cal.App.4th 713.)</p> <p>Staff failed to properly consider a reasonable range of alternatives in compliance with CEQA. Instead, Staff considered only unimpaired flow regulations. Because Staff failed to consider other flow and non-flow alternatives that could feasibly attain the basic objectives of the Proposed Project, the discussion of alternatives does not foster informed decision-making and if the State Water Board adopts the Staff draft it will not proceed in the manner required by law. (Friends of Eel River, at 874.)</p>	<p>Please see Master Response 2.4, Alternatives to the Water Quality Control Plan, regarding the reasonable range of feasible alternatives as defined by CEQA and used by the State Water Board to define alternatives evaluated in the SED.</p>
3239	177	<p>The Staff Alternative is unlawfully narrow.</p> <p>The purpose of the Proposed Project is to provide reasonable protection to fish and wildlife. There are a number of factors or stressors that affect native fish, including, but not limited to, ocean harvest, ocean conditions, hatchery practices, predation, temperature, dissolved oxygen, nutrients, toxics, turbidity, availability of food, and habitat. Taking these factors into account, there are literally hundreds of actions Staff could have considered as feasible alternative actions. For example, Staff could have considered pulse flows to create fish habitat, limitations to ocean harvest, optimization of hatchery practices, or other functional flow regimes.</p> <p>Staff failed to consider any of these alternatives. Instead, Staff evaluated only a single alternative: regulation of unimpaired flow. Staff claims that by considering varying percentages of unimpaired flow it satisfied the requirement to evaluate a range of reasonable alternatives. This is not the case; the varying unimpaired flows ranges are simply gradations of the same alternative, they are not separate alternatives.</p>	<p>Please refer to Master Response 1.1, General Comments, regarding the Water Board's alternative development process and the importance of unimpaired flows as a necessary element of the plan amendments.</p> <p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, regarding unimpaired flow requirements.</p> <p>Please refer to Master Response 2.2, Adaptive Management, and Master Response 3.1, Fish Protection, regarding how nonflow measures will be included in the plan amendments.</p> <p>Please refer to Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, regarding the selection of alternatives and process for determining alternatives feasibility. In particular, please refer to Table 2.4-1. Ability of Non-Flow Measures Alone to Meet Certain Purposes Goals, of Master Response 2.4, which summarizes the infeasibility of non-flow-only alternatives.</p> <p>Please see Master Response 3.1, Fish Protection, regarding the scientific justification for the flow objectives to reasonably protect the beneficial uses of fish and regarding the role of hatcheries and predation risk.</p> <p>Please see Master Response 5.2, Incorporation of Non-Flow Measures, regarding the incorporation of non-</p>

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			<p>flow measures (e.g., habitat restoration or predator control) in the plan amendments, Appendix K of the SED, and Chapter 16 of the SED and the fact that non-flow measures are not considered alternatives to the water quality objectives.</p>
3239	178	<p>Staff failed to consider other reasonable flow alternatives.</p> <p>Staff failed to evaluate other reasonable flow alternatives. For example, Staff could have analyzed an objective based on unimpaired flow in months different than the February to June period. The SJTA provided the Staff with significant information regarding the lack of fish benefit and disproportionate cost burden related to increasing flows in June. This information makes the alternative of flow requirements for February through May a reasonable alternative that should have been analyzed in the SED. Instead of analyzing the non-June alternative, Staff developed a post-hoc rationalized position that it did not need to consider a non-June flow alternative. Specifically, Staff created and presented slides in the Phase 1 workshops that attempted to combat the high cost and low return issues with June flows. (1/3/2017 Staff Presentation, at Slide 14.)</p> <p>This slide selects a single year to support the assertion that salmon remain in the Tributaries until June. Staff’s cherry picking data is not effective; as small passage in a single year does not combat more comprehensive data that reflects there are only small remnant populations that remain in the Tributaries in June.</p> <p>Further, this single data point does not replace the need to evaluate a non-June flow alternative to better understand the costs/benefits of other alternatives. Staff did not analyze a February through May alternative. Therefore, it is not known whether this alternative would provide similar fish benefits for a significantly reduced cost. For this reason, the SED did not consider a range of reasonable alternatives. Similar to June, February is a month that has low fish benefit and higher water costs. Staff failed to consider an alternative that did not include February.</p> <p>Staff also failed to consider flow alternatives other than percentages of unimpaired instream flow. For example, several stakeholders suggested pulse flows may provide more benefit to fish and wildlife as compared to a constant level of unimpaired flow because such pulse flows may provide floodplain habitat, assistance in outmigration, and/or increased turbidity. (SED, at 3-22 to 3-24.) Based on this information, Staff should have analyzed a regulation that would require pulse flows for floodplain habitat, outmigration, or other benefits. This would have provided the water cost and fishery benefits analysis required by CEQA. The SED did not analyze the environmental impacts of a pulse flow objective or a tributary-specific flow objective. For this reason, the SED did not consider a range of reasonable alternatives, and the State Water Board did not proceed in the manner required by law.</p> <p>Staff also could have considered an alternative that tailored specific flow regimes for each tributary based upon different flow functionality goals. For example, specific functions such as spawning, outmigration, and cold-water habitat could be matched up with specific tributaries and a flow regime on each tributary could have been developed implementing a specific functional flow goal. This type of functional flow regime is reasonable and should have been considered in the range of reasonable alternatives. Because it does not analyze reasonable alternatives, the State Water Board cannot adopt the Staff draft and proceed in a manner required by law.</p>	<p>Please see Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, regarding a discussion of the reasonable range of feasible alternatives evaluated in the SED.</p> <p>Please see response to comment 3239-136 regarding the importance of June flows.</p> <p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 3.1, Fish Protection, regarding the need and expected benefit of the February–June flow objectives for fish and wildlife.</p> <p>Please also see Master Response 2.2, Adaptive Implementation, regarding adaptive adjustment (b) in the program of implementation, sometimes referenced as flow shaping, which already provides the flexibility to incorporate pulse flows in the implementation of the objectives. As provided by Appendix K, Revised Water Quality Control Plan, adaptive adjustments may be made independently of each other or combined and may also be made independently on each of the Stanislaus, Tuolumne, and Merced Rivers, so long as the flows are coordinated to achieve beneficial results in the LSJR related to the protection of fish and wildlife beneficial uses.</p>

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3239	179	<p>The SED failed to consider reasonable non-flow alternatives.</p> <p>The purpose of the Proposed Project is to support and maintain the natural production of viable native San Joaquin River watershed fish populations migrating through the Delta. (SED, Appx. K, p. 18.) Because it is feasible that the support and maintenance of fish could be achieved through a variety of non-flow actions, Staff should have analyzed some non-flow measures. For example, studies indicate predation is the dominant stressor to salmon smolts in the San Joaquin River tributary systems--allowing less than five percent salmon smolt survival to the main stem of the San Joaquin River. (VAMP 2011 Report; 2013 FERC Tuolumne River Predation Report.)</p> <p>An alternative that addresses the stressor causing approximately 95 percent mortality is not only reasonable, but necessary. Predation rates are so high, it is likely that no flow regime could be crafted to support and maintain salmon. (SED, Appx. C, at 3-28.) In this situation, flow alternatives may be rendered "infeasible" because without addressing predation, a flow-only alternative will not achieve the basic objectives of the Proposed Project.</p> <p>Further, predation programs have minimal water costs and provide a substantial and measurable benefit to native fish species, which would result in less significant environmental impacts compared with any of the flow alternatives evaluated by Staff. Thus, the omission of a predation alternative amounts to an omission of relevant, feasible alternative. Because Staff failed to include a predation alternative, the SED has subverted the purposes of CEQA and is legally inadequate. (Friends of Eel River, at 783.)</p> <p>Staff failed to analyze objectives which amend ocean harvest, increase floodplain habitat, develop spawning habitat, and other non-flow measures. Because the SED does not include this analysis, the State Water Board cannot adopt the Staff draft and proceed in the manner required by law.</p> <p>An alternative considering hatchery practices is also a feasible alternative that Staff failed to consider. The overwhelming majority of salmon are not natural, but hatchery fish. Therefore, changes to hatchery practices is the most effective way to influence salmon populations. This is reflected by the recent changes to hatchery practices by moving the location of hatchery releases past Chipps Island, the survival and salmon returns have increased significantly. (www.rmpc.org.)</p>	<p>Please see response to comment 3239-40 regarding non-flow measures.</p>
3239	180	<p>Staff failed to explain the infeasibility of alternatives it decided not to consider.</p> <p>Staff acknowledges the SED must identify all alternatives the State Water Board considered but did not analyze due to infeasibility. (SED, at 3-8 to 3-10; CEQA Guidelines § 15126.6, § 21002.1.) Further, Staff is required to explain the reasons it determined analysis of the alternatives was infeasible. (City of Del Mar v. City of San Diego, (1982) 133 Cal.App.3d 401; California Native Plant Society v. City of Santa Cruz, (2009) 177 Cal.App.4th 957.) Pursuant to these requirements, Staff includes Section 3.3.9 which discloses approximately fifteen alternatives that stakeholders suggested the State Water Board analyze. Although these alternatives are disclosed, Staff fails to explain the basis for its determination that they are not feasible.</p> <p>For example, Staff concedes that stakeholders suggested the State Water Board consider an alternative that would measure the protection of fish and wildlife based on environmental condition metrics. (Id., at 3-9.) Staff did not explain why this alternative was not feasible. In</p>	<p>Please refer to Chapter 3.3.9, "Other Suggested Program of Implementation Elements," for a discussion of commenter recommendations that would not reduce or substantially lessen potentially significant environmental effects.</p> <p>Please refer to Master Response 2.4, Alternatives to the Water Quality Control Plan, regarding the alternative selection and evaluation process and the reasonable range of feasible alternatives evaluated in the SED.</p> <p>Refer to Master Response 3.1, Fish Protection, regarding the importance of February-June flows. Please also see response to comment 3239-136 regarding the importance of June flows.</p> <p>Refer to Master Response 2.1, Amendments to the Water Quality Control Plan, and 2.2, Adaptive Management, regarding monitoring program implementation under Adaptive Management.</p> <p>Refer to Master Response 2.5, Baseline/No Project, regarding consistency with the San Joaquin River</p>

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		<p>fact, Staff stated it "anticipated that environmental condition metrics will be considered during the development of monitoring or special studies programs." (Id.) Staff's anticipation that an alternative will be otherwise "considered" is not a reason that it is infeasible to fully analyze in the SED. Further, Staff's anticipation that an alternative will be "considered" when developing monitoring programs does not replace or otherwise satisfy analysis that would be performed if environmental condition metrics were an alternative in the SED. For these reasons, Staff fails to properly disclose and analyze reasonable alternatives.</p> <p>Staff did not adequately explain its refusal to consider the "upstream inclusion" alternative. (SED, at 3-34.) The suggested alternative would require Staff evaluate the impacts of requiring San Joaquin River water users upstream of the Merced River to contribute flows to comply with the Proposed Project. Staff does not state it is infeasible for the State Water Board to consider the "upstream inclusion" alternative. Instead, Staff stated that it would be considering the "need" for "additional flows" from the upper San Joaquin River Basin to "contribute to the narrative LSJR flow objective" "during the next review of the Bay-Delta Plan." (Id.) Therefore, in this circumstance, Staff admitted it plans to evaluate the proposed alternative at a later date. Staff does not provide a reason or other defense as to why the analysis is not included in the current SED. For this reason, Staff failed to properly explain why it is not legally obligated to consider the "upstream inclusion" alternative.</p> <p>Staff did not adequately explain its refusal to consider the "south Delta and lower San Joaquin River" alternative. (SED, at 3-24.) The suggested alternative would require Staff evaluate the impacts of ensuring flows are not rediverted by south Delta and downstream San Joaquin River diversions. Staff states this alternative is addressed through the following language: "The State Water Board will exercise its water right and water quality authority to help ensure that the flows required to meet the LSJR flow objectives are used for their intended purpose and are not diverted for other purposes." (SED, at 3-34.) This language is vague and unclear. If this language represents Staff's intent to implement the Tributary Flow Objective by amending the water right holders between the Tributary compliance point and the Delta to ensure that such water right holders do not divert flow released to meet the water quality objective, Staff must consider the impacts of such an approach. It has not identified or evaluated such impacts. Staff must either consider this approach as an alternative or include it as part of the proposed objective; either way Staff has failed to identify and evaluate the impacts as required by law.</p>	<p>Restoration Program (SJRRP). Please also see response to comment 3239-144 regarding the SJRRP.</p> <p>Refer to Master Response 1.2, Water Quality Control Planning Process, regarding the State Water Board's authorities related to water rights and water quality and for a discussion of the water quality control planning process, including the State Water Board's protection of beneficial uses in the Bay-Delta and tributary watersheds through independent proceedings. Please also see response to comment 3239-148 regarding south Delta diverters.</p>
3239	181	<p>Staff failure to consider reasonably foreseeable methods of compliance is unlawful.</p> <p>Section 3777 requires the SED analyze the reasonably foreseeable methods of compliance. (Cal. Code Regs., tit. 23, § 3777[b](4).) Specifically, this section requires the methods of compliance analysis include "at a minimum all" of the following:</p> <p>"(A) An identification of the reasonably foreseeable methods of compliance with the project;</p> <p>(B) An analysis of any reasonably foreseeable significant adverse environmental impacts associated with those methods of compliance;</p> <p>(C) An analysis of reasonably foreseeable alternative methods of compliance that would have less significant adverse environmental impacts; and</p> <p>(D) An analysis of reasonably foreseeable mitigation measures that would minimize any</p>	<p>Please see Master response 1.1, General Comments, regarding the SED approach to analysis and CEQA requirements for program-level review.</p> <p>Please see Chapter 4, Introduction to Analysis, Section 4.3, Analytical Framework, for a discussion of the SED's approach to reasonably foreseeable methods of compliance.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding WSE modeling assumptions. Please see response to comment 3239-171, for information on the minimum reservoir storage targets.</p>

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		<p>unavoidable significant adverse environmental impacts of the reasonably foreseeable methods of compliance." (Cal. Code Regs., tit. 23, § 3777[b](4).)</p> <p>Staff does not comply with the requirements of section 3777. Instead, Staff assumes a single method of compliance and analyzes only this single method. This single method includes specific WSE Model parameters, such as minimum reservoir storage, flow shifting, and reservoir refill requirements. Staff did not analyze compliance with the Proposed Project without the WSE Model parameters. Because compliance with the required percent of unimpaired flow without including all of the WSE Model parameters is a reasonable foreseeable method of compliance, Staff was required to analyze this method of compliance.</p>	
3239	182	<p>Staff fails to disclose the method of compliance upon which the environmental analysis is based.</p> <p>Staff's discussion regarding the assumptions that drive the WSE Model is deficient. For example, Staff includes a section in which it purports to disclose the WSE Parameters and explain the approach to the WSE Model. (SED, at F.1-13-40.) However, this section is incomplete as Staff fails to include several WSE Model parameters in its discussion of the modeling. For example, flow shifting and minimum allocation fractions are both WSE Model parameters that were not disclosed, but were discovered by reverse engineering the WSE Model. This violates the most fundamental requirements of CEQA, which require Staff disclose sufficient information to facilitate environmental analysis. Staff must revise the SED and identify the method of compliance assumed for the purpose of its environmental analysis.</p>	<p>The State Water Board documented assumptions in the WSE model in Appendix F.1, Hydrologic and Water Quality Modeling, including minimum allocation fractions and flow shifting. Minimum allocation fractions in the model are simply another name for the "minimum diversion" parameter described in Section F.1.2.5, "Calculation of Available Water For Diversion" and shown in Tables F.1.2-23a-c. Flow shifting is described in a subsection of Section F.1.2.7, "Calculation of River and Reservoir Water Balance." Further clarification can be found in Master Response 3.2, Surface Water Analyses and Modeling.</p>
3239	183	<p>The SED analysis is based on a single method of compliance which is unreasonable and unenforceable.</p> <p>All of Staff's environmental analysis of the Proposed Project is based on the WSE Model. Although Staff has taken the position that the Proposed Project could be implemented in various ways, and the WSE parameters represent only one way to implement, Staff only analyzed the environmental impacts of implementing the Proposed Project with WSE Model parameters. As fully described earlier, the WSE Model is based on a series of parameters.</p> <p>Not only did Staff fail to explain these parameters, but, in violation of CEQA, many of these assumptions are not reasonable and/or not within the authority of the State Water Board to implement. For example, it is not reasonable to assume water delivery would be sacrificed in order to maintain reservoir levels. Reservoirs are water storage tools. Staff assumes that in response to water shortages, reservoir levels will be held static. This is not a reasonable assumption. Instead, it is reasonable to assume that in times of shortage reservoir operations would be used more aggressively, i.e., empty and fill more often. It is not reasonable to assume that in times of shortage (or in response to regulatory shortages) reservoirs would not be exercised aggressively, but instead water delivery would be decreased in order to avoid reservoir fluctuation or to maintain reservoir levels.</p> <p>Staff assumes the Proposed Project will reduce water deliveries evenly throughout the region. (See SED, Appx. F.1.) It is not reasonable to assume water delivery would be reduced evenly across the region regardless of water right priority. The rules of water right priority require junior water users be curtailed completely before senior water right holders are affected. (El Dorado Irr. Dist. v. State Water Resources Control Bd. (2006) 142 Cal.App.4th</p>	<p>Appendix G, Agricultural Economic Effects of the Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results, provides an explanation of the WSE model parameters, including a description of the reservoir operations assumptions. Please see response to comment 3239-171, for information on the minimum reservoir storage targets. Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the assumptions used in the WSE model, including discussion of carryover storage.</p> <p>The level of detail in the SED is reasonable and appropriate for a program-level analysis. The State Water Board acknowledges that uncertainty is inherent in any programmatic planning effort of this geographic and temporal scale. However, the State Water Board strived to use best available science throughout the SED, consistent with State CEQA Guidelines. Please see Master Response 1.1, General Comments, regarding State Water Board authorities within the context of the water quality control planning process, including discussion of water rights and reservoir operations and the programmatic nature of the analysis in the SED. Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board protection of beneficial uses in the Bay-Delta through independent water rights proceedings, including discussion of water rights priorities.</p>

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		<p>937, 963-964.) Therefore, the assumption that the proposed reductions would affect all water right holders similarly is unreasonable. It is reasonable to assume that the rule of water right priority would apply and result in the proposed regulations having greatly different impact on junior water right holders compared to senior water right holders.</p>	
3239	184	<p>Staff failed to obtain information in a manner required by law.</p> <p>The State Water Board is required to include all information, comments, or proposed findings relevant to the proposed project or the State Water Board’s compliance with CEQA. (Pub. Resources Code, § 21167.6.) Staff originally noticed it planned to prepare an environmental document to review of the San Joaquin River flow and south Delta salinity requirements on February 13, 2009.</p> <p>In this 2009 NOP, Staff set up a schedule to hold several workshops for the purpose of collecting information required to perform the environmental review. These workshops were subsequently cancelled; Staff did not provide a reason for the cancellation. Despite repeated requests and recommendations from stakeholders, Staff failed to hold a single informational workshop or otherwise provide a forum to collect sufficient information upon which a defensible environmental analysis could be conducted.</p> <p>In addition, Staff did not hold a single scoping meeting in the area affected by the proposed project. Nor did the State Water Board work with local public agencies and water districts prior to the release of the recirculated Staff SED.</p> <p>The SJTA members provided the State Water Board with information in response to the 2012 SED Draft. Staff did not include information submitted by stakeholders in the Phase 1 process. Staff did not address the information in any fashion. Staff never acknowledged the information and did not reject it as prejudicial or incorrect. Nor did Staff incorporate the information into its analysis. Instead, Staff completely ignored the information provided by the regulated community.</p> <p>Staff developed a scientific basis report for Phase 1 which considered the basis for setting flows at Vernalis. Staff included this report as an appendix to the SED. The report was not revised or otherwise recalibrated to address the fundamental change to the Proposed Project which moved the Vernalis compliance points to the Tributaries.</p> <p>In contrast to the Phase 1 process, the Phase 2 process has developed information and science in a deliberate and appropriate manner. On or about January 24, 2012, Staff provided the public with notice that it planned to develop an environmental document to analyze the impacts of the remaining objectives in the Bay-Delta Plan. In order to collect sufficient information to conduct that environmental review, Staff set up a series of workshops. Staff hired an independent facilitator and held workshops over a period of three months. The independent facilitator then drafted a report summarizing the workshops.</p> <p>In 2013, Staff developed a draft scientific basis report and released the report for public comment. In 2014, the Delta Science Program held a series of workshops on flows and stressors. In 2016, the State Water Board held workshops on the modeling tools it was using for Phase 2. Also in 2016, the State Water Board released the scientific report, which it had peer reviewed by the Independent Science Board. The peer reviewed report was released on [Dated] xx, 2016.</p>	<p>Please see Master Response 1.1, General Comments, regarding the public outreach process, including the adequacy of public outreach and notifications, duration of the comment period, and accessibility of public hearings.</p> <p>As discussed in Executive Summary, Section ES10.2, Past Public Review and CEQA Noticing, and Section ES11, Areas of Known Controversy and Changes Made to the 2012 Draft Substitute Environmental Document, the State Water Board considered comments received from public agencies and the public during the scoping and public consultation processes in determining the scope of analysis and content of this SED. Table ES-28 presents a timeline of public involvement for the planning process, public workshops, and CEQA noticing. Appendix A, NOP Scoping and Other Public Meetings, provides a summary of the issues raised by agencies and the public.</p>

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		<p>Due to the lack of process and the SED's failure to analyze information in the administrative record, if the State Water Board were to adopt the Staff draft it would not proceed in a manner required by law.</p>	
3239	185	<p>The failure to identify and consult with local agencies as responsible agencies is unlawful.</p> <p>CEQA defines a "responsible agency" as "a public agency, other than the lead agency, which has responsibility for carrying out or approving a project." (Pub. Resources Code, § 21069; See also Cal. Code Regs., tit. 14, § 15381.) Pursuant to this definition, the Irrigation Districts qualify as responsible agencies because they will be primarily responsible for carrying out the Proposed Project. (See SED, Appx. K, at 2-3 [noting that each LSJR tributary will be responsible for 35 percent unimpaired flow].)</p> <p>As the lead agency, the State Water Board is required to consult with responsible agencies prior to determining whether the lead agency may perform a negative declaration or will be required to perform a more rigorous environmental review. (Pub. Resources Code, § 21080.3(a).) The lead agency must also solicit comments from responsible agencies regarding the choice and content of environmental documents. (Pub. Resources Code, §§ 21080.4(a) [requiring solicitation of comments on "the scope and content of the environmental information that is germane to the statutory responsibilities of that responsible agency" when the lead agency determines an environmental impact report is required for the proposed project]; 21104(a) [requiring consultation with, and solicitation of comments from, responsible agencies prior to completing an environmental document]; See also Cal. Code Regs., tit. 14, §§ 15082[a], 15086.)</p> <p>Staff did not comply with these consultation requirements. Staff failed to consult with the Irrigation Districts prior to the release of the Phase 1 SED regarding the extent or content of environmental review. Quite the opposite, Staff put all communication and information provided by the Irrigation Districts into a folder titled "Unsolicited Comments." (www.waterboards.ca.gov/waterrights/water-issues/programs/bay-delta/bay-deltaplan/waterquality-control-planning/index.shtml.) Thus, Staff openly concedes it did not solicit the participation and comments of responsible agencies. Staff failed to proceed in the manner required by law; the lack of consultation and communication with responsible agencies is a blatant violation of CEQA requirements.</p>	<p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board consultation.</p>
3239	186	<p>The SED failure to properly consider mitigation measures is unlawful.</p> <p>The State Water Board is precluded from approving a proposed project with significant environmental effects if "there are feasible alternatives or mitigation measures" that could substantially lessen or avoid those effects. (Cal. Code Regs., tit. 23, § 3777[b][3]; Pub. Resources Code, § 21002; Citizens for Quality Growth v. City of Mount Shasta (1988) 198 Cal.App.3d 433, 439 ("Mount Shasta"); Mountain Lion Foundation v. Fish & Game Commission (1997) 16 Cal.4th 105, 134.)</p> <p>For each significant impact, Staff is required to 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 Old City Assn. v. City Council (1991) 229 Cal.App.3d 1011, 1027 ("SOCA"); Mount Shasta, at 439; Cal. Code Regs., tit. 23, § 3777[b][3]; Pub. Resources Code, § 21002.) Staff has not</p>	<p>Please see Master Response 1.1, General Comments, regarding the SED approach to analyses, including mitigation measures.</p>

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		provided the requisite mitigation analysis.	
3239	187	<p>The SED summarily dismisses feasible flow mitigation.</p> <p>In considering mitigation measures, Staff summarily dismisses the consideration of flow as a mitigation measure. (SED, 5-93.) Specifically, Staff states that because other alternatives consider various percentages of unimpaired flow, Staff cannot "independently apply" additional flow as mitigation because it would be "inconsistent with the terms" of the alternative. (Id.) This rationale is unsupported.</p> <p>First, Staff does not state that it is not feasible to consider additional flow, only that it would be inconsistent with the alternative. This is not a sufficient reason for failing to consider additional flow. Second, the statement that other alternatives consider additional flow is only true in terms of percentages of unimpaired flow. There are several flow measures that Staff did not consider including, but not limited to, pulse flows, highly variable flow regimes, outmigration flows, and flow regimes by water year type. Because Staff fails to properly evaluate different flows as mitigation measures, if the State Water Board adopts the Staff draft, it will not proceed in a manner required by law.</p>	<p>Please see Master Response 1.1, regarding mitigation as defined by CEQA. The text the commenter is referring to was in the Draft 2012 SED. As was described in the notice of availability, the Draft 2012 SED was wholly replaced by the Draft 2016 SED. The language the commenter discusses is not found in the Draft 2016 SED, Chapter 5, Surface Hydrology and Water Quality, therefore this comment is no longer applicable. Chapter 3, Alternatives Description, Section 3.3.10, LSJR Flow Objectives and Program of Implementation, describes flow objectives that were considered, but rejected as infeasible. Please see Master Response 2.2, Adaptive Implementation, regarding the flexibility in the program of implementation to adjust, shape, and shift flows using adaptive methods in order to improve the functions of those flows and better achieve the water quality objective. Please see Master Response 1.2, Water Quality Control Planning Process, regarding State Water board protection of beneficial uses through independent proceedings.</p>
3239	188	<p>Staff fails to consider feasible non-flow mitigation measures.</p> <p>Staff does not properly consider non-flow mitigation measures. Staff fails to properly analyze potential mitigation measures for increased prey vulnerability. For instance, Staff fails to evaluate a predator suppression program as a mitigation measure. By failing to consider predator suppression, the State Water Board cannot adopt the Staff draft and proceed in a manner required by law.</p>	<p>Please see response to comment 3239-186, for information regarding mitigation measures. As described in Master Response 2.1, Amendments to the Water Quality Control Plan, and Master Response 5.2, Incorporation of Non-Flow Measures, non-flow measures are included in the plan amendments as recommendations.</p>
3239	189	<p>Staff fails to properly mitigate temperature impacts.</p> <p>During the December 5, 2016 Workshop, Staff acknowledge that the Proposed Project results in temperature impacts. Staff fails to disclose the temperature impacts in the SED. Instead, Staff attempts to mitigate the temperature impacts by building in constraints into the Proposed Project, such as minimum storage requirements. This is a violation of CEQA. Staff was required to disclose any temperature impacts from the Proposed Project. Only after this disclosure is Staff allowed to consider mitigation for such impacts. Because Staff failed to disclose the temperature impacts, Staff also failed to appropriately develop mitigation for such impacts. Due to this failure to comply with CEQA, the State Water Board cannot adopt the Staff draft and proceed in a manner required by law.</p>	<p>Please see response to comment 3239-171..</p>
3239	190	<p>The failure to adequately analyze the environmental impacts of climate change is unlawful.</p> <p>Staff fails to analyze how climate change will affect the Proposed Project and the environment. Staff includes a section that generally describes the anticipated impacts of climate change. In this section, Staff describes that higher, warmer flows are likely, flood events will increase, and snow pack will be reduced. (SED, at 14-52.) However, when it comes time to analyze how these changes will affect the Proposed Project or the environment, Staff provides no analysis. Staff simply states that the adaptive management process will appropriately respond and address climate change impacts.</p> <p>This lack of analysis is a problem for several reasons. First, it fails to identify the impacts of climate change of the Proposed Project; so it is unclear whether climate change will require</p>	<p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding the modeling of the 82-year period, the adequacy of the model inputs and parameters, and climate change as it relates to the quantitative analysis. Please see Master Response 3.7, Greenhouse Gas Emissions and Analysis regarding quantifying greenhouse gas emissions and the scope and approach to the analysis in Chapter 14, Energy and Greenhouse Gases. The State Water Board appropriately analyzed the potential effects of the LSJR alternatives in Section 14.4.3, Impacts and Mitigation Measures, LSJR Alternatives, GHG Emissions/Climate Change, under Impact EG-3: Generate GHG emissions, either directly or indirectly, that may have significant impact on the environment, and Impact EG-4: Conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing GHG emissions.</p>

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		<p>more or less flow under the Proposed Project. For instance, Staff does not consider whether flooding will become more frequent or severe as a result of the increased flow from the proposed project, combined with rising sea levels and earlier snowmelts caused by climate change. Nor does Staff analyze impacts of the proposed project and climate change to reservoir storage or aquatic resources.</p> <p>Second, the failure to identify impacts also gives rise to the failure to determine whether significant impacts will occur and whether mitigation is necessary. Third, the analysis simply assumes any impacts that arise will be taken care of by adaptive management. The failure to identify, disclose and analyze the impacts is a fundamental violation of CEQA requirements. CEQA does not allow lead agencies to simply promise to address problems if they arise; rather the entire point of CEQA is to identify and evaluate potential future impacts.</p> <p>Staff's failure to properly disclose and analyze climate change is particularly egregious because of the State Water Board's recent adoption of its Climate Change Resolution, which commits the State Water Board to properly analyzing climate change impacts for any project it undertakes. Because Staff does not analyze climate change impacts of the proposed project, the State Water Board cannot adopt the Staff draft and proceed in the manner required by law.</p>	
3239	191	<p>Failure to evaluate impacts outside the plan area is unlawful.</p> <p>Staff failed to consider environmental impacts outside the Plan Area. Specifically, Staff failed to consider both impacts to upstream water right holders and facilities and downstream water right holders and facilities. Staff defines the area outside the Plan Area that may be affected by the Proposed Project as the "extended plan area." Staff explains "impacts in the extended plan area are addressed in the SED as appropriate." (SED, at 4-7.) This approach results in a significantly deficient analysis.</p> <p>Staff simply takes the position that impacts in the extended plan area are not worth environmental analysis. For example, Staff states "given the small volume of water held in non-hydropower post-1914 rights for consumptive use in the extended plan area compared to the volume held in non-hydropower post-1914 water rights used below the rim dams, most of the effect of implementing LSJR alternatives would occur at, or downstream of, the major rim dams in the three tributaries stream water users and downstream water users from the Plan Area." (SED, at 4-7.)</p> <p>Staff's failure to analyze impacts in the extended plan area is incorrect and unlawful for several reasons. First, Staff's premise that the projected size of impacts is not worth evaluating the impacts is unsupported and puts the cart before the horse. Only after Staff has evaluated the impacts of the Proposed Project on the extended plan area should it provide comment or conclusion regarding such impacts. Staff failed to evaluate the impacts to the extended plan area and cannot hide behind its unsupported conclusion that such impacts are not worth evaluating.</p> <p>Second, the assumption that the impacts will be small is not true. There are junior water right holders and water facilities upstream of the Plan Area that will be devastated by the Proposed Project. For example, on both the Tuolumne and Stanislaus Rivers there are reservoir facilities and water right holders that are junior to downstream senior water right holders. The Proposed Project will require these junior water right holders to cease all diversions before senior water right holders begin to contribute flows to the Proposed</p>	<p>Please see Master Response 1.1, General Comments, regarding the SED approach to analysis, watersheds considered, and impacts on resources in the extended plan area.</p> <p>Please see Master Response 1.2, Water Quality Control Planning Process, regarding implementation of the plan amendments through water rights proceedings, including discussion of water rights priorities.</p> <p>Please see Master Response 8.5, Assessment of Potential Effects on the San Francisco Bay Area Regional Water System, regarding potential water supply reductions to the City and County of San Francisco (SFPUC) as a result of implementation of the plan amendments and the actions that SFPUC could take to balance available water supply with demands within the service area if water supplies are reduced.</p>

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		<p>Project. This means that an impact of the Proposed Project may result in facilities like New Spicer Reservoir being emptied and all water use in the region served by that facility would be reduced to extreme near-zero delivery levels. Certainly the volume of water from this impact would be less than emptying New Melones Reservoir. However, the devastation to the facility and the community dependent on that water supply is significant and must be analyzed in the SED.</p> <p>Third, Staff's assumption that upstream impacts will be small is contradicted by the fact that Hetch Hetchy and the CCSF system is in the extended plan area. Staff recognizes that it cannot simply ignore the Hetch Hetchy system as an upstream facility with minor impacts and performs a special analyses of potential impacts. (See SED, Appx. L.) However, there are fundamental flaws in this analysis. Primarily, Staff incorrectly assumed that CCSF water supply would be augmented by transfers from Turlock and Modesto Irrigation Districts. (12/12/17 Workshop, at 194.) This assumption was made despite CCSF informing Staff that is not a viable assumption and not how the system would operate.</p> <p>In addition, Staff's analysis did not actually consider impacts to CCSF. Instead, the assumption of transfer allowed Staff to largely avoid analyzing any impacts to CCSF, but rather just assumed those impacts would be shouldered by Turlock and Modesto Irrigation Districts shorting agriculture. (12/12/17 Workshop, at 216 [explaining that the analysis assigned the full shortage to agriculture and that was how Staff accounted for CCSF impacts.]) Because the entire CCSF analysis is premised on not analyzing impacts to CCSF, but incorrectly assigning them to the irrigation districts, this analysis is unsupported and unlawful.</p> <p>Fourth, Staff's treatment of the extended plan area as one geographic unit is not supported. The areas upstream of the Plan Area and downstream of the Plan Area are different and the Projected Project would impacts these areas differently. The Proposed Project's potential impacts to upstream water users is discussed above. However, downstream water users may also be impacted by the Proposed Project. Staff recognizes that in order to protect released flow from the diversion by junior water users downstream that some action must be taken. (SED, at ES-23.) Staff failed to analyze the impacts of cutting off junior water users during times when senior water right holders were releasing water required by the Proposed Project. This lack of analysis is a significant and unlawful omission.</p> <p>Fifth, the SED includes a chart of summarized significance determinations for the extended plan area. (SED, at 18-6.) This chart indicates that Staff has made determinations of impact in each chapter of the SED. This chart is misleading because it indicates that Staff performed analyses and made a determination. Staff did not perform the requisite analysis and these determinations are not based on supported analyses. To the contrary, these determinations are based on unsupported conclusions, no analysis, and bold and dismissive statements. Staff must evaluate the impacts of the Proposed Project on the extended plan area.</p>	
3239	192	<p>Statements of overriding consideration are unlawful.</p> <p>If the State Water Board is to approve a project that has significant and unavoidable impacts, it must first adopt a statement of overriding considerations. CEQA requires a statement of overriding considerations to be supported with substantial evidence that a project will confer benefits. (Woodward Park Homeowners Ass'n, Inc. v. City of Fresno (2007) 150 Cal.App.4th 683, 718.) General benefits are not sufficient; the State Water Board is required to perform a good-faith balancing and find the proposed project outweighs</p>	<p>The statements of overriding considerations referenced by commenter did not exist at the time this comment was made.</p> <p>The SED contains substantial evidence regarding the benefits and impacts of the project. For example, with respect to benefits, Chapter 7, Aquatic Biological Resources, provides a detailed analysis of the potential impacts on aquatic resources. Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, provides an analysis of the benefits to native fish populations from</p>

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		<p>significant and unavoidable impacts. (Id.)</p> <p>In other words, the State Water Board must explicitly find the fish and wildlife benefit outweighs the significant impacts to groundwater, agriculture, water supply, service providers, and the economy. Because Staff has not identified the Proposed Project's benefits to fish and wildlife, the State Water Board cannot support such a determination. Without information to support a statement of overriding consideration, the State Water Board will not be able to proceed in a manner required by law.</p>	<p>increased flows from February 1 through June 30.</p>
3239	193	<p>The failure to evaluate the proposed changes to the October flow requirements is unlawful.</p> <p>The program of implementation suggests Staff intends the Proposed Project to change the responsibility for meeting the October flow objective. (SED, Appx. K, at 34.) However, Staff makes no mention of this reallocation in the environmental analysis. Changing the allocation of responsibility for meeting the October flow objective is not without consequence; it has the potential to impact water supply effects, aesthetics, hydrology, groundwater pumping, and fish and wildlife.</p> <p>A CEQA document "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 404-405.) Without analyzing the environmental effects of changing the responsibility to meet the October flow objective, the SED is deficient. If the State Water Board adopts the Staff draft it will not proceed in the manner required by law.</p>	<p>As described in Appendix K, Revised Water Quality Control Plan, the October pulse flow element of the Program of Implementation describes a process for evaluating (monitoring and special studies) the current October pulse flow objective "to determine what, if any, changes should be made to the October pulse flow objective and its implementation." Appendix K goes on to state, "[t]he 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>
3239	194	<p>The SED is not supported by substantial evidence.</p> <p>Staff must support its conclusions, findings, or determinations with substantial evidence. (Uphold Our Heritage v. Town of Woodside (2007) 147 Cal.App.4th 587, 595-596; See Pub. Resources Code, § 21168.) Substantial evidence requires "enough relevant information and reasonable inferences from [the information in the administrative record] that a fair argument can be made to support a conclusion." (Bakersfield Citizens for Local Control v. City of Bakersfield (2004) 124 Cal.App.4th 1184, 1198 [quoting Association of Irrigated Residents v. County of Madera (2003) 107 Cal.App.4th 1383, 139].) Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinions supported by facts. In contrast, argument, speculation, unsubstantiated opinion or narrative, or evidence which is clearly inaccurate or erroneous does not amount to substantial evidence. (Pub. Resources Code, § 21082.2(c).) Staff fails to support much of the analysis in the SED with substantial evidence.</p>	<p>Please see Master Response 1.1, General Comments, for a discussion regarding substantial evidence in the SED.</p>
3239	195	<p>The Water Supply Effects Model is not supported by substantial evidence.</p> <p>The WSE Model is the model that is supposed to estimate the water supply impacts from the proposed project objective. However, the WSE Model does not model the Proposed Project, but, rather, models a specific set of constraints that are not included in the Proposed Project. The Proposed Project is comprised of the Tributary Flow Objective, which requires a range (30-50 percent) of unimpaired flow at the compliance points on each of the Stanislaus, Tuolumne, and Merced Rivers. The WSE Model makes several significant operational assumptions that are not part of the Proposed Project. These assumptions or "parameters" control the WSE Model and its results. Each of the WSE Model parameters</p>	<p>Please see Master Response 1.1, General Comments, for additional information about substantial evidence and the adequacy of the SED. "Substantial evidence" means "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." (Cal. Code Regs., tit. 14, § 15384, subd. (a).)</p> <p>Please see Master Response 2.1, Amendments to the Water Quality Control Plan, regarding the project description and complete definitions of the flow objectives. The plan amendments are the proposed project. The plan amendments include a new LSJR narrative objective, numeric LSJR flow objectives, and revised water quality objectives for the southern Delta.</p> <p>The narrative and numeric LSJR flow objective and program of implementation work together to achieve the</p>

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		<p>includes fundamental flaws.</p>	<p>goal of reasonably protecting fish and wildlife beneficial uses in the LSJR.</p> <p>Please refer to Master Response 3.2, Surface Water Analyses and Modeling, for additional information regarding WSE model parameters, constraints, and objectives and how these work together to determine how much water is available and allocated in a given year. All water balance models have constraints and parameters that govern water allocation. It is necessary and appropriate for the analysis to use model parameters, constraints, and objectives.</p> <p>Model constraints are required to meet the narrative LSJR objective and are reasonable estimations of operational choices in the WSE modeling analysis. These constraints do not need to be part of the proposed LSJR objectives but are necessary for a reasonable analysis of the water supply effects.</p>
3239	196	<p>Monthly Average Parameter</p> <p>The WSE Model uses a 30-day average to model the impacts of the proposed unimpaired flow objective. The use of the 30-day average does not reflect the Proposed Project because the Tributary Flow Objective requires implementation on a 7-day running average. (SED, Appx. K, at 18.) Running the model on a 30-day average smooths variances in hydrology that would occur on a 7-day average. In other words, the thirty day run would not reflect the hydrology and impacts of the Proposed Project’s highs and lows that would occur in sending down unimpaired flow on a weekly average.</p> <p>This smoothing effect is reflected in the slide presented by the United States Fish and Wildlife Service (USFWS) at the January 3, 2017 hearing for Phase 1 [ATT48]. The slide shows the impact of using different time periods over which to average the unimpaired flow. The slide shows the daily unimpaired flow, the 3-day average and the 7- day average. The 7-day average reflects some hydrologic variation, but smooths the impacts of the hydrological event.</p> <p>The 30-day average is not shown on this graph, but is even more extreme and creates a flat line that only minimally reflects specific hydrologic events. This is because 30-day average would only reflect the average of all flow events and daily flows over the 30-day period, without reflecting the varied nature of actual unimpaired flows. This kind of smoothing has significant impacts when estimating environmental impacts. As the USFWS service presenter noted, using a longer running average fundamentally changes the hydrology and often "decouples" the benefits of unimpaired flow from the potential fish benefits such as higher flows, turbidity, cued migration and others. (January 3, 2017 Phase 1 Hearing, at 2:36:30.)</p> <p>This slide resonated with the State Water Board members, specifically member Steve Moore. In response to the issue of averaging flows and in response to the slide [ATT48], Mr. Moore stated: "I appreciate this, this gets to the heart and soul of why I am doing this job . . . to better engineer biology . . . and this is a key point. Not only are you missing benefits when the natural cues are happening . . . but there is a bunch of water that will not get the benefit because we have averaged based on an operational constraint that we are imagining . . . we are imagining that we have to stay with a 7 day approach. We can do better." (January 3, 2017 Phase 1 Hearing, at 2:37:15.)</p> <p>This comment and concern were not reflected by Staff. In direct contradiction to Mr. Moore’s statements and concerns, Staff used a 30 day running average to evaluate the impact of the Proposed Project, despite the availability of models that could run daily averages. When questioned regarding the use of the 30 day average, Staff affirmed its</p>	<p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding CALSIM, WSE, and using a monthly time step and model implementation of percent of unimpaired flow objectives.</p> <p>The modeling for the SED is credible because it is based on reasonable assumptions that facilitate comparative analyses between baseline and alternative conditions. The WSE model inputs were derived from the established California Central Valley operations model CALSIM.</p> <p>At the watershed scale, WSE model results are comparable to evaluations of changes in available supply by other models, for example, CALSIM or the water balance models for individual tributaries developed by irrigation districts. The WSE model is an appropriate and sufficiently-correct tool to reasonably represent and disclose types of potential effects associated the amendments to the water quality control plan.</p> <p>The purpose of the WSE model analysis is to evaluate changes in water supply and the potentially significant impacts that could occur because of those changes. The total volume of water supply effects is the same whether the model uses a monthly or a 7 day average. That means there is no change in impacts in terms of water supply effects and therefore, the model provides relevant information and reasonable inferences from this information in support of the significance determinations.</p> <p>Please see Master Responses 3.1, Fish Protection, for responses to comments regarding using a monthly flow model with a sub-daily temperature model. Master Response 2.2, Adaptive Implementation, and Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the LSJR flow objective averaging period.</p>

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		<p>approach:</p> <p>"Bill Paris: Did I understand you guys right, you haven't modeled the proposal? Is that correct? The proposal is not based on monthly and you are presenting monthly. Have you modeled it in a less than monthly time-step? And if so can we see that data and information?</p> <p>"Les Grober: No we only modeled it at the monthly time-step. Because this intended to be a, uh, budget of water, if you will. Really this is getting back to the adaptive implementation, but, it's not, we didn't do a daily model for showing this.</p> <p>"Bill Paris: Is there a daily model available?</p> <p>"Les Grober: Not that we have run. Except what we have run for temperature modeling.</p> <p>"Will Anderson: The temperature model takes the monthly and it runs it on a daily time-step. So there is some smoothing there, but it is essentially the monthly averages.</p> <p>"Les Grober: So, again, this speaks to that this is not intended to optimizing, it shows what it could be if you look at it very broadly, programmatically. So, for the temperature, of course you would see some other variation potentially depending on how this is operated. If you had rigid adherence with the 7-day running average, you would expect to see somewhat different results. But we have looked at the monthly, a very course monthly and then the course dis-aggregation of monthly into daily for the temperature effects.</p> <p>"Bill Paris: Sure, but uh, I guess I would flip that around and say from the impact perspective, modeling what you are going to require the regulated community to comply with would be a more accurate depiction of what those impacts might be.</p> <p>"Les Grober: Are you suggesting that it would result in a different quantity of water at a 7-day average than on a monthly?</p> <p>"Bill Paris: Yeah.</p> <p>"Les Grober: Ok. You can provide that comment.</p> <p>"Chris Shutes: Chris Shutes in response to Mr. Paris. For the, uh, Don Pedro relicensing, Dan Steiner built a dandy daily model . . .</p> <p>"Les Grober: Again, and I would, we are happy to receive comments on this as part of the hearing, and the written comments, so I appreciate all of the comments, but bringing it back to this is a programmatic analysis and any such comments would have to demonstrate what, what different result one would be expecting to achieve and how it would be . . . I can imagine it would be in the details it would be different but, why, what, why running this on a monthly timestep is insufficient to demonstrate what can be achieved broadly in terms of temperature improvements and broadly in terms of uh the water supply effects." (12/5/2016 Workshop, at 3:31:30.)</p> <p>This dialogue above differs so drastically from the dialogue between Mr. Moore and USFWS. State Water Board members are on record dedicated to understanding the impacts of the Proposed Project on a daily average. In stark contrast, Staff takes the position that precision is not only not necessary, but that stakeholders would need to prove to Staff why the</p>	

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		<p>imprecise approach Staff is us using is not sufficient before a more precise analysis would be implemented.</p> <p>It is clear that Staff and the State Water Board members are not on the same page with regard to the WSE Model 30-day running average. The State Water Board members are correct to be concerned about the averaging of hydrologic events; the stated purpose of the unimpaired flow approach is based on mimicking the natural hydrograph. The WSE Model run of a 30-day average does not evaluate the Proposed Project and does not reflect the impacts of the unimpaired flow objective. For this reason, the WSE Model is not supported by substantial evidence.</p>	
3239	197	[ATT48: Slide presented by USFWS at the 1/3/21017 hearing for Phase 1.]	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.
3239	198	<p>Reservoir Minimum Carryover Parameter</p> <p>The WSE Model assumes the minimum reservoir carryover storage parameters of New Exchequer at 300,000 and New Melones at 700,000, and New Don Pedro Reservoir at 800,000. (SED, at F.1-34-38.) There are several problems with this parameter. First, the parameter is not part of the Proposed Project. Minimum reservoir levels are not listed as objectives. And although minimum reservoir levels are referenced in the plan of implementation, the reference only states that the State Water Board will implement some mitigation measure to reduce temperature impacts and reservoir minimums is one such tool. For these reasons, minimum reservoir storage is an implementation option, but is not part of the Proposed Project.</p> <p>Second, it is not clear how Staff developed the minimum reservoir storage levels. When asked about the development of the minimum reservoir levels, Staff provided several reasons the minimum levels were developed. For example, Staff stated, "The reason for selecting the carryover storage that we did was to minimize those temperature effects that were incurred by drawing the reservoir down further." (12/5/16 Workshop, Les Grober, at 2:23:56-2:24:08.)</p> <p>Staff also stated that reservoir storage is in place to increase reliability of water supplies. (12/5/16 Workshop, Dan Worth, at 2:28:00-2:29:09 ["There is reliability to having carryover storage, to where if you draw it all the way down and then have increased requirements in a successive year then that would be . . . uh . . . have less available for consumptive use in the following year as well.].) Staff also stated that reservoir minimum requirements were necessary to prevent reservoirs from going dry. Specifically, Staff stated if the Proposed Project were implemented without a minimum reservoir requirement, "the first thing that you see is that if you keep everything else the same, the reservoir runs dry. So we had to make assumptions that we have described and disclosed about reservoir operations that prevent those things like running reservoirs dry or temperature impacts . . . it prevents those from occurring." (12/5/16 Workshop, Les Grober, at 3:02:05-3:02:27.)</p> <p>However, providing the general reasons for developing minimum reservoir requirements does not actually disclose how Staff developed the specific numeric minimum storage levels. When pressed further on the development of reservoir levels, Staff backed away from the minimum reservoir levels, stating: "The reason for not including it as an explicit amount or explicit requirement is . . . because we haven't optimized it, so we don't want to presume and establish any fixed number that wouldn't be a better number." (12/5/16 Workshop Les</p>	<p>Please refer to Master Response 3.2, Surface Water Analyses and Modeling, for responses to comments regarding the hydrologic modeling process including the determination of reservoir parameters, such as reservoir carryover storage, in alternatives.</p> <p>The SED analyzes the proposed project. The proposed project includes the LSJR narrative and numeric flow objectives and the program of implementation. The narrative and numeric objectives work together to achieve the goal of reasonably protecting fish and wildlife beneficial uses in the LSJR. The SED analyzes the proposed project with the narrative and numeric objectives working together within the adaptive management framework outlined in the program of implementation. Contrary to what is stated in the comment, the program of implementation requires carryover storage targets or other requirements to help ensure that providing flows to meet the flow objectives will not have adverse temperature or other impacts on fish and wildlife. This is part of the plan amendments even if it is not stated as a prescriptive numeric requirement. As a result, it was necessary to evaluate a reasonable representation of such requirements for purposes of the environmental analysis.</p> <p>Models are used in the SED to describe and compare the potential effects of the baseline condition and proposed LSJR project alternatives. The WSE model describes and compares water supply effects and river flow effects of the baseline and LSJR alternatives. The HEC-5Q model uses WSE model results to describe and compare the effects of baseline and LSJR flow alternatives on river water temperature. Modeling details are disclosed in SED Appendix F.1 and further explained in Master Response 3.2, Surface Water Analyses and Modeling. Model assumptions, parameters, constraints, and objectives are necessary for a reasonable analysis of the water supply effects. The SED analysis uses reasonable models and modeling assumptions and guidelines to show realistic potential results of the proposed project, including examples of adaptive methods, in order to evaluate the potentially significant environmental impacts of the plan amendments.</p> <p>The WSE model and HEC-5Q model were used together to describe the effects of LSJR alternatives that meet the LSJR numeric objective and narrative, objective. Meeting the narrative objective was interpreted as not allowing exceedance of EPA optimal temperature criteria more than 10% more of the time compared to baseline, see SED Chapter 19 and Master Response 3.1, Fish Protection. This iterative process is described in Master Response 3.2, Surface Water Analyses and Modeling del, in the section explaining the hydrologic modeling steps.</p> <p>The volume of water available for diversion in a given year is determined by a model algorithm. Any model requires an algorithm that determines the volume of available water to allocate under various hydrologic conditions and rational storage scenarios, incorporating parameters that constrain reservoir operations. LSJR</p>

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		<p>Grober, at 2:31:50-2:32:10.)</p> <p>This explanation makes no sense, because, of course, Staff did select "explicit amounts" and the inclusion of "explicit amounts" in the modeling control much of the analysis in the SED. Thus, the lack of disclosure in the SED and Staff's inability to explain the development of minimum reservoir levels reflects that Staff did not have a specific method for developing the minimum reservoir storage requirements, but rather, based the requirements on general estimates vaguely related to avoiding temperature and water supply impacts. The SED is required to be supported by substantial evidence. The development and reliance upon minimum reservoir levels is not supported by substantial evidence.</p> <p>Third, it is not clear whether the minimum reservoir requirements are required or whether they are non-binding targets. Some Staff members suggest that the minimum reservoir levels are guidelines or targets. (12/5/16 Workshop, Will Anderson, at 2:07:40--["End of September storage guideline, which is not a hard and firm . . . requirement, it is a guideline."].) However, other Staff state more definitively that the reservoir levels are requirements. For example, Staff stated that the program of implementation includes carryover storage requirements. (12/5/16 Workshop, Les Grober, at 2:31:35-2:31:46 ["We do have in the program of implementation that there would be some carryover requirements included."].) Regardless of the inconsistent characterization by Staff, the WSE Model assumes the minimum reservoir levels are met.</p> <p>Fourth, it is not clear how Staff plans to implement the minimum reservoir level requirement. The Tributary Flow Objective does not include minimum reservoir levels. (SED, Appx. K.) The method through which Staff assumes that such minimum level requirements will be implemented is not clear. Staff states that it will implement minimum reservoir requirements through a "water rights proceeding." (SED, at 5-64.) However, Staff does not identify the authority through which Staff will rely upon to implement the minimum reservoir requirements. The Irrigation Districts take the position that no such authority exists. Without disclosure of the authority under which the State Water Board is able to implement the proposed minimum reservoir requirements, it appears that the WSE Model relies on an unenforceable assumption that minimum reservoir levels will be achieved.</p> <p>Fifth, the WSE Model relies upon the minimum storage requirements, which are "necessary for the analysis" to work. (12/5/16 Workshop, Will Anderson, at 2:24:45-2:25:10.) As Staff explained, there is "a need for storage rules or targets to keep the reservoirs spilling cold water in particularly the summer time period and the fall." (2:51:05-2:51:22.) Without the rules, the temperature impacts of the Proposed Project would increase the number of days that temperature targets are not met. Such a result would not provide the alleged protection to fish and wildlife, which is the purpose of the Proposed Project.</p> <p>Sixth, Staff never analyzed the results of the Proposed Project without the minimum reservoir requirements. Because the minimums are not part of the objectives, but rather are just a WSE Model parameter, and Staff did not run the model without that parameter, this means that Staff has not analyzed the impacts of the Proposed Project.</p> <p>Further, Staff has struggled with the transparency and disclosure of the results of running the WSE Model without the assumed minimum reservoir requirements. At the same workshop, one Staff member stated Staff has run a no-reservoir-minimum, stating, "The work that was done there pre-dates me a little bit and we just went back since last Tuesday and we have seen the interest in that and we have a re-run that . . . so yes, it was done."</p>	<p>alternatives represented within the WSE model are examples of system reoperation that maximize water supply reliability after meeting the LSJR numeric and narrative objectives.</p> <p>WSE model analyses include reservoir and allocation parameters as guidelines to represent operation of the water supply system in baseline and to meet the narrative and numeric LSJR flow alternatives. The storage and allocation parameters include carryover storage, maximum allowable draw from storage, and minimum diversion allocation. Development of these parameters is explained in Master Response 3.2, Surface Water Analyses and Modeling, see the section describing reservoir operation, reoperation, and carryover storage.</p> <p>The carryover storage guideline, the maximum allowable draw from storage, the reservoir refill parameter, and the minimum allocation fraction parameter all work together to provide a reasonable and rational representation of maximizing water supply reliability and minimizing drought effects after meeting the LSJR narrative and numeric objectives. Parameters were adjusted iteratively in consideration of the LSJR narrative objective and temperature effects. Stated another way, a modeling parameter that resulted in unacceptable temperature effects would not meet the narrative objective and therefore would not reasonably represent the plan amendments. Therefore, it was necessary to develop a parameter, for the purposes of modeling a reasonable representation of the plan amendments, that met the requirements of the plan amendments.</p> <p>Appendix K states that the State Water Board may include reservoir carryover storage targets in implementation actions such as water rights and water quality proceedings. Please refer to Master Response 1.2, Water Quality Control Planning Process, for responses to comments regarding State Water Board authority under Porter-Cologne Water Quality Control Act to implement Bay-Delta Plan objectives and the LSJR plan amendments. Please also refer to the section that describes the distinction between the program of implementation and implementation of objectives through water rights and water quality proceedings.</p> <p>The scenarios presented in the SED and modeled in the WSE model, do not represent all possibilities of scenarios that may meet the objectives. The scenarios presented in the SED present a conservative approach to meeting the objectives. Please refer to Master Response 3.2, Surface Water Analyses and Modeling, for additional information about adaptive implementation.</p> <p>The SED analysis considers the effects to water supply and river temperature beyond the months of February through June to adequately represent potential effects for comparative analysis. Application of model parameters and objectives outside the time period of the proposed project does not require re-noticing under CEQA. Similarly, analysis, description, and disclosure of effects outside the proposed LSJR flow objective time period does not require re-noticing under CEQA.</p> <p>The SED adequately identifies the significant effects of the proposed plan amendments at hand, while deferring the development of detailed site-specific information, such as reservoir storage requirements, to future project-specific review. The SED has been prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes into account environmental consequences (Cal. Code Regs., tit. 14, § 15151). Accordingly, the State Water Board made reasonable assumptions regarding the implementation of the plan amendments and evaluated environmental impacts in a broad, programmatic way.</p> <p>Please refer to Master Response 1.2, Water Quality Control Planning Process, for responses to comments regarding State Water Board authority under Porter-Cologne Water Quality Control Act and implementation of the LSJR flow objectives.</p> <p>Many WSE and HEC-5Q modeling exercises were completed in the process of producing the SED. Master Response 3.2, Surface Water Analyses and Modeling, explains this iterative process in the section describing</p>

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		<p>(12/5/16 Workshop, Will Anderson 2:33:30-.) While other Staff, at a later Workshop, stated the opposite, that the Staff has not yet run a no-reservoir-minimum. In responding to a question on modeling without reservoir restraints: "We were unable to get those sensitivity runs, so we are not going to be presenting them today." (12/12/2016 Workshop, 80:13-.)</p> <p>Seventh, the proposed reservoir minimums are year round and thus appear to attempt to regulate outside the February through June regulatory period. Regulation of flows or reservoir operations outside this time period has not been noticed by the State Water Board. In order to properly effectuate a regulation outside the regulatory period, the State Water Board would need to re-notice the process and include the reservoir storage regulation in such a notice.</p>	<p>hydrologic modeling steps.</p> <p>An additional illustrative example of WSE model and HEC-5Q model results showing the impact of removing reservoir carryover storage guidelines after releasing the 2016 SED and after the administrative hearings began on November 30, 2016. These results were presented on a slide in a presentation provided on January 3rd, 2017 by State Water Board staff. Furthermore, many examples of river water temperature impacts of low reservoir storage can be observed throughout the historical record, particularly in the drought years 1991-1992 and 2014-2015, and particularly for New Melones and New Exchequer Reservoirs. Accordingly, the illustrative example shows temperature impacts to river water temperatures in the absence of sufficient carryover reservoir storage.</p>
3239	199	<p>Restricted Storage Release Parameter</p> <p>The WSE Model also limits the amount of water that can be drawn from storage that is more restrictive than the minimum storage level requirement. This parameter controls the amount of water released from storage and limits water right holders' release, limiting releases to only 50 percent of the water available for release, i.e., the amount above the minimum reservoir requirement. For example, if reservoir storage is at 1,200,000 in New Don Pedro, the storage release parameter would prohibit Turlock and Modesto Irrigation Districts from releasing the 400,000 acre feet available from storage. Instead, the storage release parameter would restrict the Irrigation Districts to releasing 200,000 from storage, leaving year end storage at 1,000,000, which is 200,000 over the minimum storage level.</p> <p>Staff explains: "The model constrains the percentage of the available storage (after holding back for minimum end-of-September storage) that is available for diversion over the irrigation season. This limits the amount of storage that can be withdrawn to reduce potential effects on river temperatures by protecting carryover storage and the coldwater pool in the reservoirs leading into a drought sequence." (SED, at F.-31-32.)</p> <p>There are several problems with the restricted storage release parameter. First, the restricted storage release parameter is not part of the Proposed Project. As previously noted, reservoir constraints are not a proposed objective. Further, unlike the minimum reservoir storage that is mentioned in the plan of implementation, the restricted storage release parameter is not found anywhere in the program of implementation. This operational restriction is simply not mentioned in Appendix K at all and it is only briefly explained as a model parameter in the SED.</p> <p>Second, similar to the minimum reservoir requirement, it is unclear whether the State Water Board has the authority to implement the restricted storage release parameter. The State Water Board has not demonstrated how it will restrict water right holders and dam operators from releasing water above that allowed by the storage release parameter.</p> <p>Third, the restricted storage release parameter controls the release of water from storage outside the period of noticed regulation. This parameter appears to control reservoir storage all year. Regulation of flows or reservoir operations outside this the noticed February through June time period has not been noticed by the State Water Board. In order to properly effectuate a regulation outside the regulatory period, the State Water Board would need to re-notice the process and include the reservoir storage regulation in such a notice. For the numerous reasons noted above, the storage release parameter is not</p>	<p>The maximum draw from storage (referred to as "restricted storage release parameter" by the commenter) works together with the carryover storage guideline and the minimum allocation in the WSE modeling exercise. Restricting storage in wetter years preserves supply that can be used in drought years when the minimum allocation parameter takes effect.</p> <p>Additional constraints, including maximum draw from storage, are required to meet the narrative LSJR flow objective and are reasonable estimations of operational choices in the WSE modeling analysis.</p> <p>Please refer to response 3239-198 regarding how the model assumptions, parameters, and constraints provide a reasonable representation of the plan amendments for purposes of analyzing potentially significant environmental impacts.</p>

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		supported by substantial evidence.	
3239	200	<p>Reservoir Refill Parameter</p> <p>The reservoir refill parameter limits the delivery of water in above normal and wet years. During these years, the WSE Model requires increased diversion of water to storage. The SED explains the refill limitations as follows: "When reservoir levels are very low (typically after a drought sequence), the model limits the amount of inflow that can be allocated for diversion in a subsequent wet year(s). By reducing the amount of inflow that can be diverted in such years, reservoirs and associated coldwater pools recover more quickly after a drought. Without such a requirement, reservoirs otherwise would remain lower for longer after a drought, causing associated temperature impacts." (SED, at F.1-31.)</p> <p>Staff further explained the refill limitations as a tool that will "also constrain diversions in order to give a boost to the reservoir level so that it can meet carryover guidelines in the future, that comes into play when there is a very low reservoir level and there is a lot of inflow, it will then um be a constraint a maximum allocation for that year." (12/5/16 Workshop, Will Anderson, at 2:08:24.)</p> <p>Staff discloses the refill requirement is a "user specified parameter between 0 and 1 that reduces diversion in an effort to help refill the major reservoirs at the end of a drought. This parameter is activated if: 1) storage in the major reservoir at the end of the previous October was less than minimum reservoir requirement plus 10 percent and 2) inflow to the major reservoir over the growing season will be greater than an inflow trigger set by the user. This diversion cut will continue over the entire irrigation year (March-February) unless the reservoir reaches the flood curve at which point the cut will end for the rest of the year." (SED, at F.1-39.)</p> <p>Similar to the minimum reservoir level requirements, the refill limitations cause several problems. First, the refill limitations are not proposed as water quality objectives in Appendix K. Nor are the refill limitations discussed in the program of implementation. Thus, the refill limitation does not appear to be a part of the Proposed Project. Even though it is not part of the Proposed Project, Staff only analyzed the environmental impacts of the Proposed Project with the inclusion of the refill limitation. Therefore, Staff does not know or did not disclose the impacts without the limitation.</p> <p>Second, neither the SED nor Staff disclosed the actual refill limitations. The SED explains the concept of refill requirements. However, the actual calculation or quantity that the WSE Model requires or assumes is not disclosed. This lack of transparency is common in the SED and it requires the regulated community to reverse engineer the WSE Model to understand how Staff ran the model.</p> <p>Third, neither the SED nor Staff explained how the refill limitations were developed. These explanations fail to identify the "user specified parameter" employed by the WSE Model. Further, the explanations fail to identify the "inflow target" used by Staff. However, generally, from viewing WSE Model results, it seems that the refill requirement usually applies to require diversion to storage in wetter years that follow drought or dry year periods.</p> <p>Fourth, the refill parameter regulates diversions outside February through June period. Regulation of flows or reservoir operations outside this the noticed February through June</p>	<p>Please refer to Master Response 3.2, Surface Water Analyses and Modeling, for responses to comments regarding reservoir refill requirement. The WSE discloses the refill limitations that were used for modeling purposes and that information has been available to the public since the September 2016 release of the SED.</p> <p>Please refer to response 3239-198 regarding how the model assumptions, parameters, and constraints provide a reasonable representation of the plan amendments for purposes of analyzing potentially significant environmental impacts.</p> <p>Please also refer to Master Response 2.5, Baseline and No Project, for an explanation of why the Notice of Preparation was sufficient.</p>

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		<p>time period has not been noticed by the State Water Board. In order to properly effectuate a regulation outside the regulatory period, the State Water Board would need to re-notice the process and include the reservoir storage regulation in such a notice. For these reasons, the refill parameter is not supported by substantial evidence.</p>	
3239	201	<p>Flow Shifting Parameter</p> <p>The WSE Model assumes that some of the unimpaired flow required during the February to June period will be placed in storage and released in later fall months. Staff assumes that "some" flow shifting will occur, but does not disclose exactly how much or the extent to which flow shifting exists.</p> <p>The flow shifting parameter that is built into the WSE Model is a significantly flawed for several reasons. First, it does not reflect the Proposed Project. The Tributary Flow Objective requires 30 to 50 percent of unimpaired flow to be met at the Tributary compliance points flows from February through June. The Tributary Flow Objective does not include required storage, delays in release of stored water, or otherwise shifting flows from the Proposed Project.</p> <p>Second, it requires flows outside the February-June period. Flows outside the February to June period have not been noticed in the present matter. To include flows that are required outside the regulated period of February to June violates the notice requirements.</p> <p>Third, Staff has failed to disclose how it developed the parameters for flow shifting. Staff discloses that the WSE Model includes flow shifting in the model runs for proposed flow requirements of 35 percent unimpaired flow and any other higher proposed flows. However, Staff does not explain how much flow is shifted, when the flow is shifted, and/or any other information regarding how the determination to shift flow was developed.</p> <p>Staff was asked to explain how the flow shifting parameter was developed. Staff failed to provide an explanation. (12/5/16 Workshop, Will Anderson, at 2:57:20-2:58:00 "Um, I am not able to, um, step through, ugh, I don't believe it's going to be satisfying and I can't step through the development of that, um, simply to say that these are parameters are inherent and important and critical for, uh, describing for our description of the system operation.") When pressed further regarding the flow shifting parameters, Staff disclosed that the flow shifting was derived through "trial and error to find a certain . . . flow target . . . that essentially would reduce the amount of time that the temperature criteria would be not met and reduce that so that the project effects would not cause a negative impact." (12/5/16 Workshop, Will Anderson, at 5:31:20-5:32:30.)</p> <p>Staff did not provide evidence or explanation of the "trial and error" process to the public. Further, in the SED, the WSE Model is explained and "all" the WSE Parameters are allegedly disclosed. However, Staff failed to disclose that flow shifting is part of the WSE Model runs for all runs over 35 percent of unimpaired flow. Thus, Staff failed to disclose how flow shifting is included in the WSE Model.</p> <p>Fourth, Staff failed to evaluate the impacts of the Proposed Project without flow shifting. Staff conceded that for proposed regulations of flow that were 35 percent unimpaired flow or higher, Staff did not run the WSE Model without flow shifting. In other words, Staff only analyzed the impacts of a project that required flow releases outside the regulatory period. Staff failed to perform or disclose any analysis of impacts for flows that were limited to the</p>	<p>Please see response to comment 3239-19 regarding flow shifting as an adaptive method that is included in the program of implementation. Please also see Master Response 2.2, Adaptive Implementation, regarding flow shifting and the adaptive implementation framework.</p> <p>Flow shifting values are disclosed in Appendix F.1 in section F.1.2.7 Calculation of River and Reservoir Water Balance. Please see Appendix F.1 tables Table F.1.2-25 and Table F.1.2-26. These tables show that the October flow objective is met. Flow shifting is part of adaptive implementation and is necessary for meeting the LSJR narrative and numeric objectives.</p> <p>Please refer to Master Response 3.2, Surface Water Analyses and Modeling, for responses to comments and additional information regarding reservoir operations, adaptive implementation, and flow shifting.</p> <p>The State Water Board has the discretion to determine which reasonable assumptions should be included to describe baseline conditions. In this case, the NMFS BiOp was included in the assumptions that describe baseline conditions because it was reasonably expected to occur in the foreseeable future and helped to evaluate and disclose impacts.</p> <p>Please see Master Response 2.5, Baseline and No Project, for a discussion of why the State Water Board's Notice of Preparation is sufficient. Please also see response to comment 3239-153 regarding the State Water Board's compliance with all noticing requirements.</p>

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		<p>February through June period. (12/5/16 Workshop, Les Grober, at 3:35:05 ["There was no run done with no flow shifting."].)</p> <p>Fifth, the flow shifting parameter assumes that flow shifting will always be possible and fails to consider the limitation of flood release requirements. The flow shifting parameter assumes that unimpaired flows during the February through June period can be held in storage and released in the River during fall months. In the WSE Model, the flow shifting parameter shifts flows in every wet and above normal year. (12/5/2016 Workshop, at 151-152.) However, the flow shifting parameter does not consider that during required flood control release periods, flows are required to be released and cannot be held to be released at a later date. Staff did not consider that flood release limitations; such limitations never constrained flow shifting.</p> <p>Further, in response to a question asking Staff whether the flood release constraints were considered, Staff responded, "that is an interesting. . . uh, please make that comment, because if I am hearing correctly there is a concern with that . . . and you're saying there would be limited opportunity to flow shift." (12/5/16 Workshop, Les Grober, at 5:41:05-5:44:00.) The failure to consider flood release limitations results in additional water supply impacts that were not evaluated. The effect of assuming shifted water remained in the reservoir even though the water had to be released due to flood control requirements, would double the required instream flow requirement. Water would be released for flood flows and then released again in the fall due to flow shifting.</p> <p>Sixth, it is unclear how the shifting of flows into the fall period affects the existing October flow requirements. The existing Bay-Delta Plan includes fall pulse flows, which Phase 1 does not officially propose to amend. (SED, Appx. K.) The flow shifting parameter built into the WSE Model pushes flows from the spring into the late summer and fall periods. When asked whether the flow shifted into the fall period is assumed to contribute to meeting the fall flow objectives, Staff responded "Um, let's, um I want to get back to you on that just to give you the correct, make sure we are on the same page on that. So the flow shifting meets a minimum flow target which, in the case of the base case um, well the flow shifting in uh, let's get back to you on that." (12/5/16 Workshop, Will Anderson, at 5:09:23-5:11:00.) Clearly Staff had not considered the impact of shifting flow into fall on the fall flow objectives.</p> <p>Seventh, Staff assumes the State Water Board has the authority to implement the flow shifting parameter. This is an assumption that is not supported and is incorrect. In order to implement the flow shifting parameter, the State Water Board would need to require that water be diverted to storage, require the water be held in storage, and then require the later release of the water in late summer or fall months. In order to accomplish these operational controls, the State Water Board would basically need to take over the reservoirs and run them according to the WSE Model. The State Water Board has no such authority.</p>	
3239	202	<p>Base Flow Parameter</p> <p>The Proposed Project requires a base flow of 800-1200 cubic feet per second at Vernalis. (SED, Appx. K, at 18.) However, the WSE Model does not include the base flow when modeling the Proposed Project. Rather, the minimum flows used by the WSE Model are the existing FERC flows on the Merced and Tuolumne Rivers and the Appendix 2E flows on the Stanislaus River.</p>	<p>Please see response to comment 3239-6 for an explanation of the base flow objective and regarding changes made to the LSJR flow objectives in Appendix K, Table 3 to increase clarity, including the base flow objective.</p> <p>Please refer to Chapter 5 and Appendix F.1. The WSE model contains a user-defined flow target for the SJR at Vernalis that, if not met by the tributary releases, requires additional releases to meet the Vernalis minimum. The Chapter 5, section describing Hydrologic and River Temperature Modeling Results contains a table that provides an evaluation of the Vernalis flow requirement using the WSE model. The number of months in the 82-year modeling period affected by the Vernalis flow requirement ranges from 0 to 11</p>

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		<p>This is a problem for several reasons. First, the base flows are the one parameter that is included in the Proposed Project and disclosed by Staff. For this reason, the failure to include the base flows in the modeling is both ironic and not supported by substantial evidence. Second, the base flows are the only remaining Vernalis compliance point requirement. Without including the base flows in the modeling, there is no longer any Vernalis compliance point requirement. This is a significant problem, as the Flow Criteria Report bases its science on Vernalis flows, not Tributary flows. In addition, without the Vernalis flow requirement, the Proposed Project is no longer directly with the Bay-Delta and becomes a regional basin planning effort.</p> <p>Third, in place of the base flows in the Proposed Project, Staff includes the existing flow requirements on the three Tributaries. The use of these existing flows is not supported by substantial evidence because (a) the flows are not part of the Proposed Project; (b) the State Water Board has no authority over these flows; (c) all of these existing flows are currently being reviewed through reconsultation or the FERC relicensing process; (d) the flow requirements do not require the release of unimpaired flow, but often require the release of water from reservoirs; and (e) the flow requirements are located on the Tributaries, rather than Vernalis.</p>	<p>months, or 0 to 2.7% of the 82-year modeling period, depending on LSJR alternative and range of minimum Vernalis flow requirement.</p> <p>Please refer to Master Response 2.1, Amendments to the Water Quality Control Plan, for responses to comments regarding the geographic scope of the Bay-Delta Plan.</p> <p>SED Appendix F.1, section describing calculation of flow targets, explains that proposed percentages of unimpaired flow are considered an additional requirement, and thus the greater of either the baseline flow requirements or the unimpaired flow requirement was selected for each month. Existing flow requirements were not modeled in place of LSJR flow objectives. If existing flow requirements resulted in a greater level of flow than the LSJR numeric flow objective, the greater flow target was used to represent conditions under the flow alternative. Baseline flow targets are established to represent the baseline condition, including the regulatory framework, such as FERC and Biological Opinion flow requirements, that characterize the baseline condition in each of the tributaries.</p> <p>Please refer to Master Response 2.5, Baseline and No Project, for responses to comments regarding assumptions used to define and describe the baseline condition and no project alternative. Use of existing flow requirements in the WSE to describe baseline conditions and establish flow targets is supported by substantial evidence. Existing flow requirements in FERC licenses and the National Marine Fisheries Service Biological and Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project (2009) were included in the modeling that describe baseline conditions because the flows were reasonably expected to occur and were needed to adequately evaluate and disclose impacts.</p> <p>The WSE is used to describe the potential water supply effects of the proposed plan amendments. The primary utility of a planning-level model is a comparative analysis, where the physical system is represented at a sufficient level of precision in order to accurately represent the most important effects of changes. In this case, the WSE model is configured to determine the change from baseline of water supply stored and available to meet diversion demands as a result of alternatives incorporating streamflow requirements. The general approach is to calculate available water for diversion in each water year based on inflows, net available water from storage after carryover guidelines, after streamflow targets are met.</p>
3239	203	<p>Minimum Allocation Fraction Parameter</p> <p>The WSE Model includes a minimum delivery amount that prevents the allocation of water from hitting zero. The Proposed Project would never reduce the delivery of water to the Irrigation Districts to zero, because even if the requirement were 40 percent of the unimpaired flow, sixty percent of even a small amount of water is a small quantity of water that would be allocated to water right holders. However, the WSE Model includes several other components, including flow shifting, minimum reservoir requirements, and refill restrictions, which further reduce water deliveries and make it possible that allocation may hit zero in certain dry years.</p> <p>In order to avoid the impact of zero water deliveries, Staff developed the minimum allocation fraction, which provides the delivery of a minimum quantity of water in years which a zero allocation would occur. Staff explains the minimum allocation fraction in terms of relaxing the reservoir carryover requirements: "Minimum Diversion Level (Minimum End-of-September Relaxation): Diversions can override the end-of-September storage guideline and draw additional water from storage in the event the available surface water for diversion is less than a specified minimum level. This in effect is a relaxation in certain years to the end-of-September storage guideline. The minimum level constraint was set after trial</p>	<p>SED Appendix F.1 Hydrologic and Water Quality Modeling and Master Response discloses district diversion and minimum district diversion fraction (referred to as minimum allocation fraction parameter by commenter) used in the SED under 20%, 30%, 40%, 50%, and 60% flow scenarios in 3 tables titled "Minimum Diversion, Minimum September Carryover Guideline, Maximum Draw from Storage and Flow Shifting" for each tributary, Stanislaus River, Tuolumne River, and Merced River.</p> <p>Please refer to response 3239-198. Please also refer to SED Appendix F.1 Hydrologic and Water Quality Modeling and Master Response 3.2, Surface Water Analyses and Modeling, for more information regarding the WSE model, district diversion and minimum district diversion fraction (referred to as minimum allocation fraction parameter by commenter), other parameters, and comparison to other models such as CALSIM.</p>

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		<p>and error to ensure there were no significant temperature impacts." (SED, at F.1-31.)</p> <p>The minimum allocation fraction parameter has several fundamental flaws. First, it is not part of the Proposed Project. The Proposed Project includes minimum Vernalis flows, but does not include a minimum delivery allocation. Rather, the Proposed Project would have a built-in minimum delivery at 60 percent of the unimpaired flow.</p> <p>Second, it is unclear how the minimum allocation fraction was developed. Staff explained that the minimum allocation fractions were developed "empirically." (12/5/16 Workshop, Will Anderson, at 2:08:20.) Neither the SED nor Staff disclose the "minimum level" of diversion for each Tributary that triggers the minimum allocation fraction. Further, other than describing the process as "empirical" or "trial and error," Staff fails to explain how it developed the minimum level of diversions. Without this information, the regulated community is not able to understand the considerations or determinations made by Staff. The failure to disclose any supporting evidence results in the lack of substantial supporting evidence for the minimum allocation fraction.</p> <p>Third, the minimum allocation fraction parameter is not disclosed by Staff. Staff did not disclose the parameter in the SED when explaining the WSE Model parameters. In order to find the minimum allocation fraction, it was necessary to deconstruct the WSE Model and find that Staff included floors or minimum allocations in years that would otherwise deliver little to no water. This failure to identify and disclose the parameter violates CEQA and the spirit of transparency that CEQA is in place to promote.</p>	
3239	204	<p>WSE Model parameters are not supported by substantial evidence.</p> <p>The modeling assumptions that form the basis of the WSE Model are not supported by substantial evidence and do not reflect the Proposed Project. This is a fundamental defect with regard to CEQA. CEQA requires the lead agency to identify and evaluate the environmental impacts of the Proposed Project. The WSE Model does not identify impacts of the proposed project, but rather includes several mitigating factors or assumptions that are built into the WSE Model. For this reason, if the State Water Board adopts the Staff draft it would not proceed in a manner required by law. The fundamental flaws with the parameters in the WSE Model result Staff's analysis not being supported by substantial evidence.</p>	<p>Please see Master Response 1.1, General Comments, for a discussion regarding substantial evidence in the SED.</p>
3239	205	<p>Evaluation of the impacts to agriculture are not supported by substantial evidence.</p> <p>Staff uses the SWAP Model to evaluate the impacts of the Proposed Project on the agricultural sector. There are several problems with the SWAP Model which result in the agriculture analysis not being supported by substantial evidence. In addition, there are problems with the Staff's analysis of the data coming out of the SWAP Model which make the evaluation of the agriculture impacts not supportable.</p>	<p>Please see Master Response 1.1, General Comments, regarding a discussion and definition of substantial evidence. Please see Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model, regarding the development and application of the SWAP model. Please see Master Response 3.5, Agricultural Resources, regarding the application of the SWAP Model results in the impact analysis.</p>
3239	206	<p>The SWAP Model is fundamentally flawed and not supported by substantial evidence.</p> <p>Staff describes the SWAP Model generally as follows: SWAP model is an agricultural production model that simulates the decisions of farmers at a regional level based on principles of economic optimization. The model assumes that farmers maximize profit (revenue minus costs) subject to resource, technical, and market constraints. The model selects those crops, water supplies, and irrigation technology that maximize profit subject to</p>	<p>Please see Master Response 1.1, General Comments, for additional information about substantial evidence and the adequacy of the SED. "Substantial evidence" means "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." (Cal. Code Regs., tit. 14, § 15384, subd. (a)).</p> <p>Also, please see Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model, and Appendix G, Agricultural Economic Effects of the Lower San Joaquin River Flow Alternatives: Methodology</p>

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		<p>these equations and constraints. The model accounts for land and water availability constraints given a set of factors for production prices, and calibrates to observed yearly values of land, labor, water and supplies use for each region. (SED, at G-42.) In general, the SWAP model takes the water supply deficits projected by the WSE Model and estimates how many acres of certain crops may be taken out of production.</p> <p>There are several fundamental problems with the SWAP Model which result in the analysis not being supported by substantial evidence. First, the SWAP Model is driven by results from the WSE Model. (SED, at 4-5.) Therefore the defects of the WSE Model infect the SWAP model. These defects alone result in the SWAP model failing to be supported by substantial evidence.</p> <p>Second, the SWAP Model is limited to only two outcomes-cropping or no cropping. The SWAP Model assumes that cropping decisions will be based entirely on commodity pricing and nothing else. In other words, the SWAP Model assumes that farmers will either plant a crop or fallow fields. The SWAP Model does not consider the options of conserving water, altering cropping but continue farming, or continuing to farm fewer acres of the same crop. Staff specifically states that it is too speculative to try to guess what actions farmers may take in response to the Proposed Project. However, the SWAP Model is exactly such speculation; it simply assumes farmers will make one of the two limited decisions. This assumption is not reasonable because it is so simplified and overly strict. It would have been more reasonable to assume that some fallowing by lower crops would occur, but that some conservation, some crop rotation and some other actions may also occur.</p> <p>Third, the SWAP Model's assumption that all decisions will be market based fails to include all market factors, but rather only looks at commodity pricing. For example, the SWAP Model assumes that pasture and alfalfa would be completely fallowed prior to the fallowing of a crop with a higher commodity value. However, this analysis is based only on commodity pricing; i.e., how much pasture and alfalfa will sell for in the market. However, the SWAP Model only considers the commodity price of alfalfa and pasture, the SWAP Model fails to take into consideration that the alfalfa and pasture crops support a secondary and very lucrative cattle and dairy sectors. This failure is despite the fact that Staff acknowledges that pasture and alfalfa may be grown to support the dairy and cattle industries. (SED, at 11-59.)</p> <p>In addition, the Staff also concedes that the dairy and cattle industries values far exceed those of even the most expensive farming crops. The failure to consider the support of this secondary commodity is a failure of the market comparison, especially since the SWAP Model does not evaluate or distinguish how much of the pasture and alfalfa crops are sold in the market as opposed to grown by dairy and cattle operations. The fact that alfalfa and pasture support the lucrative dairy and cattle operations makes it much more likely that these crops will continue to be grown. The SWAP Model is literally built on the presumption that alfalfa and pasture will no longer be grown. Thus, the SWAP Model's refusal to recognize any other information besides commodity pricing is the reason it fails to correctly estimate environmental impacts and is not supported by substantial evidence.</p> <p>Staff recognizes that the SWAP Model is flawed. Staff states that "SWAP could be over predicting fallowing from feed crops in particular alfalfa and pasture." (SED, at 11-58.) Staff states that because of the powerful commodity pricing of the dairy sector, if dairies need more water in dry years, other crops "such as field and grain and even higher net value crops in the spectrum may decrease in production." (SED, at 11-59.)</p>	<p>and Modeling Results, for additional information regarding the SWAP model and its assumptions.</p> <p>Commenter states that it "would have been more reasonable to assume that some fallowing by lower crops would occur, but that some conservation, some crop rotation and some other actions may also occur." It should be noted that Chapter 11, Agricultural Resources, acknowledges that efficiencies, crop rotation, changes in crop mix and dry land farming could occur. However, the impact being assessed in Chapter 11 is whether Important Farmland could potentially be converted to non-agricultural use. Had the SED incorporated commenter's suggestion, that assumption would have reduced the potential for Important Farmland to be converted to nonagricultural use and thus reduced the impact conclusions. The fact that the SED did not incorporate assumptions regarding conservation, etc., means that the SED conclusions regarding conversion to nonagricultural use are conservative (i.e. more worst-case) than is likely to happen in reality because farmers will innovate in many of the ways that commenter has identified. However, how and to what degree remains speculative.</p> <p>With regards to the specific issues raised:</p> <p>1) Please see responses to comments 3239 - 195 through 203. Please also see Master Response 3.2, Surface Water Analyses and Modeling, and Appendix F.1, Hydrologic and Water Quality Modeling, for additional information regarding the WSE model and its assumptions.</p> <p>2) The SWAP model is a widely-used model for evaluating how changes in agricultural inputs could affect cropping patterns. Although SWAP may not account for every action growers could take, it still provides sufficient detail for the programmatic analysis in the SED. It is not possible to model every decision farmers could make in response to reduced water supplies, but decision makers are more fully informed by modeling results that capture those that are reasonably foreseeable. The decisions modeled in SWAP are not speculative; these decisions reflect overall trends in observed grower behavior and how growers generally try to optimize their economic viability. During the recent drought the actions modeled in SWAP were seen again; for example, lower net revenue crops came out of production, while higher net revenue, permanent crops remained in production. Furthermore, besides the decision to fallow, SWAP also represents a grower's ability to deficit irrigate crops. Deficit irrigation is the practice of reducing the applied water per acre for a crop below the optimal level; this will save water, but may cause yields to be reduced. It would be speculative to guess other actions growers might take in response to reduced water supplies outside of those actions that have been observed historically in response to water shortages, such as increased groundwater use, fallowing of lower net revenue crops, and deficit irrigation to conserve water. Please see Chapter 11, Agricultural Resources, and Master Response 3.5, Agricultural Resources, for discussion of other actions growers may take in response to reduced water supplies.</p> <p>3) SWAP may not be able to exactly show how cropping patterns will change, but it does capture overall trends of observed behavior (i.e. the lower net revenue crops generally come out of production first). It is possible that less alfalfa and pasture may be fallowed than was modeled in SWAP, as was acknowledged in the SED; however, this is not certain because dairies can find replacement feed supplies. History has not shown the widespread displacement of higher net revenue, permanent crops to maintain dairy feed supplies during water shortages. It is more likely that dairies would find alternative feed supplies either by importing feed from other areas or by growing different feed crops that consume less water. In addition, there may be lands where conditions are better suited for growing pasture over other crops which may encourage landowners to continue growing pasture. However, modeling at this detailed scale would require knowledge of local conditions which is beyond the scope of the programmatic analysis in the SED. Please see Master Response 3.5 and Master Response 8.2, Regional Agricultural Economic Effects, for further discussion dairies and how they could respond to implementation of the LSJR alternatives.</p> <p>4) Please see Master Response 8.1 for discussion of the SWAP model assumptions about intra-district</p>

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		<p>Staff also acknowledges that because the cattle sector relies directly on pasture and because pasture often is grown on "land with soils, slopes, or other characteristics" that may not support other crops, "it is likely these areas would be maintained as pasture." (SED, at 11-59.) Therefore, even the qualitative analysis included in the SED recognizes that the SWAP Model's assumption that all pasture and alfalfa will be followed in favor of maintaining higher commodity crops is not supported by substantial evidence. The fact that Staff and the SED are so directly internally inconsistent prevents the opposite conclusions from being supported by substantial evidence.</p> <p>Fourth, the SWAP Model assumption that all low value crops will be followed incorrectly assumes that intra-district water transfers are allowed and can be facilitated. In each of the six DAU's used by the SWAP model, the Irrigation Districts are the primary water right holders. Individual farmers rarely hold water rights separate and apart from the Irrigation Districts. Therefore, water deliveries are managed and controlled by the Irrigation Districts that hold the water rights, own, manage, maintain, and operate the water conveyance facilities. There are several districts that do not allow intra-district water transfers. Other districts do not prohibit transfers, but there is no system in place to facilitate the transfer or trading of water. Irrigation Districts deliver water to customers based on inches of water allocation per acre. When water shortages are required, the Irrigation Districts reduce the quantity of water delivered equally to each acre of land served. The SWAP Model is premised on the assumption that water can be easily transferred between farmers. This assumption is not supported and often not correct.</p> <p>Fifth, the SWAP Model assumes that the transfer of water between farmers growing low and high value crops will occur automatically, without any cost, administration, or time for such transfers to be put in place. As noted above, the Irrigation Districts are not set up to facilitate intradistrict water transfers. Even if the transfer of water were not prohibited, there would be significant costs and administration of such a transfer. For example, in order to facilitate the transfer, the high value crop farmers would need to (1) identify other farmers that were willing to sell their allocation of water; (2) negotiate the price of purchasing the allocation; (3) draft a contract regarding the sale of the allocation; (4) negotiate terms of the transfer of the allocation; (5) provide contract to Irrigation District and request change of delivery based on the contract.</p> <p>In response to this, the Irrigation District must assess whether the existing facilities are able to accommodate the request. For example, if all lands served by lateral A transfer water to lands served by lateral B, lateral B may not have the capacity to serve the additional water that would have otherwise been delivered by both lateral A and B. In addition, if lateral A no longer carries water during the irrigation season, the Irrigation District may need to perform certain maintenance and upkeep of an empty lateral that would not be required of a lateral that was carrying water.</p> <p>Thus, there are significant administrative costs, negotiations, and evaluations that are required prior to transferring intra-district water. The SWAP Model does not consider these costs in determining whether a transfer would occur; for example, the SWAP Model does not off-set any potential profit by accounting for these administrative costs. Further, the SWAP Model does not consider these challenges as potential factors that would question or reduce the assumption that all low-value crop farmers would follow in favor of high value crops. In reality, the significant administrative factors, including cost and time to facilitate such a transfer would likely prohibit the movement of water.</p>	<p>transfers.</p> <p>5) Use of the SWAP model in the local agricultural economic analysis is intended to provide a general sense of how the LSJR alternatives could affect agricultural production and revenues at the programmatic level. More detailed analysis of the effects on specific fields and of specific water transfers, along with the associated administrative costs, would require knowledge of local conditions that is not readily available. Analyzing effects in such detail is not required to gain a general sense of the economic effects and is not necessary for a programmatic analysis. Please see Master Response 8.1 for discussion of the scope of the agricultural economic analysis.</p> <p>6) Please see Master Response 8.1, Local Agricultural Economics Effects and the SWAP Model, for discussion of the SWAP model setup and input data.</p> <p>7) Following of permanent crops in SWAP represents a standard practice during water shortages where growers retire a small portion of their trees earlier than scheduled so they can replace them with new trees that require less water. Please see Master Response 8.1 for discussion of the SWAP model assumptions about following of permanent crops.</p>

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		<p>Sixth, Staff fails to provide much of the data and inputs that drive the SWAP Model. For example, the commodity pricing and yield production that are fundamental parts of the SWAP Model are not provided. (12/12/2016 Workshop, 112:16-23 to 113:1.)</p> <p>["UNIDENTIFIED SPEAKER: And also, while I have the microphone, where in the SED or in the spreadsheets that you have attached can I find the information on the SWAP input specifically yielded and the prices that were used for the various crops?</p> <p>TIM NELSON: I don't believe--those are parameters that are part of SWAP itself and not part of the input spreadsheets.</p> <p>UNIDENTIFIED SPEAKER: Right. Is it possible to get those?</p> <p>LES GROBER: It seems that it should be, yes."].)</p> <p>For example, without understanding and evaluating the pricing and yield data, it is not possible to assess whether the model correctly values crops and correctly determines which crops will be fallowed, the quantity of acres fallowed, or any other output of the SWAP Model. In response to a request for the public disclosure of this fundamental information, Staff promised to provide the information, but never fulfilled that promise. Without disclosing this information to the public and including the information in the record, the SWAP Model cannot be supported by substantial evidence.</p> <p>Seventh, the SWAP Model fails to account for the impacts of multi-year fallowing. Rather, the SWAP Model looks at each year in isolation, as if it is the first and only year that the crop would be fallowed. This causes a significant problem when it comes to the evaluation of permanent crops. The SWAP Model estimates that approximately 731 acres of permanent tree crops will be fallowed in average years. (SED, at G-49 to G-54.) Staff does not estimate the fallowing of permanent tree crops in dry years. However, because the results of the Proposed Project do not affect crops in wet and above normal years, it can be generally assumed that dry year impacts are at least double the average impact disclosed by Staff. Thus, in dry years, the acreage of fallowed permanent crops is likely to be approximately 1500 acres.</p> <p>The SWAP Model fails to evaluate the impacts of fallowing permanent crops for an extended period of time. However, the reality is that after a few years of not applying water, permanent crops die. The SWAP Model does not consider the impact of fallowing permanent crops over several years; the SWAP Model does not consider that a crop may die and not be able to come back into production. Instead, the SWAP Model only considers whether a crop is taken out of production and assumes the crop will be back in production when water is available.</p> <p>The failure to consider loss of permanent crops is a significant flaw in the SWAP Model. The capital investment in permanent crops is a significant cost factor in the agriculture industry. At approximately \$25,000 per acre, capital losses will be approximately \$37.5 million, (capital cost per acre x 1500 acres) in losses from permanent crops in consecutive below normal, dry and/or critical water years. The failure to consider this cost, and/or estimate when this cost would be incurred (i.e. when the permanent crop would be lost from required fallowing) is a significant flaw in a model whose purpose is to determine cropping patterns from water shortage.</p>	

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3239	207	<p>Average year analysis is not supported by substantial evidence.</p> <p>Staff's analysis of agriculture impacts only considers the impacts of average years. This is significantly misleading because the impacts of the Proposed Project are rarely, if ever, average. Instead, the Proposed Project has little, if any, impacts in wet years and devastating impacts in dry and below normal water years. Thus, the true environmental impact is extreme, periods of no change are followed by periods of wreckage. For example, the SED contains several exceedance graphs which provide the picture of how the Proposed Project will affect agriculture. Figure 11-15b shows the Proposed Project projected impact on pasture. In about 60 percent of the years pasture is not reduced at all. Then there are two years that indicate pasture will be reduced about 10 to 20 percent. After the short minimum reduction, pasture is reduced to zero for the remaining years.</p> <p>Thus, the visual of the Figure 11-15b exceedance plot reflects that the Proposed Project is extreme and there is no "average" year; it is either no impact or complete devastation. For this reason, evaluating the averages of the two extreme impacts does not reflect the actual environmental impact of the Proposed Project and is not supported by substantial evidence. Instead, Staff must evaluate the dry year impacts of the Tributary Flow Objective, while disclosing that these impacts occur in only 30 to 50 percent of years.</p>	<p>Please see Master Response 1.1, General Comments, regarding a discussion and definition of substantial evidence. Please see Master Responses 2.5, Baseline and No Project, and Master Response 3.5, Agricultural Resources, regarding the appropriate use of averages in an SED impact analysis and regarding the use of exceedance plots in Chapter 11, Agricultural Resources. Please refer to Master Response 2.3, Presentation of Data and Results in the SED and Response to Comments, regarding the use and presentation of averages and other statistical metrics in the SED.</p>
3239	208	<p>Failure to Evaluate the Secondary Dairy Impact</p> <p>The Staff fails to evaluate the impact to the cattle and dairy sector of the agriculture industry. This is not a small error. The dairy and cattle sectors are the largest agriculture commodities. The dairy sector alone is significantly higher than most other agriculture commodities, even the lucrative nut crops. For example, Staff discloses that the gross revenue of dairy is \$2.21 billion dollars per year. (SED, at 11-59.) Compared to almonds at \$884 million, alfalfa at \$50 million, and oranges at \$8 million, the dairy and cattle sectors are clearly a large piece of the agriculture portfolio. Staff provides several anecdotal comments recognizing the relationship between alfalfa and pasture crops and the cattle and dairy sector. (SED, at 11-58 to 11-59.)</p> <p>Further, Staff discusses generally how the cattle and dairy sectors may be affected. (SED, at 11-58 to 11-59.) However, Staff never analyzes how the Proposed Project will affect the cattle and dairy sectors. Staff fails to evaluate water demand for the cattle and dairy sectors and does not analyze how the reduced water supply would affect cattle and dairy operations. This analysis may not fit perfectly into the SWAP Model; however, the failure to evaluate the impacts on two of the largest agriculture sectors renders the impacts analysis deficient and unsupported by substantial evidence. Staff must revise the SED to properly identify impacts to the cattle and dairy sectors, analyze how these impacts will change the cattle and dairy operations and environments, disclose whether such impacts are significant, and develop mitigation to the extent significant impacts exist.</p>	<p>Please see Master Response 3.5, Agricultural Resources, for discussion of the potential effects on dairies and livestock operations. Please see Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model, for discussion of SWAP model constraints to maintain corn silage. Please see Master Response 8.2, Regional Agricultural Economic Effects, for discussion of the potential economic effects on dairies.</p>
3239	209	<p>Groundwater mitigation is not supported by substantial evidence.</p> <p>Staff's evaluation of agriculture impacts is premised on the assumption that groundwater pumping will remain at 2009 pumping levels. (SED, at 11-37.) Specifically, Staff assumes that, on average, 105,000 acre feet of groundwater will continue to be pumped. Thus, the analysis of impacts to agriculture is off-set or reduced by the amount of groundwater pumping that occurred in 2009. Staff does not explain why 2009 groundwater pumping</p>	<p>Please see Master Response 1.1, General Comments, regarding a discussion and definition of substantial evidence.</p> <p>Please see Master Response 2.5, Baseline and No Project Alternative, for a description of baseline and the purpose and use of a baseline in an impact analysis, such as the impact analysis conducted for the SED and for evaluating potential impacts on agricultural resources.</p> <p>Please see Appendix G, Agricultural Economic Effects of the Lower San Joaquin River Flow Alternatives:</p>

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		<p>levels are used.</p> <p>Although 2009 may represent the baseline that Staff has chosen, using the baseline number for groundwater pumping is not appropriate. It is not appropriate because the purpose of the SED is to evaluate how the Proposed Project affects the baseline. Using the baseline groundwater pumping does not attempt to evaluate how the Proposed Project affects groundwater pumping. To the contrary, using the baseline seems to reflect Staff's assumption the Proposed Project will have no impact on groundwater pumping.</p> <p>Staff's use of the 2009 pumping data fails to recognize the Sustainable Groundwater Management Act (SGMA) is now in place. Thus, Staff's use of the 2009 baseline groundwater pumping quantities ignores the impact of both the Proposed Project and SGMA. This is not reasonable; just using a baseline number defeats the purpose of projecting potential future impacts.</p>	<p>Methodology and Modeling Results, subsection G.2.2, Methodology for Calculating Applied Water, for a discussion of groundwater pumping. It is reasonable to include some groundwater pumping in baseline and in response to implementation of the LSJR alternatives given the reliance on infrastructure that was in place in 2009 and reported pumping at that time. Chapter 9, Groundwater Resources, and Chapter 11, Agricultural Resources, do not assume the plan amendments would have no impact on groundwater pumping. To the contrary, Chapter 9 and Chapter 11 disclose significant and unavoidable impacts on both groundwater resources and agricultural resources under some of the LSJR alternatives.</p> <p>Please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, regarding the groundwater impact analysis and the plan amendments' acknowledgement of, and approach to, SGMA. Please also see Chapter 9, Groundwater Resources, Chapter 17, Cumulative Impacts, Growth Inducing Effects, and Irreversible Commitment of Resources, and Master Response 6.1, Cumulative Analysis, for the appropriate incorporation of SGMA into the SED impact analysis.</p>
3239	210	<p>Staff's overestimation of low-value crops is not supported by substantial evidence.</p> <p>Staff and the SWAP Model overestimate the quantity of low-value crops. The data Staff uses to determine the number of low-value crops is approximately 8 years old. In the past 8 years there has been a significant change from lower value crops to higher value permanent crops. (12/12/2016 Workshop, at 109-110.) Therefore, the quantity of low value crops that Staff and the SWAP Model assume can be fallowed prior to impacting higher-value crops may no longer be in production. Using data that is almost a decade old in such a dynamic system is not reasonable and does not reflect the reality of the changes on the ground.</p>	<p>Crop acreage estimates are based 2010 DWR DAU data, which was used in the analysis because it corresponds to the Baseline period for the SED and because it is part of a statewide, consistent database supported by a sister agency. CEQA does not require that the Baseline be continuously updated. Please see Master Response 2.5, Baseline and No Project, for information regarding the data used in the analysis.</p>
3239	211	<p>The thresholds of significance are not supported by substantial evidence.</p> <p>Staff's thresholds of significance selected to evaluate the impacts to agriculture are deficient. The SED includes four thresholds of significance to measure and evaluate the impacts of the Tributary Flow Objective on agriculture:</p> <ul style="list-style-type: none"> - AG1: Conversion of designated farmland to non-agricultural use - AG2: Other changes that convert farmland to non-agricultural use - AG3: Conflicts with existing zoning or Williamson Act contract - AG4: Conflicts with existing land use plans or policies <p>Staff spends the vast majority of time and effort analyzing AG1. There are several fundamental flaws with AG1 that result in this analysis inadequately evaluating Project impacts to agriculture. First, AG1 limits its evaluation of impacts to certain specialized classes of agriculture. AG1 only considers the conversion of prime, unique and farmland of statewide importance. Not all agricultural land falls into these specialized categories. In fact, Staff discloses that the total acreage of designated farmland is 527,793 acres, while non-designated farmland amounts to 107,490. (SED, at Table 11-2.) Therefore, non-designated farmland is approximately 17 percent of the Plan Area's total farming acreage. This acreage is not considered by AG1 or in any other portion of the SED.</p> <p>It is unclear whether Staff assumes this 17 percent of agriculture is completely fallowed or whether this 17 percent is impacted similarly to the designated categories of agriculture. Either way, Staff simply fails to analyze 17 percent of the agriculture in the region. This</p>	<p>Please see Master Response 1.1, General Comments, regarding a discussion and definition of substantial evidence.</p> <p>Please see Master Response 3.5, Agricultural Resources, regarding the use of the State Water Board's Environmental Checklist (Appendix B), the thresholds, and the criteria used to evaluate impacts on agricultural resources, including the use of Impact AG-1 and Impact AG-2.</p> <p>Please see Master Response 3.5 regarding the Farmland Mapping and Monitoring data, designations based on irrigated or non-irrigated lands, and the treatment of irrigated lands in the SWAP model. The State Water Board's methodology of identifying the acres of designated farmland and using SWAP considered all appropriate irrigated acreage that may be affected by a potential reduction in surface water diversions.</p> <p>Please see Master Response 3.5 regarding the criteria to determine significance and the relationship of the criteria to that of the conversion of designated agricultural lands to nonagricultural uses. As described in Master Response 3.5, the conversion of designated agricultural lands to nonagricultural lands is influenced by a wide variety of factors that cannot be anticipated or known. Also as acknowledged by commenter in comment 3239-206 and in Impact AG-1, there is the possibility of land not being converted to nonagricultural uses (Section 11.5, Impacts and Mitigation Measures: Impact AG-1: "Although the reduction in water supply is used as a proxy for the conversion of irrigated land to nonagricultural lands, lands that are not irrigated could remain in agricultural use as discussed in Impact AG-3... Local land use agencies can mitigate for the loss of farmland to urban development through development conditions such as in lieu fees for, or direct purchases of, agricultural conservation easements. In addition, local water suppliers, regional groundwater management agencies, and irrigation districts could reduce potential conversion of agricultural land due to reduced surface water availability by requiring modifications to existing agricultural practices that increase irrigation efficiency"). The potential of conversion of designated agricultural land to nonagricultural uses involves a wide variety of unknown and different factors, including: unique individual</p>

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		<p>exclusion of 17 percent of agriculture lands is in addition to Staff's failure to evaluate the impact of the Proposed Project on cattle and dairy sectors. Together, these carve outs result in Staff analyzing only a portion of the agriculture portfolio; Staff does not evaluate the full agriculture picture. This failure to identify and evaluate the impacts of the Proposed Project on 17 percent of the agriculture industry is not acceptable and prevents the analysis from being supported by substantial evidence.</p> <p>Second, AG1 analyzes the "conversion" of agriculture to non-agriculture uses. Staff does not fully explain how it determines when agriculture would convert to non-agriculture uses. Staff generally explains that the "reduction in water supply is used as a proxy for the conversion of irrigated land to nonagricultural lands." (SED, at 11-47.) This statement seems to indicate that Staff assumes that when water is not available, conversion would result. However, later Staff concedes that "it is unknown whether the reduction in irrigation water would result in direct conversion." (SED, at 11-52.) Thus, Staff's threshold of significance based on conversion is confusing, unclear, and not supported by substantial evidence.</p> <p>Third, AG1 fails to consider the water supply demand of the non-agriculture use. Staff appears to assume that after the conversion from agriculture use to non-agriculture use will extinguish any water demand for the land. The failure to analyze potential new land uses after conversion is a fundamental short-fall of the analysis, whose purpose is to identify and evaluate the changes to the environment. Simply stating agriculture lands will be converted and not evaluating what environmental impact that conversion will entail is deficient and not supported by substantial evidence.</p> <p>AG2 also has significant deficiencies. First, it is unclear what the threshold of significance is measuring. The actual threshold reads as follows: "Involve other changes in the existing environment which, due to their location or nature, could result in a conversion of farmland to nonagricultural uses." This description is not clear. The analysis in this section discusses two issues: seepage impacts and impacts of importing feed for cattle and dairy. The seepage discussion is a few sentences that summarily conclude that on one river (Stanislaus) flows are already so high that the Proposed Project would not increase flood impacts.</p> <p>From this, Staff concludes: "Therefore, it is reasonable to assume that a substantial reduction in agricultural production, and thus acreage, would not occur in the LSJR area of potential effects as a result of seepage when compared to baseline." (SED, at 11-58.) This conclusion is unsupported. Staff seems to be translating conclusions regarding flood impacts into evidence of the existence of seepage. This translation is not supported. No baseline seepage information is disclosed, despite the reference thereto. (Id.) This kind of unsupported conclusion is not allowed by CEQA and it is not supported by any evidence.</p> <p>The section on importing feed is longer, but similarly conclusory and frustrating. Staff concedes that the fallowing of pasture and alfalfa may impact the cattle and dairy sectors. (SED, at 11-58.) Staff then dismisses its own concern by stating (1) these sectors will be able to import feed and (2) some local feed is likely to be available because the SWAP Model likely overestimated the amount of pasture and alfalfa that will be fallowed. (SED, at 11-58 to 11-60.)</p> <p>This section is filled with conclusory statements that fail to provide any analysis. For example, in this section, Staff makes a half-hearted attempt to explore the increased cost of importing feed, by stating: "Due to additional transportation costs, feed costs could go up; however, the increase in the cost of feed is not known because it depends on where dairies</p>	<p>grower decisions, the land use opportunity presented to the grower not involving a designated agricultural land or agricultural use, market forces of different agricultural commodities, and market forces regarding nonagricultural development. All of these are beyond the control or purview of the plan amendments. Because of the numerous unknown factors associated with potential conversion of designated agricultural lands to nonagricultural lands it would be purely speculative to identify first the multitude of different land uses that could occur and second the potential environmental impacts that could occur under the multitude of different land uses.</p> <p>Please see Chapter 6, Flooding, Sediment, and Erosion, Section 6.2.2, Lower San Joaquin River, Delta, and Tributaries, Stanislaus River for more information regarding seepage as it relates to flows on the Stanislaus River. Please see Chapter 11, Agricultural Resources, Section 11.5, Impact AG-2, for a discussion on the impacts of river flows on the depth of groundwater in fields adjacent the Stanislaus River and its potential impact on crop production. There is no translation between flooding and seepage in the discussion of Impact AG-2; there is a discussion of seepage as it relates to the flows that may cause seepage into existing agricultural fields and the relation of those fields to the existing floodplain. Please see the USDOJ (1982) reference listed in Chapter 11 for additional details on the connection between river flows and seepage as well as the tables cited in the impact analysis (Tables 6-13 and 6-14 in Chapter 6).</p> <p>Please see Master Response 3.5 regarding clarifying information on the potential of dairies to convert to nonagricultural uses, dairy feed, and other market variables influencing dairies. Please see Master Response 8.2, Regional Agricultural Economic Effects, regarding clarifying information on potential economic effects and costs related to existing dairies, including transportation.</p> <p>Please see Section 11.2.2, Lower San Joaquin River Watershed and Eastside Tributaries, Williamson Act Contracts, and Section 11.3.1, Regulatory Background, State, Williamson Act and Farmland Security Zone Contracts, for information regarding existing Williamson Act contracts and the regulations governing Williamson Act lands. Impact AG-1 and Impact AG-3 analyze different potential impacts and are not contradictory. First, as identified in Sections 11.2.2, 11.3.1, and Impact AG-3, land that no longer receives irrigation water can support uses that meet the requirements of the Williamson Act, including open space or non-irrigated agricultural uses such as grazing or dryland farming. For example, based on the SWAP modeling results for annual crop acreage there are on average approximately 215,000 acres of annual crops in production in response to implementation of LSJR Alternative 3. Thus, there is sufficient acreage to rotate the annual crop acreage included in the 24,902 acres that are out of production in response to implementation of LSJR Alternative 3. Second, Impact AG-1 discusses the possibility of land not being converted to nonagricultural uses ("Although the reduction in water supply is used as a proxy for the conversion of irrigated land to nonagricultural lands, lands that are not irrigated could remain in agricultural use as discussed in Impact AG-3...Local land use agencies can mitigate for the loss of farmland to urban development through development conditions such as in lieu fees for, or direct purchases of, agricultural conservation easements. In addition, local water suppliers, regional groundwater management agencies, and irrigation districts could reduce potential conversion of agricultural land due to reduced surface water availability by requiring modifications to existing agricultural practices that increase irrigation efficiency"). However, as described in the methodology and Master Response 3.5, because Impact AG-1 analyzes the conversion of designated agricultural uses to nonagricultural uses, the impact is determined to be significant and unavoidable.</p> <p>Please see Section 11.3.2, Regional or Local, for a discussion of information regarding local land use regulations and zoning for the cities and counties within the plan area, which supports the impact conclusion in Impact AG-4. A cross reference to this information is included in Chapter 11, Agricultural Resources.</p>

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		<p>source feed from and the competition for the feed from other users." (SED, at 11-58.) This type of analysis is not helpful and not supported by substantial evidence.</p> <p>AG3 considers whether the Proposed Project would result in lands conflicting with Williamson Act contracts. Williamson Act contracts restrict enrolled parcels of land to agricultural or related open space use. The minimum term for Williamson Act contracts is ten years. However, since the contract term automatically renews on each anniversary date of the contract, the actual term is essentially indefinite. Staff does not identify the baseline quantity of acreage that is under Williamson Act contract. (SED, at 11-61.)</p> <p>Despite the lack of knowledge regarding Williamson Act contracts, Staff concludes that the Proposed Project would not result in any conflict with Williamson Act requirements because "there is enough annual crop acreage for rotation if the plantings of annual crops such as corn and gran were rotated in years with reduced irrigation supply such that all the lands would be irrigated at least once every other year or fallowed in other years." (SED, at 11-61.)</p> <p>The conclusion and the sentence make no sense. The conclusion that no agricultural land will be taken out of production contradicts the conclusions from AG1, which confirm that there will be thousands of acres taken out of agricultural production. The conclusion is not supported by evidence; there is no evidence of what "enough annual crop acreage" means, there is no evidence of what is meant by "reduced irrigation supply," there is no evidence of what is meant by "all lands." The analysis in AG3 is incorrect, contradictory, and supported by no evidence.</p> <p>AG4 considers whether the Proposed Project conflicts with any land use policy related to agriculture. The analysis for all this section is located in a single paragraph, analyzing all Project alternatives at the same time. In that paragraph, Staff fails to identify any land use policy related to agriculture. Not one policy, protection, or substantive reference to any agriculture land use guidance is provided. Without first identifying the applicable policies, Staff cannot support the conclusion that the Proposed Project is consistent with such policies. For this reason, the analysis is not supported by substantial evidence.</p>	
3239	212	<p>The evaluation of the impacts to aquatic resources is not supported by substantial evidence.</p> <p>Fish Species Evaluated and Indicator Species</p> <p>Staff is required to evaluate how the Proposed Project will impact the environment, which includes aquatic resources and fish species. Although the Proposed Project claims only to protect native fish species, the SED requires Staff evaluate how the Proposed Project will affect all species. Staff fails to provide such analysis. Staff identifies 17 fish species in the Plan Area and briefly discusses the existing status of each of these 17 species. (SED, at 7-9 to 7-29.) The discussion of each of these species generally discloses whether they are a special-status species (or not), whether the species is native or non-native, and identifies the typical habitat for each species. (Id.)</p> <p>However, after the general description of each species, Staff fails to analyze how the Proposed Project will affect each of the species. Instead, Staff selects "indicator species" and limits the analysis of impacts from the Proposed Project to these representative species. Staff identifies the Central Valley Fall-Run Chinook Salmon and Central Valley Steelhead as indicator species to represent anadromous fish, rainbow trout to represent coldwater</p>	<p>The use of indicator species in the impact analyses of the LSJR Alternatives is further discussed in Chapter 7, Aquatic Biological Resources, Section 7.4.2, Methods and Approach. Please also refer to Section 7.4.3, Impacts and Mitigation Measures, which discusses impacts to fishes by each alternative in the relevant impact evaluation sections. Refer to Appendix C, Technical Report on the Scientific Basis for Alternative San Joaquin River Flow and Southern Delta Salinity Objectives, specifically to Section 3, Scientific Basis for Developing Alternate San Joaquin River Flow Objectives, for the scientific basis for the utility of the indicator species as an indicator of broader ecosystem and fish community responses to a more natural flow regime. In addition to analyses of indicator species in each impact evaluation section, more specific analyses of impacts to other species can be found in "Impact AQUA-1: Changes in spawning success and habitat availability for warmwater species resulting from changes in reservoir water levels"; "Impact AQUA-2: Changes in availability of coldwater species reservoir habitat resulting from changes in reservoir storage"; the "Other Fish Species" sub-sections within "Impact AQUA-3: Changes in the quantity/quality of physical habitat for spawning and rearing resulting from changes in flow"; "Impact AQUA-4: Changes in exposure of fish to suboptimal water temperatures resulting from changes in reservoir storage and releases". In addition to the benefits of the proposed flow requirements on native fish communities, "Impact AQUA-10: Changes in predation risk resulting from changes in flow and water temperature" discusses the importance of a more natural flow regime in limiting the success of nonnative fish species, including potential predators or</p>

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		<p>reservoir fish, and largemouth bass to represent warmwater reservoir fish. (SED, at 7-3.)</p> <p>Staff explains that "Indicator species were selected based on their sensitivity to expected changes in environmental conditions in the plan area and their utility in evaluating broader ecosystem and community-level responses to environmental change." (Id.) However, Staff fails to support this conclusion with any citation or scientific information that would support the concept that selecting an indicator species is appropriate and would appropriately reflect the impacts from the Proposed Project on a broader level.</p> <p>In fact, Staff does not actually analyze the impacts of the Proposed Project on the named indicator species. Instead, Staff focuses almost exclusively on Central Valley Fall-Run Chinook Salmon and Central Valley Steelhead. For example, for eight of the twelve thresholds of significance, the Staff analyses considered only impacts to Chinook Salmon and Steelhead. Further, the analyses of these two species were often collapsed and the analysis relied only on an analyses of Chinook Salmon. (SED, at 7-102 ["Where appropriate, the Chinook salmon and steelhead analyses are combined."].)</p> <p>The analysis of the Proposed Project impacts on only one or two of the seventeen fish species does not comply with CEQA requirements. CEQA requires Staff analyze how the Proposed Project will impact aquatic resources; evaluating only one or two fish species fails to analyze how the Proposed Project will impact fish species. Without this information the public cannot be aware of the potential impacts and decision-makers cannot make an informed decision with regard to approving the Project.</p>	<p>competitors of native fishes.</p> <p>Please see Master Response 3.1, Fish Protection, regarding the use of surrogates, and for discussion of the appropriateness of using indicator species in the analyses, including supporting literature citations. Also refer to Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30, Section 19.5, Final Discussion of Benefits Analysis, regarding expected benefits of implementation of the plan amendments to indicator species and other fish species.</p> <p>Also refer to Master Response 1.1, General Comments, for information about substantial evidence, and Master Response 1.2, Water Quality Control Planning Process, regarding State Water Board authorities and requirements of analyses under CEQA.</p>
3239	213	<p>The evaluation of the impacts to aquatic resources is not supported by substantial evidence.</p> <p>Thresholds of Significance</p> <p>Staff selected twelve thresholds of significance upon which to analyze the environmental impacts of the Proposed Project. The twelve categories only analyze three different environmental impacts: (1) changes from reservoir levels (thresholds 1, 2, 4); (2) changes from floodplain habitat (thresholds 3, 8, 9); and (3) changes from temperature (thresholds 10, 11, 5). Thus, although it appears that Staff analyzed twelve separate impacts, the analysis is repetitive and only reflects the above three impacts. Further, each of these categories is compromised and fails to comply with CEQA's requirement to identify and analyze the environmental impacts of the Proposed Project.</p>	<p>Please refer to Master Response 1.1, General Comments, regarding use of an SED to meet CEQA requirements, the approach to analyses, the purpose of a program-level document and program-level analyses, and evaluation of impacts to environmental resources. Also see Master Response 2.4, Alternatives to the Water Quality Control Plan Amendments, regarding comments on provisions of CEQA as they relate to alternatives and regarding the range of alternatives analyzed.</p>
3239	214	<p>Impacts from Reservoir Level Change</p> <p>Based on the thresholds of significance that measure impacts based on changes to reservoir levels, the Staff concludes that no significant impacts will result from the Proposed Project. This conclusion is based on Staff's assumption that the Proposed Project will not change reservoir levels. These conclusions are a problem for several reasons. First, if reservoir stability is required by the Proposed Project, it seems disingenuous to dedicate three thresholds of significance to evaluate the impacts from changing reservoir levels. Pretending to evaluate impacts when Staff knows no such impacts will occur due to the way Staff defined the Proposed Project cannot seriously be considered as legitimate environmental analysis.</p> <p>Second, the assumption that reservoir levels will not fluctuate, despite the proposed increased flow requirements, is not a supported assumption. As previously discussed above,</p>	<p>Please refer to Master Response 1.1, General Comments for information about substantial evidence in the plan amendments. Also see Master Response 3.1 for information and the approach to the analyses and specifically regarding the use of an SED to meet CEQA requirements, program-level document and program-level analyses, and evaluation of impacts to environmental resources.</p> <p>Also refer to Master Response 1.1 regarding State Water Board authorities and Master Response 1.2, Water Quality Control Planning Process, regarding Authorities and Regulations Governing Water Quality Control Planning Process.</p> <p>Additionally, please see Master Response 3.2, Surface Water Analyses and Modeling, which describes how model operations, by necessity, include constraints on reservoir operations and other aspects of Baseline and the LSJR alternatives, which are representative examples of likely system response to regulatory conditions, and by no means the only possible manner of operating in response to implementation of the plan amendments. Specifically, see Master Response 3.2 for an overview of reservoir operations and</p>

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		<p>the minimum reservoir requirements are not proposed as part of the Proposed Project. Rather, the minimum reservoir requirements are imbedded in the WSE Modeling. Staff did not perform any analyses based on modeling that did not include minimum reservoir levels.</p> <p>Thus, the environmental analysis assumes that minimum reservoir levels will be met and are part of the Proposed Project. However, it is not clear how Staff proposes to implement such requirements will be imposed on reservoir operators. Staff fails to disclose either the mechanism or the authority under which such requirements will be imposed. Therefore, the assumption that such requirements will be imposed is unsupported. For this reason it is not reasonable to assume that reservoir levels will remain unchanged by the Proposed Project.</p>	<p>determination of reservoir parameters in alternatives.</p>
3239	215	<p>Impacts from Floodplain Habitat</p> <p>The thresholds of significance that stem from floodplain habitat are flawed. First, Staff's estimate of the amount of improved floodplain habitat is deficient and incorrect. Staff estimates improved floodplain differently for each of the Stanislaus, Tuolumne, Merced, and San Joaquin Rivers. For the Stanislaus, Staff relies on the USFWS model, which estimates initiation of floodplain by reach of the River. Each reach of the River has a different floodplain inundation threshold, ranging between 1,000 and 1,500 cubic feet per second (cfs).</p> <p>Staff makes the general assumption that floodplain inundation for the Stanislaus initiates at 1,000 cfs, which falsely increases the quantity of improved floodplain habitat from the Proposed Project. By setting the floodplain inundation threshold at the lowest point (1,000 cfs) Staff shows there are 43 instances of inundation improvements of 10 percent or greater. (SED, at 19-63.) However, setting the inundation threshold at the more common and higher inundation threshold of 1,500 cfs, the instances of inundation improvements greater than 10 percent are reduced to only 19.</p> <p>On the Tuolumne, Staff relies on a version of floodplain modeling developed by USFWS in the FERC process. This model looks at only a specific reach of the River, from River mile 52 to River mile 21.5. Unfortunately, this evaluation omits the lower 20 miles of the River. This omission is curious because the modeling for this section of the River was completed and is part of the public FERC package available to the public and Staff. The lower 20 miles includes different, often higher, floodplain thresholds and may have reduced the amount of improved floodplain from the Proposed Project.</p> <p>On the Merced no floodplain model or relationship has been developed. For this reason, Staff estimated floodplain inundation by calculating water surface area and comparing the estimated surface area with flows. Staff estimated the floodplain inundation threshold on the Merced above River mile 27 would be 1,000 cfs. Staff did not consider inundation levels on the lower portion of the River. Staff did not provide a reason for such omission. The estimate on the Merced River is fairly crude and limited to only a portion of the River; the actual floodplain inundation that will result from the Proposed Project is not clear and cannot be determined from the information provided by Staff.</p> <p>Second, Staff's floodplain analysis is deficient because it does not consider the reality of floodplain limitations in the Plan Area. Most of the citations are from floodplain studies in the lowland bypass areas. (SED, at 19-89-19-99.) The Plan Area consists of incised channels at the bottom of steep mountainous terrain, leveed waterways, and urban development close to natural channels. Staff failed to consider these types of on-the-ground limitations.</p>	<p>This comment concerns anticipated benefits from floodplain habitat.</p> <p>The scientific justification for the benefits to native fish from the plan amendments with regard to floodplain habitat is provided in the SED, 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. Appendix C documents the scientific basis and technical resources that are used in the recirculated SED to analyze project effects in accordance with CEQA requirements. Chapter 19 supplements the information contained in Appendix C by quantitatively evaluating the benefits of the plan amendments in terms of potentially available floodplain habitat, and associated population implications to native salmonids.</p> <p>Please refer to Master Response 3.1 regarding the adequacy of modeling to support the analyses, which includes discussions of the modeling purpose and standards of analyses conducted, and the adequacy of the floodplain habitat analysis. Specifically, see the discussion regarding the floodplain habitat analysis which addresses comments related to the appropriateness of using modeled monthly flow and acre-days as a basis for the SED's floodplain analysis, the appropriateness of using floodplain inundation area (wetted area) as a measure of floodplain habitat, the validity of evidence from other rivers, the validity of conclusions regarding the benefits of floodplain inundation based on water temperatures, and the expected benefits to fish from increased floodplain inundation.</p> <p>The floodplain analysis uses the best available information with regard to the methods used, the reaches analyzed, and floodplain inundation-flow relationships available at the time. Although floodplain inundation area generally overestimates the amount of optimal habitat for salmonid rearing, it was considered sufficiently robust as an indicator of floodplain habitat availability to differentiate the alternatives and determine the potential for significant changes in floodplain habitat availability for juvenile salmonids and other native fishes. Please see Master Response 3.1 for more information regarding the SED's use of the best available science.</p> <p>The adaptive implementation (see Appendix K) process will allow the fine tuning of flows to achieve desired floodplain timing, magnitude, and duration. The flow-shaping element of adaptive implementation will enable flows to be shifted within the February through June time period, if best available scientific information indicates that flows should be shifted from the latter months to earlier months, in order to protect fish and wildlife. Higher flows can be achieved for part of any given time period than what is shown in tables 19-22 to 19-27. For example, flows during different portions of a 30-day period could be set to 3,000 cfs and 1,000 cfs, for a 30 day average of 2,000 cfs. This example illustrates that desired floodplain durations and magnitudes can be managed for; furthermore, higher unimpaired flows represent greater potential for habitat improvements. Please see Master Response 2.2, Adaptive Implementation, regarding clarification and examples of how adaptive implementation would</p>

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		<p>Instead, Staff's floodplain analysis considered any and all out of bank flows as usable floodplain habitat. This assumption is unsupported and contradicted by site-specific floodplain analyses. On the Tuolumne, a recent floodplain hydraulic study evaluated usable habitat and determined that the fraction of usable-compared to total-floodplain habitat can be as low as 30 percent. (HDR and Stillwater Sciences, 2016.)</p> <p>This same study also found that increases in floodplain inundation are off-set by losses in habitat associated with increased channel velocities and depths. Because Staff failed to consider the limitations and off-setting of floodplain habitat, Staff's estimates are based on calculations, but are not helpful in understanding the environmental impact of the Proposed Project on the ground. The simplified assumption that more flow equals more floodplain does not support the conclusion that the Proposed Project will result in improved floodplain habitat.</p> <p>Third, Staff's evaluation of floodplain analysis is deficient because it fails to evaluate the most important attributes of floodplain habitat-duration, depth, velocity, cover, connectivity, and water temperature. Without evaluating these factors, it is impossible to know whether usable floodplain habitat is created or not. Staff assumes that any water outside the capacity of the channel results in floodplain habitat. This grossly overstates the Proposed Project's actual improvement to floodplain habitat. Without understanding the attributes above, it is unclear whether the Proposed Project's out of channel flows create usable floodplain habitat or result in stranding or mass killing of fish due to lack of connectivity, temperature, depth, and/or other factors.</p> <p>Fourth, Staff's estimate of floodplain is not consistent with the Proposed Project. The Proposed Project requires the release of flows on a 7-day running average. The Staff estimated floodplain improvement based on a 30-day average. Staff's approach results in only twelve floodplain inundation estimates per year and all daily inputs for each month to be the same. In contrast, the Proposed Project's 7-day average will result in 52 different floodplain inundation estimates per year. The difference between twelve and fifty-two floodplain estimates demonstrates how vastly different the monthly floodplain estimates may be compared to the actual operation of the Proposed Project. Because the modeled estimates are so different from how the Proposed Project will be implemented, the environmental analysis based on the monthly modeling does not actually reflect the floodplain habitat that will result from the Proposed Project.</p> <p>Fifth, Staff's estimate of acre-days is misleading. Staff estimates acre-days by taking the monthly floodplain output and dividing by 30. Thus, the acre-day calculation is the same for every day of each month, making it really an acre-month estimate, rather than an acre-day estimate.</p> <p>Sixth, Staff's analysis determining the relationship between improved floodplain habitat and fish benefit is deficient. Staff makes several unsupported assumptions. For example, Staff determines that a 10 percent increase in floodplain habitat will have a significant benefit. (SED, at 19-56.) Staff fails to identify what will benefit-whether the benefit is to salmon population, rearing, or other metric is not clear. Further, Staff is contradictory about the role of the 10 percent metric. Staff states: "A 10% change in the frequency of floodplain flows, in combination with professional judgment, is used to determine a significant benefit or impact. Ten percent was selected because it accounts for a reasonable range of potential error associated with the assumptions used in the various analytical and modeling</p>	<p>work, and specifically flow shaping.</p> <p>The final report on the Tuolumne River study cited by the commenter (as HDR and Stillwater Sciences 2016) was released publicly in February 2017, several months after the SED was released. As such, the report was unavailable to staff during preparation of the SED. The report concludes that, overall, flows above bankfull discharge are associated with increases in habitat area for juvenile life stages of lower Tuolumne River salmonids. These findings are not inconsistent with the SED and are acknowledged in Master Response 3.1, Fish Protection (see the adequacy of the floodplain analysis discussion). Furthermore, expanding the floodplain analysis in the SED to incorporate the entire Tuolumne River would likely increase the floodplain inundation benefits associated with the plan amendments.</p> <p>Despite all of the studies performed on the Tuolumne River, salmon, steelhead, and other native fish populations have continued to decline to extremely low numbers. Salmon populations on the Tuolumne river have gone through the biggest decline compared to other rivers in the Central Valley between the 1967-1991 and 1992-2011 time periods (see Chapter 19). The plan amendments are designed to reverse the current trend of native fish declines (see Master Response 3.1) and reasonably protect beneficial uses.</p> <p>The lower Merced River shows similar increases in usable habitat with increasing overbank flows. Please refer to Master Response 3.1 regarding the anticipated increases in floodplain habitat from the plan amendments.</p> <p>As described in Appendix K, Revised Water Quality Control Plan, and Chapter 16, Evaluation of Other Indirect and Additional Actions, non-flow recommendations that are supplemental to flow requirements include floodplain habitat restoration in the tributaries.</p> <p>Please refer to response to comment 3239-216 regarding the use of the 10 percent change in frequency of occurrence.</p> <p>As described in Appendix C and Chapter 7, Aquatic Biological Resources, degradation and absence of floodplain habitat has been identified as a major stressor on native Central Valley fish populations through direct impacts on spawning and rearing habitat availability and indirect impacts on aquatic productivity and food web support provided by seasonal floodplain inundation. Please see Master Response 3.1 regarding the validity of the conclusions from the floodplain habitat analysis.</p> <p>Please refer to the responses to Master Response 1.1 regarding the use of the SED to meet CEQA requirements, the requirements for a program-level document and program-level analysis, evaluation of impacts to environmental resources, and concerns regarding the inclusion of other sources of information. Also refer to Master Response 1.1 for information about substantial evidence in the plan amendments, and regarding State Water Board authorities. See Master Response 1.2, Water Quality Control Planning Process, regarding authorities and regulations governing the water quality control planning process.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, regarding calculation of the instream flow objective as a percent of unimpaired flow. Also discussed in Master Response 3.2, the modeling of monthly flows using the WSE model provides an appropriate level of analysis to sufficiently support a programmatic evaluation of the plan amendments and inform the public and decision-makers on the range and magnitude of measureable benefits and potential impacts.</p>

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		<p>techniques." (SED, at 19-56.)</p> <p>This explanation makes no sense, in addition to being grammatically incorrect. The first sentence appears Staff is suggesting that professional judgment of an unnamed party plus a 10 percent floodplain improvement were used to determine significant benefit. It is unclear which party is supposed to use the 10 percent and the unidentified professional judgment to make the determination of significance. To make things even more confusing, the second sentence suggests that the 10 percent only covers a range of error. This means, by definition, a 10 percent improvement could mean no benefit at all. If the range of error is 10 percent, Staff certainly cannot assume that the same 10 percent will result in significant benefits.</p> <p>Staff states that generally, floodplain habitat has a positive effect on the growth of salmonids. (SED, at 19-53.) This positive effect is due to improvement of food resources on in floodplains. The support for this conclusion is based on studies of lowland bypass habitat and may not apply to the incised conditions of the Plan Area. Further, Staff has not identified food resource shortages as a factor limiting salmonid survival. Improving food resources may be helpful if there is a shortage, but it would have diminishing returns if the Plan Area already offers adequate food resources.</p>	
3239	216	<p>The evaluation of the impacts to aquatic resources is not supported by substantial evidence.</p> <p>Temperature Improvements</p> <p>Staff's temperature thresholds of significance are deficient and do not properly identify and evaluate the impacts of the Proposed Project on aquatic species. First, the method by which Staff measures temperature improvements is deficient. Staff measures temperature improvement by the change in number of days in which the United States Environmental Protection Agency (USEPA) temperature criteria will be met. This measurement is fraught with problems. First, the USEPA temperature criteria do not apply in the Plan Area. Instead, the USEPA criteria were developed in the Pacific Northwest region where water temperatures are much colder. Staff has not attempted to explain or provide support for its use of non-applicable criteria.</p> <p>Second, it is unclear why Staff did not simply reflect temperature improvements by showing the improved temperature of the water in degrees. The likely reason fails to analyze the impact of the Proposed Project in specific degree improvement is that the improvements are minimal. For example, using the threshold of number of days meeting the USEPA criteria, Staff is able to show that the 40 percent unimpaired flow requirement in the Proposed Project would result in a 12 percent improvement in meeting the USEPA criteria at the confluence of the Stanislaus and San Joaquin Rivers. (SED, at Table 19-3.) However, expressing the same improvement in degrees would show that the improvement only lowered the temperature by 1.2 degrees for 3.75 days. (See SED, at Table 19-4; 12% of 31 days in October is 3.75 days.)</p> <p>Third, Staff only modeled the temperature improvements of the Proposed Project with mitigation of minimum reservoir levels. Staff concedes that sending down the proposed 40 percent of unimpaired flow without minimum reservoir storage has a negative impact on water temperature (CITE). Staff failed to disclose the results of the Proposed Project without minimum reservoir levels. Instead, Staff decided that minimum reservoir levels must be implemented to ensure the negative temperature impacts of the Proposed Project were</p>	<p>This comment concerns anticipated temperature benefits to aquatic resources.</p> <p>The scientific justification for the benefits to native fish from the plan amendments with regard to cold water habitat is provided in the SED, 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, Chapter 7, Aquatic Biological Resources (see AQUA-4) and Master Response 3.1, Fish Protection. Chapter 7 includes an analysis of changes in exposure of fish to suboptimal water temperatures resulting from changes in reservoir storage and releases and finds that for Alternatives 3 and 4, decreases in exposure of various life state of Chinook salmon and steelhead to suboptimal water temperatures would occur. Appendix C documents the scientific basis and technical resources that are used in the recirculated SED to analyze project effects in accordance with CEQA requirements. Chapter 19 supplements the information contained in Appendix C by quantitatively evaluating the benefits of the plan amendments in terms of potentially available cold water habitat, and associated population implications to native salmonids.</p> <p>Please refer to Master Response 3.1 for information regarding the adequacy of modeling to support the analyses. Specifically, see the discussions regarding the use of USEPA's recommended temperature criteria and its application to the plan area, the use of a monthly flow model with a sub-daily temperature model, and anticipated reductions in harmful and lethal temperatures from the plan amendments. Also, refer to the justification and description of the plan amendments for protecting fish, and specifically to the discussion regarding seasonal flow from February through June which includes longitudinal profiles that effectively illustrate the temperature improvements expected from the plan amendments. Please also refer to Master Response 3.1, Fish Protection, regarding the adequacy of modeling to support the analyses, and see the section on SalSim regarding number of fish the plan amendments would produce.</p> <p>The San Joaquin River Basin-Wide Water Temperature Model, developed using the U.S. Army Corps of Engineers (USACE) Hydrologic Engineering Center's HEC-5Q water quality model, was used in coordination with the WSE model results to evaluate temperature effects caused by the LSJR alternatives. Please see Master Response 3.2, Surface Water Analyses and Modeling for additional information about temperature</p>

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		<p>avoided. (CITE) This approach violates the most basic tenants of CEQA, which require the impacts of the Proposed Project be disclosed and, only after such disclosure should mitigation be developed. (CITE)</p> <p>Fourth, Staff misrepresents the resulting temperature improvements from the Proposed Project in several ways. First, the WSE Model, which generates the estimated temperature changes is run on a 30 day or monthly average. Similar to the floodplain results, this means that Staff only has twelve different temperature data points for each year. However, Staff divides these monthly temperature impacts by 30 and attempts to represent that it generated daily temperature results. (12/5/16 Workshop, at 114.) This misrepresentation is especially egregious because the Proposed Project requires implementation at a 7-day average, which would have different impacts than those modeled by staff. Thus, the temperature modeling does not reflect the temperature impacts that the Proposed Project will have. Second, Staff attempts to represent that the temperature improvements are a result of increased flows. (SED, 19-47 ["This temperature evaluation indicates that increasing flows during the February through June time period can provide significant temperature benefits to juvenile fall-run Chinook salmon and steelhead."].)</p> <p>However, Staff later conceded the exact opposite was true-increasing the flow requirements actually had a negative effect on temperature, which Staff then had to mitigate by increasing minimum reservoir storage levels. Staff specifically stated: "with the increased drawdowns that would occur to meet the flow requirements, that was found to have temperature effects. So this was done to not have those effects by increasing the carryover storage." (12/5/16 Workshop, Les Grober, at 73.) Thus, the statement in the SED that increased flows would result in temperature improvements is not correct. But, rather, the opposite is true-increased flow releases would empty reservoirs and cold water pool reserves, which increases temperature impacts. (12/5/16 Workshop, Les Grober, at 78 [stating more clearly that "there would be some reservoir carryover requirements included to offset any temperature effects."].)</p> <p>Fifth, Staff does not explain how the improvement in temperature will change the environment. In other words, Staff does not support its conclusion that temperature improvements will result in fishery benefits. Staff determines that a ten percent increase in days in which the EPA temperature criteria is met is a significant benefit. (SED, at 19-18.)</p> <p>Staff employs the same confusing and unclear language used in the floodplain section and states: "A 10% change in the amount of time that USEPA criteria is met, in combination with professional judgment, is used to determine a significant benefit or impact." (SED, at 19-18.) Again, Staff adds to the confusion of this sentence with a second sentence stating that "Ten percent was selected because it accounts for a reasonable range of potential error associated with the assumptions used in the various analytical and modeling techniques." (Id.) Staff cannot use the 10 percent both for margin of error and for indication of a significant benefit; the two concepts are mutually exclusive.</p> <p>Most critically, Staff is unable to offer a direct link between temperature improvements and change in aquatic environment; i.e., fish improvements. The only method by which Staff attempts to equate temperature improvements into fish benefit is through SalSim. However, SalSim estimated a very small, almost statistically insignificant change in the environment, estimating only 1103 more fish into production. Production is the total number of fish in the system, which means the Proposed Project increases the total production of fish by less than xxx percent. Staff's position is that SalSim is flawed and this</p>	<p>modeling.</p> <p>As described in the SED, Chapter 19 (and further described in Master Response 3.1), meaningful benchmarks were used for evaluating temperature-related impacts or benefits of the LSJR alternatives based on well documented and relevant literature. The SED primarily uses USEPA (2003) recommended temperature criteria to evaluate changes in the amount of time that optimal temperature conditions are met at different locations in the LSJR and each of the three major eastside tributaries. The 2003 USEPA guidance is based on a comprehensive review and synthesis of a large body of peer-reviewed studies and published papers, including temperature studies completed on Central Valley salmonids, and subsequent review by both an independent scientific panel and the public.</p> <p>In addition to the results showing the percentage of time different flow scenarios meet USEPA recommended temperature criteria: Exceedance tables are provided in Chapter 7, Aquatic Biological Resources, which provide the full range of temperature changes at multiple times and locations; Average temperature and 90th percentile temperature changes are provided in Chapter 19, Analyses of Benefits to Native Fish Populations from Increased Flow between February 1 and June 30; Additional temperature model results are shown in Appendix F.1, Section F.1.6.2, Temperature Model Results; and, The temperature output files which contain 34 year time series with temperature results every six hours for each evaluated case are available to the public for review.</p> <p>As described above, temperature results were provided in many meaningful forms in the SED, and it is unclear why the commenter has stated that changes to water temperature in degrees were not provided.</p> <p>The commenter incorrectly states that the temperature model used for evaluation in the SED only generates "twelve different temperature data points for each year". As described in Chapter 19, Section 19.2.2, the temperature model provides a temperature response at 6-hour intervals. The temperature evaluations in the SED are based on 6-hour modeling results for the period of 1970 through 2003 as described in the SED.</p> <p>The commenter incorrectly states "that increased flows would result in temperature improvements is not correct". As shown in Figure 19-5 and Master Response 3.1, when instream flows are higher during the spring time-period water temperatures are typically much lower. Additionally, as shown in the temperature results in Chapter 7, Chapter 19, and Master Response 3.1 the plan amendments can provide dramatic improvements in water temperature for native fish. The commenter is highlighting the importance of reservoir storage to maintain cold-water habitat on a year-round basis. Please see Appendix K for additional information on the proposed plan amendment including minimum reservoir carryover storage targets or other requirements to help ensure that providing flows to meet the flow objectives will not have adverse temperature or other impacts on fish and wildlife. Also, see the response to comment #214 in this letter regarding the WSE modeling and discussion of minimum reservoir levels.</p> <p>Please see Master Response 3.2, Surface Water Analyses and Modeling, which describes how model operations, by necessity, include constraints on reservoir operations and other aspects of baseline and the LSJR alternatives, which are representative examples of likely system response to regulatory conditions, and by no means the only possible manner of operating in response to implementation of the plan amendments. Specifically, see Master Response 3.2 for an overview of reservoir operations and reoperation, determination of reservoir parameters in the LSJR alternatives, and for a discussion of carryover storage.</p> <p>The majority of the assessments in the SED use the frequency of occurrence (i.e. a change in the amount of time) of meeting a specific metric to compare baseline results to the LSJR alternatives. This type of result is very powerful for illustrating how the frequency of conditions change between baseline and an alternative. The 10 percent was selected because that value is assumed to be high enough to reveal significant change to a condition while a lessor amount of change would be due to error in the various analytical and modeling</p>

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		<p>number is not correct. (CITE) However, Staff has no other mechanism or other estimate that links the estimated temperature improvement to a change in the aquatic resources environment.</p>	<p>techniques. This type of summary statistic is commonly used in environmental documents and is appropriate. Please refer to Master Response 2.3, Presentation of Data and Results in SED and Responses to Comments, for more information.</p> <p>Please refer to Master Response 1.1, General Comments, for information about substantial evidence in the plan amendments and for information on the approach to the analyses and specifically regarding the use of an SED to meet CEQA requirements, program-level document and program-level analyses, and evaluation of impacts to environmental resources. Also refer to Master Response 1.1 regarding State Water Board authorities, and to Master Response 1.2, Water Quality Control Planning Process, regarding authorities and regulations governing the water quality control planning process.</p>
3239	217	<p>The evaluation of groundwater impacts is not supported by substantial evidence.</p> <p>Staff's analysis of groundwater impacts in the 2016 SED was significantly different from the 2012 analysis. Although that may not seem surprising due to the passage of SGMA and changing role of the State Water Board with regard to groundwater, none of the changes were SGMA related. In 2012, staff assumed all surface water shortages from the proposed project would be offset by groundwater pumping. (2012 SED, at 9-26.)</p> <p>Staff set a threshold of significance at five percent (5%) or more increase in groundwater pumping. (Id.) Staff disclosed it estimated the 40 percent flow objective would result in an increase in groundwater pumping of approximately 269,000 acre feet in an average year across all four subbasins. (Id., at 9-23.) Staff determined the State Water Board was unable to mitigate for these impacts, since the State Water Board had little jurisdiction over groundwater resources.</p>	<p>Executive Summary, Section ES11.3, Groundwater and Water Supply Assumptions, and the Associated Use of the SWAP Model, explains that the change in groundwater substitution assumptions between the 2012 SED and 2016 recirculated SED is intended to reflect a more realistic level of groundwater replacement, surface water storage, reservoir reoperation, and surface water deficit not replaced by groundwater pumping. Please see Master Response 1.1, General Comments, for general information regarding the programmatic scope of the SED and substantial evidence in the SED. Please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, regarding the approach to the groundwater impact analysis in the recirculated SED, including the criteria and threshold of significance.</p>
3239	218	<p>Change in assumption regarding reliance on groundwater pumping is unsupported.</p> <p>In the 2012 SED analysis, Staff assumed that any decrease in surface water deliveries would be made up by pumping groundwater. (SWRCB 2012 SED, at 9-26.) This assumption resulted in the SED estimating that groundwater pumping would increase by approximately 269,000 acre feet. In the 2016 SED, Staff no longer assumes that all surface water decreases will result in groundwater pumping increases on a one to one basis. Instead, Staff assumes the same amount of groundwater pumped in 2009 will again be pumped after the Proposed Project is implemented. Staff does not address the difference in the assumptions between the 2012 and the recirculated version.</p>	<p>Please see response to Comment 3239-217.</p>
3239	219	<p>Staff fails to disclose estimate of 2009 pumping.</p> <p>Staff fails to disclose the bases for assumptions regarding increased groundwater pumping based on 2009 maximum estimates. Staff indicates these numbers are presented in the Irrigation Districts Agriculture Water Management Plans (AWMP). (SED, at G-14.) However, the 2009 maximum groundwater pumping is not based on the existing maximum capacity of facilities in 2009. (Id., at G-15.) Rather, the total maximum capacity in 2009 indicates that as much as 626,000 acre feet could be pumped in 2009. (Id.) Similarly, the SED includes different estimates for pumping depending on the year type. The estimated 2009 pumping capacity in an average year is 364,000 acre feet, while in a dry year, the estimated pumping capacity is 524,000 acre feet. (Id.) Therefore, the term "capacity" is a misnomer and misleading.</p> <p>The SED explains that these numbers are the "likely increase in groundwater pumping." (Id.)</p>	<p>Please see response to comment 3239-217 regarding the change in groundwater assumptions between the 2012 SED and 2016 recirculated SED.</p> <p>Appendix G, Agricultural Economic Effects of Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results and Appendix F1, Hydrologic and Water Quality Modeling, explain the estimates for irrigation district minimum and maximum groundwater pumping are based on each district's agricultural water management plan (AWMP) and response to a State Water Board information request. The SED assumes that 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. For discussion on modeling assumptions associated with 2009 and 2014 infrastructure in the WSE model, please see Master Response 3.2, Surface Water Analyses and Modeling.</p>

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		<p>However, the SED fails to explain how the State Water Board determined these to be the "likely" numbers. The SED does not explain how the State Water Board calculated the 2009 maximum pumping estimates. The numbers provided by the State Water Board at G-15 clearly indicate the State Water Board understands there is capacity to replace all decreases in surface water with groundwater pumping. This was the 2012 assumption--i.e., that all surface water decreases would be made up with groundwater pumping.</p> <p>In 2009 the existing facilities could have supported the same assumption of total replacement that the State Water Board made in 2012. However, the State Water Board did make that assumption, but instead selected an amount that was less full replacement and somewhat based on pumping that existing in 2009. The State Water Board failed to explain the change in analysis. The State Water Board's failure to explain its change in assumptions and failure to disclose the reasoning behind the new assumptions that some, but not all, of the decreased in surface water would be replaced by groundwater pumping result in a failure to explain, disclose or support the SED groundwater analysis.</p>	
3239	220	<p>Thresholds of significance are deficient and not supported by substantial evidence.</p> <p>Staff established only two thresholds of significance to evaluate the environmental impacts of the Proposed Project on groundwater pumping. One of the two thresholds analyzes the decrease in groundwater balance. This threshold is deficient for several reasons, the main reason being that it does not properly reflect the environmental impacts of the Proposed Project.</p> <p>Staff considers a groundwater impact significant if the groundwater balance decreases by more than one inch. The groundwater balance is the net contribution of each irrigation district to the basin calculated by adding the off-stream reservoirs seepage, conveyance losses, and deep percolation from irrigation lands and subtracting irrigation district groundwater pumping. (G-30; 9-46.) Staff determines the net change in the groundwater balance between the baseline and the Proposed Project. This change (i.e., decrease) in the groundwater balance is then divided by the acreage in the basin to determine whether there is one or more inches in groundwater balance depletion.</p> <p>This threshold of significance does not properly reflect environmental impacts for several reasons. First, spreading the impact over the entire subbasin acreage is misleading and not reflective of environmental impacts. For example, Staff determined that the reduction in groundwater balance for Oakdale and South San Joaquin Irrigation Districts does not have a significant environmental impact on the Eastern San Joaquin subbasin. (SED, at 9-62.) This conclusion is driven by the fact that the Eastern San Joaquin subbasin is, by far, the largest of the subbasins at 707,000 acres.</p> <p>Because of this large subbasin acreage, Staff concludes that there is no environmental impact to the Eastern San Joaquin subbasin because the Proposed Project only reduces the groundwater balance by .6 of an inch. (SED, at 9-58.) However, the existing or baseline balance in inches is only 1.1 inches in total, because the subbasin is so large at 707,000 acres. Therefore, in order to reflect a significant impact, the existing 1.1 inches would have had to have been reduced by 90 percent or more.</p> <p>As set forth in the SED, the 40 percent unimpaired flow of the Proposed Project will reduce the groundwater balance in the Eastern San Joaquin subbasin by more than fifty (50) percent. (9-58.) However, this reduction of groundwater balance by more than half is not</p>	Please see response to Comment 3239-222.

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		<p>considered a significant environmental impact because it does not amount to more than an inch reduction. Staff discloses that the groundwater balance will be reduced by 82 percent in the Merced subbasin, 27 percent in the Turlock subbasin, and 19 percent in the Modesto subbasin.</p> <p>These are considered significant impacts, while the 54 percent reduction in the Eastern San Joaquin subbasin is not a significant impact. These numbers establish that using a threshold of one inch does not reflect the actual impact to the subbasin, but instead, masks the existence of significant environmental impacts. For this reason, this threshold should not be accepted as a reasonable method to determine environmental impacts and the SED is not supported by substantial evidence.</p> <p>Second, inches of groundwater balance is not an accepted standard or groundwater threshold used by groundwater professionals. The inches of groundwater balance reduction is not found in any [add groundwater plans, studies, etc.]. It is unclear how Staff selected this threshold. Further, Staff offers no explanation regarding scientific support, validity or other technical based support for the selection of this threshold. It is not clear why Staff did not express or analyze impacts in reduction in groundwater elevation, which is a fairly standard and accepted measure of groundwater impacts.</p>	
3239	221	<p>Subsidence threshold of significance is deficient.</p> <p>Staff's second threshold of significance is the potential subsidence of lands. (SED, at 9-47.) However, Staff does not undertake a true analysis of potential subsidence. Instead, Staff assumes that subsidence is significant only in areas "where subsidence has previously occurred." (SED, at 9-47.) The assumption that subsidence will only be significant where it has previously occurred is unexplained and unsupported. Staff fails to explain why this assumption is valid. Instead, Staff concludes that only the El Nido portion of the Merced subbasin has reported subsidence.</p> <p>Staff states: "Despite reports of periods of declining groundwater levels, subsidence has not been reported for the other three subbasins of interest." (9-47.) Staff's conclusions are not cited; it is not disclosed or understood which reports Staff has relied upon for concluding that the other subbasins have not reported any subsidence. Further, when evaluating whether the Proposed Project will result in subsidence, Staff states that outside the Merced subbasin, "subsidence in other subbasins is less likely to occur given there is little evidence that soils in these subbasins are subject to inelastic compaction." (SED, at 9-68.) Staff fails to provide citation, reference or other support for the conclusion regarding the remaining subbasins being exempt from compaction and subsidence. (Id.)</p> <p>The basis upon which the State Water Board concludes that soils in the other basins are not subject to inelastic compaction is not clear. Staff does not provide any soil analysis; it is unclear if any such analysis was performed. Staff does not provide any evaluation of subsidence and appears to be an unsupported assumption. Staff's subsidence threshold are not supported by substantial evidence; Staff simply makes conclusions regarding subsidence and offers no real evaluation or analysis.</p>	Please see response to Comment 3239-222.
3239	222	<p>Failure to Analyze SGMA Undesirable Results</p> <p>Since the 2012 SED was released, the Sustainable Groundwater Management Act (SGMA) was passed in 2014. SGMA provides the State Water Board with enforcement authority over</p>	SGMA was passed by the legislature in 2014 to address overdraft issues and associated negative impacts to groundwater basins from over extraction. GSAs are now formed in the plan area, but GSPs have yet to be drafted or implemented. The water quality control planning process and SGMA are two separate and distinct regulatory processes. However, knowledge of the plan amendments during the GSP drafting phase allows

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		<p>basins that are not managed to sustainable levels by 2040. SGMA defines sustainability as the avoidance of six undesirable results: (1) reduction in groundwater storage; (2) lowered groundwater elevations; (3) degraded water quality; (4) seawater intrusion; (5) land subsidence; and (6) depletions of interconnected surface water. (Water Code section 10721(m).) Staff failed to evaluate the environmental impacts with regard to SGMA compliance and chose deficient thresholds of significance.</p> <p>SGMA requires that high and medium priority groundwater basins be managed to achieve sustainability. SGMA allows each basin to establish its own definitions of sustainability, however, SGMA requires that such sustainability be based on the avoidance of six undesirable results. These six undesirable results include: decrease in groundwater storage, elevation, subsidence, degradation of water quality, intrusion of seawater, and depletion of interconnected surface waters.</p> <p>Staff fails to evaluate the six factors that SGMA identifies as the metrics upon which groundwater sustainability is defined. Instead of evaluating these six factors, Staff states: "since the groundwater protections that will be afforded by SGMA cannot be determined at this time with precision, this chapter evaluates the potential impacts on groundwater levels from LSJR alternatives without including SGMA as an ameliorating factor, which means that the estimates of impacts are likely more conservative (i.e., worse) than would occur in the groundwater basins over time." (SED, at 9-3.)</p> <p>Simply because Staff cannot determine the "precise" implementation of SGMA, does not mean that it may ignore SGMA and the reasonably foreseeable impacts from the implementation of SGMA. (CEQA Guidelines, § 15145I Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners, (2001) 91 Cal.App.4th 1344, 1370.) Rather, SGMA provides specific guidelines for evaluating sustainability, which requires Staff to, at the very least, evaluate the impact of the Proposed Project on the six factors that define sustainability under SGMA.</p> <p>First, Staff should have evaluated the impacts of the proposed project Objective on groundwater storage. Staff includes a brief discussion of each groundwater basin in the impacted Plan Area. (SED, at 9-24 to 9-31.) This description fails to include any disclosure of groundwater storage for any of the basins in the Plan Area. (Id.) Specifically, Staff fails to discuss the groundwater storage available in each basin, the amount of drawdown or elevation change, the ability to recharge each basin, the quantity of groundwater storage lost due to compaction, or any other technical issue related to groundwater storage. Further, the ability to store groundwater and recover stored groundwater is vitally important to each groundwater basin's ability to achieve sustainability. Staff fails to identify these issues in each basin. In addition, Staff failed to analyze the potential impacts of the Proposed Project on the issue of groundwater storage. The SED is deficient because it simply does not attempt to evaluate how the Proposed Project will affect groundwater storage.</p> <p>Second, Staff should have evaluated the impacts of the Proposed Project on groundwater elevations. As noted above, Staff performs an indirect analysis of groundwater elevation impacts. Specifically, Staff estimates the decrease in groundwater balance by measuring each Irrigation District's groundwater balance and dividing by the acres in each corresponding basin. The metric of inches of groundwater balance per acre is compared before and after each proposed alternative. As noted above, this groundwater balance inches metric is not an accepted measurement; it is not used by any other groundwater</p>	<p>for integrated planning of scarce water resources that does not trade impacts between surface and groundwater. The level of detail in the SED is reasonable and appropriate for a program-level analysis and is not meant to be, nor required to be, a site-specific analysis of, for example, each cone of depression or potential cone of depression in each basin. Chapter 9, Groundwater Resources, Section 9.2.1 San Joaquin Valley Groundwater Basin and Subbasins, recognizes that overdraft can lead to significant impacts such as decreases in groundwater levels, increases in pumping costs, land subsidence, and degradation of groundwater quality. However, it is speculative to assume how pumpers in each area will respond to implementation of the flow objectives, because it will depend on many individual and collective decisions including, but not limited to, the discrete actions of local water users in response to reductions in surface water, crop choices in response to markets and other factors, conservation measures, and implementation of SGMA.</p> <p>SGMA was properly included in the SED 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 17, Cumulative Impacts, Growth-Inducing Effects, and Irreversible Commitment of Resources, Table 17.1, Cumulative Project List, and Section 17.2.2, Cumulative Impact Analysis, Agricultural Resources; and, Chapter 22, Section 22.4.1, Potential Impacts of LSJR Alternatives).</p> <p>The purpose of, and requirements for, the SED are not the same as a GSP. The variables and undesirable results discussed in the comment (e.g., hydrogeologic characteristics of the subbasins; beneficial uses within each subbasin; quantification of saline intrusion, groundwater elevation decline, reduction in groundwater storage, subsidence, depletions of interconnected surface water, and degraded water quality; and groundwater storage and recovery options) require site-specific information and will depend on the discrete actions of local water users. As discussed above, GSPs have yet to be developed, and it would be speculative to assume how local entities in each area will define sustainability and respond to implementation of the flow objectives. As discussed in Chapter 9, much of the available groundwater data is incomplete or only represents a certain geography (e.g., county) of a total subbasin. The legislature intended to address these data gaps through SGMA (Water Code § 10720.1 subdv. (f)). Furthermore, these variables are required components of a GSP (Cal. Code Regs., tit 23, §§ 354.12 through 354.18; Water Code §§ 10727.2, 10727.4 and 10727.6), which GSAs will use to establish sustainability goals and define undesirable results for each basin (Cal. Code Regs., tit 23, §§ 354.22 through 354.30).</p> <p>The SED groundwater impact analysis is reasonable and appropriate for a program-level evaluation and the State Water Board used the best available data for both the SED and plan amendments. However, the development of GSPs is, by statute, driven by local public agencies. Only if a basin is declared probationary does the State Water Board develop an interim plan. For further discussion on the approach to the groundwater impact analysis, including the thresholds of significance, groundwater models, and SED consideration of SGMA, please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act.</p> <p>Master Response 3.4, provides information on the length equivalent approach used for the SED groundwater impact analysis, including discussion of normalizing impacts by dividing the reduction in net recharge as a volume, by subbasin area. It is not clear why the commenter asserted the baseline recharge per subbasin area for the Eastern San Joaquin Subbasin (1.1 inches) should be reduced by 90 percent or more.</p> <p>Please refer to Appendix F.1, Hydrologic and Water Quality Modeling and Appendix G, Agricultural Economic Effects of Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results, for a detailed description of the models and related assumptions used to evaluate impacts.</p>

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		<p>analysis; it is not accepted as valid by any groundwater experts.</p> <p>It is not clear why Staff chose to use such a complicated measurement, when the measurement of groundwater elevation is often used, is accepted as technical practice and can be more readily understood and compared to other basins. Further, Staff offers an approximate conversion of each inch of groundwater balance equating to about 10 inches of groundwater elevation. (SED, at 9-46-9-47.) Staff fails to explain how it analyzed the impacts of the Proposed Project on the groundwater elevation of each basin.</p> <p>Third, Staff should have evaluated the impacts of the Proposed Project on seawater intrusion. This evaluation would likely be limited and not extensive. The Plan Area is not influenced by coastal conditions and seawater intrusion is not likely to result from the Proposed Project. There are existing sea water intrusion maps that indicate the existence, direction and extent of sea water intrusion. Staff should have disclosed the existing information along with hydrogeologic information from the Plan Area subbasins and provided a brief analysis about whether seawater intrusion applied to the subbasins affected by the Proposed Project.</p> <p>Fourth, Staff should have evaluated the impacts of the Proposed Project on subsidence. As mentioned above, Staff did not perform a proper analysis of subsidence. Staff assumed that no significant subsidence would occur in areas where subsidence had not yet occurred. (SED, at 9-47.) This obscenely simplistic conclusion contradicts the subsidence information provided in the background section and fails to satisfy the evaluation required by CEQA.</p> <p>In the background section of the groundwater chapter, Staff recognized that subsidence is a major issue in the San Joaquin Valley. (SED, at 9-17.) The SED acknowledges that the "extensive withdrawal of groundwater from the unconsolidated deposits has cause[d] widespread land subsidence in the San Joaquin Valley (USGS 1986). Long-term groundwater level declines can result in a vast one-time release of "water of compaction" from compacting silt and clay layers in the aquifer system, which causes land subsidence (USGS 1999). Land subsidence in the region due to groundwater pumping began in the mid-1920's (USGS 1975; USGS 1991; USGS 1999.)" (SED, at 9-17.) With the understanding that subsidence has been an issue in the region and that the Plan Area continues to have decreasing groundwater levels (SED, at 9-13), it is contradictory for the SED to then conclude that only a small portion of one of the basins in the Plan Area could potentially experience subsidence impacts.</p> <p>CEQA requires Staff identify all reasonably foreseeable impacts that could result from the Proposed Project. (Laurel Heights, at 404-410.) To recognize that the San Joaquin Valley has a history of subsidence and that groundwater levels are falling, but fail to identify and evaluate potential impacts from subsidence is irresponsible and certainly not compliant with CEQA requirements.</p> <p>Further, the failure to evaluate the impacts on subsidence ignores the best available science. There are several models that evaluate subsidence and are able to estimate subsidence impacts from groundwater depletion. Staff should have analyzed subsidence with one of these tools. Further, DWR has released Best Management Practices and Staff could have used these or other similar practices to evaluate subsidence. The cursory set of conclusions that are included in the existing subsidence chapter do not amount to sufficient analysis under CEQA or SGMA requirements.</p>	<p>Chapter 9, Groundwater Resources, Section 9.4.2, Methods and Approach, recognizes that "Substantial groundwater depletion in an area with soils that are susceptible to inelastic compaction could result in subsidence." For the groundwater impact analysis, subsidence is considered significant if reduction in net groundwater recharge is more than one inch in a subbasin where subsidence has previously occurred. Such a criterion was chosen, because the State Water Board believes those subbasins are at the greatest risk of subsidence.</p>

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		<p>Fifth, Staff should have evaluated the impacts of the Tributary Flow Objective on water quality. Staff fails to identify the existing groundwater quality in each of the groundwater basins in the Plan Area. Staff states that the groundwater quality varies substantially throughout the basins of the Plan Area. (SED, at 9-19.) Staff states generally that elevated salinity levels exist, especially in the western portion of the Valley. (SED, at 9-20.) Nitrates are not found in high concentrations, but exist increasingly due to groundwater pumping and irrigated agriculture. (Id.) These highly generalized statements do not disclose the water quality in each basin, which Staff must do to comply with CEQA. In its analysis, the also concedes that the Proposed Project could degrade groundwater quality. (SED,at 9-63.) However, instead of identifying and analyzing potential groundwater quality impacts, Staff simply states the analysis is speculative. (SED, at 9-63.) This statement is odd, provided Staff was able to conclude that the impacts could result in degradation.</p> <p>Staff states: "Specifically, determining the changes to groundwater quality is speculative as it is dependent upon many factors including, but not limited to, the location of groundwater pumping, the amount of groundwater pumped, the frequency at which pumping would occur, location of contaminants, the type of contaminants (e.g. water soluble or not), proximity of contamination to aquifers, hydrogeological characteristics of the aquifer, individual well construction, well depth, groundwater levels, and localized conditions such as proximity to unused or abandoned wells. (SED, at 9-63.)</p> <p>Staff is able to correctly identify the components and information necessary to properly analyze groundwater quality impacts. Simply because it would be a large amount of work does not mean that the analysis is speculative. The analysis is not speculative; CEQA requires Staff analyze the environmental impacts of the Proposed Project. To the extent such evaluation must be caveated or otherwise rely on reasonable assumptions, it does not mean that such evaluation is so speculative it cannot be performed. (CEQA Guidelines, § 15145l Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners, (2001) 91 Cal.App.4th 1344, 1370.)</p> <p>Finally, Staff should have evaluated the impacts of the Proposed Project on depletion of interconnected surface water supplies. Staff fails to identify which groundwater aquifers are interconnected to surface water. Staff states that the Proposed Project would increase water in the channels that could recharge groundwater basins. (SED, at 9-62.) Staff continues on to state that such recharge is not likely, as recharge from the existing River channels is insubstantial. (Id.) Staff also notes that if groundwater levels decrease "over time, the aquifer may eventually no longer intersect with portions of the rivers." (9-62.) These statements are general, contradictory, and unsupported.</p> <p>The statements are general: Staff fails to look at any specific river (Stanislaus, Tuolumne, Merced, or San Joaquin) and determine whether or not it is interconnected to surface water at any specific point. Further, Staff fails to analyze whether the Proposed Project would affect the interconnected relationships that may exist. The statements are contradictory: on one hand Staff takes the position that increased water in the channel will benefit interconnected groundwater, but on the other hand Staff recognizes that groundwater levels may decrease and not have any interconnection with surface water at all. The reader is left to wonder which one of these environmental impacts Staff believes is reasonably foreseeable.</p>	
3239	223	The SED does not accurately describe the groundwater baseline conditions.	The level of detail in the groundwater impact analysis is reasonable and appropriate for a program-level analysis and is not meant to be, nor required to be, a site-specific analysis of, for example, each cone of

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		<p>Staff fails to accurately describe the baseline groundwater conditions. Staff identifies the four groundwater basins that underlie the Plan Area. (SED, at 9-1.) Staff discloses the acres overlying each basin and includes a chart that denotes which aquifer characteristics (such as formations and deposits) exist within each basin. Staff also provides general information regarding water balance and groundwater movement that is text book language and not specific to any basin.</p> <p>However, Staff fails to describe the actual baseline for each groundwater basin. For example, Staff does not provide a contour map showing the hydrogeologic features of each basin. Staff does not explain how water moves vertically or horizontally within each basin. Staff does not estimate or summarize the estimated recharge for each basin. Staff does not identify which basins have specific groundwater quantity or quality challenges or the origins or cause of any such challenges.</p> <p>Further, Staff does not address movement of water between the basins or address the different depths within each basin. Staff explains that its analysis includes several "simplifying assumptions" which include the assumption that the four connected basins are separate pools of water and that each basin has no separation between shallow and deeper aquifers. (SED, at 9-44.) These assumptions simply misstate the characteristics, challenges and specific attributes of each groundwater basin. Staff must accurately describe each groundwater basin potentially affected by the proposed project and identify the regional reliance on each groundwater basin in the description of the groundwater baseline.</p>	<p>depression or potential cone of depression in each basin. The State Water Board acknowledges that uncertainty is inherent in any programmatic planning effort of this geographic and temporal scale. However, the State Water Board strived to use best available science throughout the SED, consistent with State CEQA Guidelines.</p> <p>Figures 9-3 through 9-5 and the related discussion in Chapter 9, Groundwater Resources, Section 9.2.1, San Joaquin Valley Groundwater Basin and Subbasins, describe the environmental setting for groundwater resources, including the physical characteristics of the four primary subbasins underlying the plan area. Section 9.4.2, Methods and Approach, provides the scientific basis for the aquifer assumptions; the system was treated as four separate pools, because there is some connectivity between the different depths, and increased groundwater pumping would occur in both shallow and deep wells. Substrate with low permeability might slow the interaction between deeper confined and shallower unconfined sections of the aquifer, but water pumped from a deeper confined section of the aquifer would eventually be replaced by water from above or from the edges. Furthermore, within the four subbasins, the number of deep and shallow wells is too large to feasibly assign pumping increases to separate sections of the aquifer. The simplifying assumptions of separating the aquifers by subbasin and not depth are acceptable, because the purpose of the analysis is to estimate the average effect of the LSJR alternatives on the subbasins as a whole, not effects at specific well locations.</p> <p>The metric used in the groundwater impact analysis is net reduction in groundwater recharge. Baseline groundwater recharge for each subbasin is estimated and presented in Table 9-12, Average Annual Net Change in Irrigation District Groundwater Balance Associated with the LSJR Alternatives per Subbasin Area.</p> <p>Please also see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, regarding the method and approach of the groundwater resource impact analysis.</p>
3239	224	<p>Failure to Analyze if Groundwater Pumping is Reasonable</p> <p>Staff estimates that, in an average year, the 40 percent unimpaired flow requirement will result in an increase of approximately 105,000 acre feet of groundwater pumping per year. (SED, at G-15.) This same alternative would increase groundwater pumping by 302,000 acre feet in dry years. (Id.) Staff fails to analyze whether there would be groundwater available to support the increased pumping. Staff never undertakes even a superficial analysis of whether such water may be available in the future.</p> <p>The assumption that groundwater will be available to sustain increased pumping is not reasonable. For example, if there are three dry years in a row, Staff assumes that the groundwater basins will be able to support a drawdown of 1.572 million acre feet of groundwater pumping in that three year period. The total quantity of storage in the four basins is xxxx. For this reason, it is not reasonable for Staff to assume that the amount of groundwater Staff relies upon will be available will actually be available. If Staff must revise the SED to include an analysis of whether the amount of groundwater Staff assumes will be pumped is available.</p>	<p>The SED assumes that if local water users choose to replace reduced surface water supply with groundwater, maximum groundwater pumping could reach the levels associated with 2009 and 2014 infrastructure. For discussion on modeling assumptions, please see Master Response 3.2, Surface Water Analyses and Modeling.</p>
3239	225	<p>Failure to Analyze Whether Groundwater Pumping is Sustainable</p> <p>Since the 2012 SED release, SGMA was passed and has become law. SGMA requires the sustainable management of groundwater. Because local groundwater sustainability agencies are required to develop groundwater sustainability plans that define sustainability for each basin, Staff concludes that evaluating whether the proposed project will be sustainable is speculative. (SED, at 9-3.) The statement that the SED is exempt from</p>	<p>The comment mischaracterized the statement on page 9-3. SGMA was not included in the baseline or alternatives analysis, because GSPs 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</p>

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		<p>analyzing sustainability due to speculation is incorrect.</p> <p>First, Staff provides its own definition of sustainability. Staff states that "declining groundwater levels over a period of time indicate that groundwater use within a subbasin is unsustainable." (SED, at 9-24.) In addition, Staff stated that in the Eastern San Joaquin basin groundwater levels have declined over the past 40 years and that such sustained decline is "unsustainable." (SED, at 9-24.) Therefore, it appears that the Staff has established its own definitions of sustainability and has begun to apply the definitions to the conditions in the basins.</p> <p>Per Staff's definition, the decline of groundwater levels equates to sustainability. Staff has access to historical groundwater elevation changes. In addition, Staff has predicted the impact of the Proposed Project on groundwater use, which it could use to estimate elevation changes. For this reason, the conclusion that the evaluation of sustainability is speculative is not correct or supported. Staff must evaluate whether the Proposed Project will be sustainable.</p> <p>Second, even without Staff's definition, sustainability under SGMA is not speculative. To the contrary, SGMA provides that sustainability must be based on the avoidance of six undesirable results. Therefore, SGMA provides the roadmap to how sustainability must be defined. For this reason, sustainability under SGMA is not speculative, but rather, defined by six specific metrics. It is not speculative to evaluate the six factors that define sustainability under SGMA. This analysis is not speculative and if performed will allow Staff to estimate whether the Proposed Project will result in groundwater sustainability.</p>	<p>irrigation supplies (Chapter 9, Section 9.4.3, Impacts and Mitigation Measures; Chapter 17, Cumulative Impacts, Growth-Inducing Effects, and Irreversible Commitment of Resources, Table 17.1, Cumulative Project List, and Section 17.2.2, Cumulative Impact Analysis, Agricultural Resources; and, Chapter 22, Section 22.4.1, Potential Impacts of LSJR Alternatives).</p> <p>The SED does not establish a definition of sustainability. The text on page 9-24 describes the consequences of unmanaged groundwater pumping in the San Joaquin Valley, which is widely acknowledged as unsustainable. In addition, SGMA regulates groundwater management by local public agencies in high and medium priority groundwater basins subject to the Act. SGMA defines "sustainable groundwater management" as "the management and use of groundwater in a manner that can be maintained during the planning and implementing horizon" of those local public agencies' groundwater sustainability plans without causing undesirable results. (Wat. Code § 10721(v).) The plan amendments neither manage nor use groundwater. The SED analyzes the potential local response to reduced surface water supplies, which could include changes in groundwater pumping. Please see Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, for further discussion of SGMA in the context of the plan amendments.</p>
3239	226	<p>Failure to Evaluate Environmental Impacts Outside the Irrigation District Service Areas</p> <p>Staff only evaluates impacts in the service areas of the Irrigation Districts. (SED, at 9-45 to 9-47.) Staff evaluated groundwater pumping of the Irrigation Districts. (Id., at 9-45.) In addition, Staff evaluated the impacts to Irrigation District groundwater pumping. (Id., at 9-46.) However, Staff failed to evaluate the impact of the Proposed Project on the area outside the Irrigation District service area. Instead, Staff makes the assumption that the impacts to the Irrigation Districts will impact those inside and outside the Irrigation District service areas in the same manner.</p> <p>This assumption is unexplained and undisclosed. Only after reading the document several times does it become clear that Staff failed to analyze how the Proposed Project will impact areas outside the Irrigation District service areas. Staff must revise the SED to include an analysis of how the Proposed Project will impact areas outside the Irrigation District service areas.</p>	<p>As explained in Appendix G, Agricultural Economic Effects of the Lower San Joaquin River Flow Alternatives: Methodology and Modeling Results, the LSJR alternatives would only affect the availability of surface water in the LSJR Watershed. Since the districts are the entities receiving the surface water supplies, it is their response, by potentially pumping more groundwater or potentially reducing irrigation and therefore incidental recharge, that would change due to the LSJR alternatives. Therefore, the irrigation districts are the only parties analyzed for the groundwater balance. However, the estimated groundwater effect is then standardized by dividing the estimated net change in groundwater balance by the whole subbasin surface area, not just the irrigation-district service area. This captures effects at the subbasin level, including for others who may experience reduced groundwater levels. See Chapter 9, Groundwater Resources, including Table 9-5, which summarizes irrigated land both within and outside of the irrigation districts.</p>
3239	227	<p>Failure to Analyze Basin Characteristics</p> <p>Staff fails to consider the attributes of the subbasins in its analysis of the impacts of the Proposed Project. Specifically, Staff failed to evaluate how water moves and flows in and between the subbasins. Rather, Staff acknowledged that it considered each subbasin "to be four separate pools of water." (SED, at 9-44.) Staff went on to concede that "in reality, water can move slowly between subbasins." (Id.) However, Staff explained that the "simplifying assumptions," such as the subbasins being separate pools, are "acceptable because the purpose of the analysis is to estimate the general magnitude of the average effect" of the</p>	<p>Models are simplified versions of reality and involve assumptions that are made suitable for the level of analysis and purpose of the study being conducted. The assumptions made for the groundwater impact analysis are appropriate for the scope and purpose of the SED, as a programmatic evaluation. Please see Master Response 1.1, General Comments, for a discussion the programmatic scope of the SED, adequacy of the approach, and CEQA requirements for program-level analysis.</p> <p>Please see response to comment 3239-223 and Master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, regarding the method and approach of the groundwater resource impact analysis.</p>

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		<p>Proposed Project. (Id.)</p> <p>However, making assumptions that do not reflect the reality of how the subbasins work will not provide a correct estimate of the general magnitude of how the systems work. Instead, proceeding on fundamental and knowing mischaracterizations of how groundwater flows in the subbasins will only provide an incorrect analysis; regardless of whether the analysis is general or specific, it will be incorrect.</p> <p>In addition, Staff failed to evaluate the geomorphology, depth, substrates, and other technical attributes of each subbasin. Staff concedes it assumed there was no "separation between shallow and deep aquifers." (SED, at 9-44.) Staff explained that the failure to evaluate varying depths and substrates was appropriate because it assumed groundwater pumping would increase and it would increase in "both shallow and deep wells." (Id.)</p> <p>Staff also failed to analyze the different substrate materials and/or permeability between aquifer sections. (Id.) Staff acknowledged this failure, but stated that such precision was unnecessary because Staff assumed that "water pumped from a deeper confined section of the aquifer would eventually be replaced by water from above or from surrounding basins." (Id.) This assumption is unsupported, as Staff failed to evaluate how water moves from surrounding basins and also failed to evaluate how water would move between from higher to lower depths.</p>	
3239	228	<p>Failure to Analyze and Rely upon the Best Available Science</p> <p>There are several local and regional groundwater modeling tools that are publicly available that Staff failed to use to analyze the groundwater impacts of the Proposed Project.</p>	<p>Please see master Response 1.1, General Comment, regarding State Water board use of best available science. Please see master Response 3.4, Groundwater and the Sustainable Groundwater Management Act, regarding groundwater models.</p>
3239	229	<p>The evaluation of the impacts to hydropower not supported by substantial evidence.</p> <p>Staff's evaluation of the Proposed Project's impact on hydropower is based entirely on results from the WSE Model. (SED, at 14-30.) The WSE Model assumes any reduction from the proposed project will be taken in water deliveries and therefore reservoir storage will remain unaffected. This assumption is incorrect, unrealistic, and completely without support. One of the absurdities that results from this unsupported assumption is that the SED concludes the proposed project has almost no hydropower impact. Because the hydropower analysis is based entirely on faulty assumptions that reservoir storage will remain unchanged, it is deficient and unsupported by substantial evidence.</p> <p>Apart from the fundamental defect of incorrectly assuming hydropower will not be affected, the hydropower analysis has other deficiencies as well. First, it fails to properly analyze the impact from shifting the seasonal timing of water releases from reservoirs. Appendix J concedes the Proposed Project will decrease hydropower generation during the months of July and August because of reduction in reservoir releases during those months. (SED, at 14-32.) Likewise, the Proposed Project will increase hydropower generation during the months of May and June due to increased reservoir releases. (Id.) However, Staff only evaluates annual hydropower impacts and therefore fails to analyze the impact of shifting hydropower generation from summer to spring.</p> <p>During summer months, energy demands peak, supply is low and transmission is constrained. This combination makes summer energy more valuable and costly. Spring demand is lower, supply is higher, and transmission is less constrained compared to</p>	<p>The comment is not correct regarding consideration in the SED of reservoir storage in the modeling. As described in Appendix J, Hydropower and Electric Grid Analysis of Lower San Joaquin River Flow Alternatives, Section J.2, Energy Generation Effects, the equation for horsepower generated is a function of power plant efficiency, weight of water, reservoir release rates, and reservoir elevations. The last two items are obtained from the WSE model, and are based on reservoir storage parameters (including constraints on maximum and minimums).</p> <p>The SED also considers seasonal shifts in production; see Master Response 8.4, Non-Agricultural Economic Considerations, regarding potential loss of seasonal flexibility in power generation.</p> <p>Finally, with respect to regional economic effects, Section J-3, Overview of the Transmission System in Central California, provides a discussion of the balancing authority (BA) of the three primary affected facilities. Both New Exchequer and New Melones facilities are connected to large balancing authorities, and the small change in hydropower production is not anticipated to affect the region's economy. The New Don Pedro facility is a regional facility but is also designed to meet reliability obligations as a balancing authority. This indicates that the regional impacts from the New Don Pedro facility will be fairly minimal.</p>

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		<p>summer. Thus, the proposed transfer of summer hydropower generation to spring hydropower generation is not without impact. It has the potential to result in increased costs, increased supply problems, and increased capacity issues. Because Staff fails to analyze these impacts, it is not supported by substantial evidence.</p> <p>Second, Staff fails to consider the cost of replacement energy. The spring season is a high production period for wind and Pacific Northwest hydropower generation which drives down the value and price of energy. The summer months are high demand months with low supply, which drive energy costs up. Thus, the proposed project's shift of hydropower generation from summer to spring will require stakeholders to purchase energy in summer months when it is most expensive. Because Staff fails to consider this cost and the environmental impact therefrom, it is not supported by substantial evidence.</p> <p>Fourth, Staff incorrectly assumes regional economic effects due to hydropower loss are "virtually imperceptible" when compared to annual statewide electricity production. (SED, at 18-22.) To the contrary, the proposed project will impact the local regions that depend on the hydropower that would be reduced by the Proposed Project. The region includes hydropower sources that supply only regional customers and do not contribute to the statewide grid. Therefore, the impacts of the proposed project will be much more substantial and concentrated to the project area. Staff misleadingly dilutes the regional effects by spreading the effects statewide, when in fact those effects will be localized. Because Staff fails to analyze the regional hydropower impacts, the analysis is not supported by substantial evidence.</p>	
3239	230	<p>The analysis of flood risk is not supported by substantial evidence.</p> <p>Staff finds the proposed project will have a less than significant impact on flooding and flood risk. (SED, at 6-25 to 6-26.) Staff's flooding risk analysis, however, is inadequate. Staff's analysis is inadequate for two primary reasons.</p> <p>First, Staff's evaluation of the proposed project's impact on flood risk is based entirely on results from the WSE Model. (SED, at 6-20.) The WSE Model assumes any reduction from the proposed project will be taken in water deliveries and therefore reservoir storage will remain unaffected. This assumption is incorrect, unrealistic, and completely without support. For instance, Staff states, "The same flood control curves and daily operations would be used for actual operations of the three reservoirs under the LSJR alternatives as under the baseline." (Id., at 6-22.) In other words, Staff did not evaluate the impacts of the proposed project on flood control, it simply assumed reservoir storage levels would remain unchanged and there was no analysis to perform.</p> <p>Second, because Staff relies on the faulty operational assumption of the WSE Model, it fails to evaluate the flood risks that will occur if the proposed project results in increased reservoir fluctuation. For example, the proposed project may increase reservoir fluctuation and alleviate flood risk by increasing the frequency that reservoir levels are low or close to empty. Staff does not disclose or analyze this potential impact.</p> <p>Third, the SED lacks transparency regarding flood control relief from the proposed project. The SED seems to indicate that Staff has yet to identify the level at which the proposed requirements would cease to apply due to flood control requirements by stating: "[T]he percent of unimpaired flow requirement, as specified by a particular LSJR alternative, would cease to apply during high flows or flooding to preserve public health and safety. The State</p>	<p>The comment incorrectly states the WSE model assumed that reservoir levels would remain unchanged. Please see Master Response 3.2, Surface Water Analyses and Modeling, for a description of the adequacy of the WSE modeling. In addition, Chapter 5, Surface Hydrology and Water Quality, and Appendix F.1, Hydrologic and Water Quality Modeling, describe the WSE model methods and show that reservoir storage is expected to change in response to implementation of the plan amendments. The Chapter 6, Flooding, Sediment, and Erosion, text that reads, "The same flood control curves and daily operations would be used for actual operations of the three reservoirs under the LSJR alternatives as under the baseline," is saying that the day-to-day operations to follow flood control rules would not change (note that reservoir flood control operations and flood control curves are also described in the Chapter 6 section titled "Reservoirs"). However, when storage is lower than what is required for flood-control purposes, operations would be affected by the plan amendments.</p> <p>The comment indicates concern that increased reservoir fluctuation in response to implementation of the plan amendments might increase flooding. Flooding is related to having high storage, not high reservoir fluctuation. Flooding typically occurs when a large storm event occurs at a time when reservoir storage is high. Because more water would be released from the reservoirs during February-June in response to implementation of the plan amendments, the conditions for flooding would occur less frequently with the plan amendments. Please see Chapter 6 for a discussion of the peak flows (e.g., Tables 6-10, 6-11, and 6-12).</p> <p>The commenter requests specificity regarding flows that would be high enough to constitute a safety risk and, therefore, would not be required by the plan. The model option to include flow restrictions contained in the WSE model are not used in the WSE simulations for the plan amendments. The plan amendments do not specify maximum flow limits. Flood operations are governed by authority of the U.S. Army Corps of Engineers as specified in flood operations manuals for each reservoir.</p>

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		<p>Water Board would coordinate with federal, state and local agencies to determine when it is appropriate to waive the requirements." (SED, at 6-20.)</p> <p>This statement, however, is misleading. The WSE Model includes a specific flood control maximum for each tributary. (SED, Appx. F, at 1-17 [capping flows on the Tuolumne River at 3,500 cfs, the Stanislaus River at 2,500 cfs and the Merced River at 2,000 cfs].) Therefore, the SED is internally inconsistent and misleading; the flood analysis fails to disclose that flood control limits have already been selected and instead states that such limits will be determined at a later date after coordination with appropriate agencies. In reality, however, the WSE Model has already included specific flood control limits for each tributary. These limits were not specifically disclosed and Staff fails to analyze whether the selected limits are sufficient or overly protective of flood risk. For these reasons, Staff's flood risk analysis is not supported by substantial evidence.</p>	
3239	231	<p>The analysis of air quality is not supported by substantial evidence.</p> <p>Staff does not analyze the impacts to air quality that may be caused by the proposed amendments to the water quality control plan, despite the fact that the San Joaquin Valley is designated as an area of "serious" "nonattainment" for the particulate matter standards under the Clean Air Act.</p>	<p>This comment is a general summary of comments 3239-232, 3239-233, and 3239-234. Please see the responses to those comments.</p> <p>In addition, this comment does not contradict information contained in the SED regarding non-attainment of the San Joaquin Valley (Appendix B, State Water Resources Control Board Environmental Checklist, Subsection Air Quality and Chapter 16, Other Indirect Actions).</p>
3239	232	<p>The San Joaquin Valley is an area of serious nonattainment.</p> <p>Pursuant to Section 109 of the Clean Air Act, the United States Environmental Protection Agency ("USEPA") has established national ambient air quality standards ("NAAQS") for certain air pollutants. (42 USC § 7409.) As relevant here, in 1997 the EPA established a new standard for particulate matter (PM) for particles with an aerodynamic diameter less than or equal to 2.5 micrometers (PM2.5), known as the 1997 PM2.5 standards. (62 Fed. Reg. 38652.) The purpose of the revised standard was to provide "increased protection against a wide range of PM-related health effects," including premature death, respiratory symptoms and disease (such as asthma), decreased lung function, and alterations in lung tissue and structure. (68 Fed. Reg. 38652.) The EPA set annual and 24-hour standards for PM2.5 (50 C.F.R. § 50.7.)</p> <p>The EPA has designated the San Joaquin Valley area (which includes all or parts of San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings and the valley portion of Kern Counties) as "serious" "nonattainment" for both the annual and 24-hour 1997 PM2.5 standards (40 C.F.R. 81.305.) This area covers more than 23,000 square miles and is home to more than four million people, in addition to being the nation's leading agricultural region. (See Notice of Proposed Rulemaking: Findings of Failure to Attain the 1997 PM2.5 Standards; California; San Joaquin Valley, p. 6.)</p> <p>As a result of this designation, the California Air Resources Board (CARB) became obligated to submit a "Serious area plan" for the San Joaquin Valley with "provisions to assure that the best available control measures for the control of direct PM2.5 and PM2.5 precursors [will] be implemented" and a "demonstration . . . that the plan provides for attainment as expeditiously as practicable but no later than December 31, 2015." (Notice of Proposed Rulemaking, p. 8.)</p> <p>CARB submitted its Serious area plan to the USEPA in two parts on June 25, 2015, and August 13, 2015, along with a request to extend the attainment date by three years for the</p>	<p>The comment provides a summary of different air quality requirements and the rulemaking process for EPA to designate the San Joaquin Valley area as non-attainment. This information does not contradict information contained in the SED (Appendix B, State Water Resources Control Board Environmental Checklist, Subsection Air Quality). The commenter does not make a general comment regarding the plan amendments or raise significant environmental issues.</p>

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		<p>24-hour PM2.5 standard, and by five years for the annual PM2.5 standard. (Notice of Proposed Rulemaking, p. 9.) The EPA initially proposed to approve most of the San Joaquin Valley's Serious area plan, and to grant the requested attainment date extensions. (Notice of Proposed Rulemaking, p. 9.) However, after receiving adverse comments on its proposal, the USEPA revised its proposal and determined that it could not extend the attainment date beyond December 31, 2015.</p> <p>Accordingly, USEPA reviewed the relevant data on San Joaquin Valley air quality for PM to determine if the standards for annual and 24-hour PM2.5 had been attained from the 2013 to 2015 period. Upon a review of that information, USEPA proposed to determine "that the San Joaquin Valley failed to attain the 1997 annual and 24-hour PM2.5 standards by the December 31, 2015 attainment date." (Notice of Proposed Rulemaking, p. 20.)</p> <p>If the USEPA adopts its proposed determination that the San Joaquin Valley failed to attain the requisite standards by the applicable attainment date, California must submit a revised state implementation plan (SIP) by December 31, 2016, that demonstrates "expeditious attainment of standards within the time period . . . and that provides for annual reduction in the emissions of PM2.5 or a PM2.5 plan precursor pollutant within the area of not less than five percent until attainment." (Notice of Proposed Rulemaking, p. 21-22.)</p>	
3239	233	<p>Large-scale fallowing can result in fugitive dust and particulate matter emissions.</p> <p>Both the State Water Board and the California Air Resources Board have previously acknowledged that abandoning, fallowing or otherwise reducing vegetation cover on fields can create dust and particulate matter problems.</p> <p>For instance, in Revised Water Right Order 2002-0016, involving a joint application for the long term transfer of water from Imperial Irrigation District (IID) to San Diego County Water Authority (SDCWA) [Footnote 64: In the Matter of Imperial Irrigation District's (IID) and San Diego County Water Authority's (SDCWA) Amended Joint Petition for Approval of a Long-Term Transfer of Conserved Water from IID to SDCWA and to Change the Point of Diversion, Place of Use, and Purpose of Use; Revised Water Right Order 2002-0016.], the State Water Board determined that "there is a potential for significant unavoidable impacts associated with fallowing." (WRO 2002- 0016, at 70.)</p> <p>The Board explained, "fallowed lands may be subject to wind erosion, creating fugitive dust impacts unless actions are taken to reduce these effects." (WRO 2002-0016, at 70.) In approving the long-term transfer of water from IID to SDCWA, the Board required IID to implement mitigation measures and best management practices, such as conservation crop sequencing and wind erosion protection measures, application of soil stabilization chemicals to fallowed land, re-application of drain water to allow growth of protective vegetation, or reuse of irrigation return flows to irrigate windbreaks across stretches of land. (WRO 2002-16, at 70.)</p> <p>The Board also required IID to comply with all applicable requirements in the final updated SIP for the Imperial Valley. (WRO 2002-16, at 70.) The Air Resources Board has also acknowledged the potential for PM emissions resulting from land fallowing. CARB previously sponsored a report from the Biology Department at San Diego State University to explore dust suppression methods in the Antelope Valley in response to increased air quality problems caused by the abandonment of farms in the area. The report notes that the loss of farming and other human disturbances led to high levels of PM in the towns of Lancaster</p>	<p>The comment provides background information related to the State Water Board's determination of significance for the air quality impact of a different and unrelated project that would require large-scale fallowing in the Imperial Valley and information contained in Revised Water Rights Order 2002-0016. Please see response to comment 3239-234 for a discussion of the differences between the plan area and plan amendments and the Imperial Irrigation District fallowing program for water transfers.</p>

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		and Palmdale. (Research into the Development of Biological Methods of Dust Suppression in the Antelope Valley, 2006 Final Report, at 1.)	
3239	234	<p>The SED fails to analyze the impacts of fallowing on air quality in the San Joaquin Valley.</p> <p>Staff estimates the Proposed Project will result in an average loss of approximately 24,000 acres of farmland in the San Joaquin Valley. (SED, at 11-51, Figure 11-17.) In dry years, approximately 100,000 acres would be fallowed under the new plan as compared to the no action alternative. (SED, Figure 11-9 to 11-14.) Despite the vast amount of fallowing that is predicted to occur as a result of the proposed changes to the water quality control plan, Staff fails to evaluate any of the potential impacts to air quality in the San Joaquin Valley.</p> <p>Public Resource Code section 21080.4 requires that the lead agency, in this case the State Water Board, send a notice of preparation to, among others, "those public agencies having jurisdiction by law over the natural resources affected by the project. . ." The Notice of Preparation circulated by the State Water Board indicates that the SED will evaluate potential environmental effects on air quality, [Footnote 65: Notice of Preparation and of Scoping Meeting for Environmental Documentation for the Update and Implementation of the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary: South Delta Salinity and San Joaquin River Flows, page 10, available at http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/environmental_review/do_cs/nop2009feb13.pdf.] but the Board did not send the notice of preparation to the Air Resources Board.</p> <p>Furthermore, an EIR, or in this case an SED, must identify and describe all "significant" environmental effects of the project, including short-term and long-term effects, as well as all mitigation measures to minimize the significant environmental effects. (Public Resources Code, § 21100(b); Cal. Code Regs., tit. 14, § 15126.2.) If an environmental effect is found to be "not significant," the document must nevertheless include a statement explaining the reasons for that determination. (Public Resources Code, § 21100(c); Cal Code Regs., tit. 14, § 15128.) While Staff identifies and provides brief analysis of some effects of fallowing, including the potential for increased distribution and abundance of invasive plants (SED, at 18-42), it fails to address any impacts to air quality caused by the widespread fallowing that will occur if the amendments to the water quality control plan are implemented.</p> <p>Given the State Water Board's prior acknowledgement and determination that fallowing can cause significant and unavoidable impacts to air quality, and the already perilous condition of air quality in the San Joaquin Valley, Staff's analysis is fatally deficient for failing to address the potential impacts to air quality that could be caused by widespread fallowing of currently productive farmland. (See e.g. County of Sanitation Dist. No. 2 v. County of Kern, (2005) 127 Cal.App.4th 1544, 1594-1598 [where the County adopted an ordinance that would affect 23,594 acres of farmland by restricting the application of Class B biosolids on agricultural lands, the County was required to prepare an EIR before adopting the ordinance; the court observed that the County "failed to study the impact of dust on air quality and, as a result, there exists a plausible inference" that the ordinance could cause the addition of 150 pounds per day of PM-10 to the air as a result of soil loss caused by wind erosion on fallowed fields].)</p>	<p>As discussed in the air quality analysis in Appendix B, State Water Board's Environmental Checklist, decreased surface water diversions associated with implementation of the flow objectives could result in decreased water available for agricultural irrigation, potentially resulting in a reduction of acres in active agricultural production. As noted in Chapter 11, Agricultural Resources, a large proportion of the farm lands affected by reductions in irrigation water supply (as estimated by the Statewide Agricultural Production [SWAP] model) could potentially remain either temporarily or permanently in non-irrigated agricultural use (e.g., dryland farming, grazing, and fallowing) or converted to other uses altogether (Impact AG-1 and Impact AG-3). Accordingly, not all affected designated farmlands would be fallowed.</p> <p>Based on SWAP model results, crops that could likely be fallowed include alfalfa, pasture, and field crops, because those crops are typically lower net revenue crops (see Master Response 8.1, Local Agricultural Economic Effects and the SWAP Model, for a description of how the SWAP model works). If alfalfa and pasture fields were fallowed in some years due to reduced surface water diversions, the growers would not likely till the fields given the monetary cost of doing so. Thus, these fields would maintain some vegetative cover, which would reduce wind erosion and associated fugitive dust emissions. In addition, field crops are amenable to conservation tillage, where stubble or other crop residue are left on the field to reduce soil erosion.</p> <p>Although fallowed fields can be a source of dust, as described in Appendix B, active agricultural production generates both exhaust emissions and fugitive dust. Sources of emissions from active agriculture include soil disturbance associated with soil tillage and crop harvesting, use of off-road agricultural equipment, and pesticide and herbicide application. Reductions in active agricultural acres as a result of reduced irrigation water would therefore eliminate exhaust and fugitive dust emissions from these sources. Emissions savings from reduced active agriculture are anticipated to offset the minor increase in fugitive dust expected from fallowed and unvegetated land, thereby resulting in an air quality benefit. Accordingly, impacts were determined to be less than significant.</p> <p>The commenter indicates for a different and completely unrelated project (the long-term transfer of conserved water from Imperial Irrigation District [IID] to San Diego County Water Authority [SDCWA]), the State Water Board determined that there was a potential for significant and unavoidable impacts due to fallowing (Revised Water Rights Order 2002-0016). Further, in approving the different and unrelated projects the State Water Board required IID to implement mitigation measures and best management practices for this impact. The issue of air quality impacts of fallowing is complicated and, in general, have a high degree of uncertainty. The degree to which fallowing agricultural lands affects air quality is dependent on many variables including soil composition, soil moisture content, land management practices, barriers (e.g., windbreaks such as linear plantings of trees or shrubs), precipitation, and wind speed. Thus, comparing impact determinations made for a different and unrelated project in the Imperial Valley to the plan area with regard to air quality impacts from fallowing is not appropriate given these variables, the differing geographic locations, and the fact that the IID/SDCWA project involves a water transfer and the worst-case assumption of permanent fallowing of up to 50,000 acres.</p> <p>In general, many environmental characteristics that can affect land erosion, and thus airborne dust, differ between the Imperial Valley and the San Joaquin Valley (plan area). For example, based on 1996 – 2006 data from the Western Regional Climate Center (WRCC), average annual wind speeds in Imperial County (at Imperial Airport) are approximately 7.5 miles per hour (mph). WRCC-sourced data compiled and averaged from seven different airports in the San Joaquin Valley (Bakersfield, Fresno, Madera, Merced, Modesto, Visalia, and Twentynine Palms) showed an annual average wind speed of 6.3 mph, which is approximately 16 percent lower than the average annual wind speed in Imperial County. In addition, the Imperial Valley is</p>

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			<p>substantially more arid than most of the San Joaquin Valley with average annual precipitation (1914 – 2004) of approximately 2.9 inches (Imperial Irrigation District 2018), in contrast to the San Joaquin Valley, where the average annual precipitation ranges from less than 5 inches in the south to approximately 15 inches in the north (USGS 2011). While soil is highly variable from location to location, Imperial Valley soils are generally higher in clay (Coachella Valley Water District et al. 2002. p. 3.3-1; USDA Soil Conservation Service 1981), whereas soils in the plan area are more loamy, and therefore higher in sand (see plan area cities’ agricultural water management plans referenced in Chapter 11, Agricultural Resources). Further, Imperial Valley agricultural soils have relatively high salt content, and lands left idle can have salt (particularly sodium chloride) wick to the surface; these surface salts can be “fragile” and subject to impact from sand thereby creating dust and PM10 (Buck et al. 2011; Letey 2000; Kelley and Nye 1984).</p> <p>Based on anticipated effects on active agriculture from reduced irrigation water, which include a reduction in active farming emission sources (e.g., offroad equipment), the analysis appropriately evaluates potential air quality impacts from land fallowing. The analysis considers the unique geologic and climatological conditions within the plan area, which differ from those in the Imperial Valley, as well as compliance with SJVAPCD rules and regulations.</p> <p>Finally, the State Water Board appropriately noticed all agencies with jurisdiction over trustee resources in accordance with Public Resources Code section 21080.4. Those agencies are listed in Cal. Code Regs., tit. 14, section 15386.</p>
3239	235	<p>The cumulative impact analysis is not supported by substantial evidence.</p> <p>Staff is required to analyze past, present, and future projects whose "individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." (Cal. Code Regs., tit. 14, § 15355.) A cumulative impact from multiple projects is "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." (Cal. Code Regs., tit. 14, § 15355 [b].) Staff’s cumulative analysis is deficient and lacking in substantial evidence for several reasons.</p> <p>First, Staff’s cumulative analysis is often cursory, without any evaluation of the relationship between the Proposed Project and the future project or the cumulative potential impacts. For example, Staff discloses that Waterfix is a future potential project which could, together with the Proposed Project, result in cumulative impacts. However, the analysis does not explain or estimate the nature of the potential impacts.</p> <p>In addition, Staff fails to disclose that the Proposed Project would actually provide water to the WaterFix project proponents. Staff is required to disclose and analyze how the Proposed Project along with WaterFix would affect the environment. Certainly disclosing how the Proposed Project relates to WaterFix is an integral part of that requirement. Staff failed to evaluate how the Proposed Project and WaterFix are related and also failed to evaluate how the two projects together will impact the environment. For these reasons, Staff’s cumulative analysis is not sufficient and not supported by substantial evidence.</p> <p>Second, Staff fails to evaluate how the Proposed Project is related to or affected by the Phase 2 review of the Bay Delta Plan. (SED, at 17-19.) Staff briefly describes the Phase 2 phase of the Bay Delta Plan review and discloses this project may change the flows in the Delta and export/inflow ratios. Staff also offers that these flow alterations may impact</p>	<p>Please see Master Response 6.1, Cumulative Analysis, regarding the adequacy of the cumulative impact approach and the program level cumulative analysis, as well as growth-inducing effects and considerations regarding the need for housing.</p> <p>The compiled list of projects presented in Chapter 17, Cumulative Impacts, Growth-Inducing Effects, and Irreversible Commitment of Resources, represents the best available knowledge of a variety of programs and projects and creates a comprehensive landscape of the potential cumulative impacts to consider.</p> <p>Chapter 17 includes California WaterFix in its discussion analysis in four separate resource areas (surface hydrology and water quality, aquatic biological resources, agricultural resources, and service providers). A description of how these resources could be affected by the California WaterFix is presented under the subsection entitled: Projects with Potential Cumulative Impacts. In each of the resource sections under Section 17.2.2, Cumulative Impact Analysis, the California WaterFix is identified and a discussion of its potential effects on each of these resource combined with the plan amendments is provided. For example, text from Chapter 17 reads: “These projects could directly reduce circulation of water in the southern Delta, and thereby reduce dilution of locally saline water, which could result in increased salinity in southern Delta channels...California WaterFix, which calls for the construction of facilities to divert water from the Delta at a location on the Sacramento River, could result in increased salinity in southern Delta channels if less low salinity water is pumped at the existing export facilities in the southern Delta...Of those projects discussed above where the State Water Resources Control Board (State Water Board) has approval authority (e.g., California WaterFix, WWCPs, and groundwater recharge projects), it would be required to consider and implement water quality objectives for salinity and other pollutants such that objectives are not exceeded... the LSJR alternatives would generally increase river flows on the three eastside tributaries, as compared to baseline conditions for February–June, and there are only small changes in flow expected outside of these months. Increases in flow typically result in lower salinity levels, and therefore would not cause an increase in exceedances of existing (or proposed) water quality objectives nor result in an impact on the agricultural beneficial use... LSJR Alternatives 2, 3, and 4 would not result in a cumulatively considerable incremental contribution to cumulative impacts or significant cumulative impacts related to salinity and water quality degradation, and cumulatively adverse impacts would be less than significant.”</p>

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		<p>salinity conditions of Delta waters. (Id.) However, Staff offers no further discussion or evaluation of how the flow changes will impact the environment. Provided the entire purpose of the Proposed Project is to provide flow to protect beneficial uses and Staff discloses the Phase 2 project will impact the same Bay-Delta flow component, Staff must provide more analysis than simply "this project will alter flows." The existing analysis is deficient and for this reason the cumulative analysis portion of the SED is not supported by substantial evidence.</p> <p>Third, Staff's analysis of water transfers is deficient. Staff states generally that water transfers would occur with or without the Proposed Project and that most transfers may require additional approvals. (SED, at 17-20.) Although these may be true, it does not lessen or reduce the need for Staff to consider the cumulative impacts of transfers. Further, Staff fails to disclose the water transfer in which it proposes will occur due to the Proposed Project--the transfer of water to the City and County of San Francisco from water right holders on the Tuolumne. Given Staff's reliance on this hypothetical transfer in the analysis of the impacts of the Proposed Project, Staff is required to identify that transfer here and evaluate its cumulative impacts.</p> <p>The section in which Staff attempts to evaluate the cumulative impacts of water transfers is also flawed. (Id.) This section makes unsupported sweeping assumptions, such as: "Because any increases in flows resulting from the transfers would be well within normal channel capacities, water transfers are typically not expected to result in a change to levee stability, flooding potential, or sediment and erosion potential." (Id.) It is not clear why Staff makes such assertion and Staff does not provide support for these assertions; certainly such unsupported conclusions are not sufficient to evade environmental review of cumulative impacts.</p>	<p>Chapter 17 includes the Sacramento Bay-Delta watershed update in its discussion analysis in four separate resource areas (surface hydrology and water quality, aquatic biological resources, agricultural resources, and service providers). A description of how these resources could be affected by the Sacramento Bay-Delta watershed update is presented under the section entitled: Projects with Potential Cumulative Impacts. In each of the resource sections under Section 17.2.2, Cumulative Impact Analysis, the Sacramento Bay-Delta watershed update is identified and a discussion of its potential effects to each of four the resources combined with the plan amendments is provided. For example, text from Chapter 17 reads: "Similarly, future updates to the 2006 Bay-Delta Water Plan, Phase II could place conditions on the CVP and SWP that would reduce exports at the facilities operated by the California Department of Water Resources (DWR) and USBR, or other conditions on DWR, USBR, and other water right holders that would change the quantity of low salinity water flowing into southern Delta channels, and thereby increase salinity in the southern Delta... Of those projects discussed above where the State Water Board has approval authority (e.g., California WaterFix, WWCPs, and groundwater recharge projects), it would be required to consider and implement water quality objectives for salinity and other pollutants such that objectives are not exceeded. Notwithstanding this, given the condition of the surface hydrology and water quality in the plan area, the impacts of past, present, and reasonably foreseeable probable future projects on water quality are cumulatively significant."</p> <p>Water transfers, in general and specifically to SFPUC are discussed throughout the SED. Some primary areas of discussion include Chapter 13, Service Providers; Chapter 16, Evaluation of Other Indirect and Additional Actions (Section 16.2.1, Transfer/Sale of Surface Water); Chapter 17, and Appendix L, City and County of San Francisco Analyses. Both Chapters 16 and 17 include water transfers their cumulative analyses. In particular, Chapter 17 considers the effects of potential water transfers in discussion of potential cumulative impacts in five resource areas (surface hydrology and water quality; aquatic biological resources; flooding, sediment and erosion; terrestrial biological resources, and groundwater resources). Reasonable, yet broad assumptions are made with respect to potential water transfers based on existing data. These broad assumptions were made with the intent of fully disclosing the potential array of environmental impact and cumulative impacts that could occur. However, the State Water Board cannot say with certainty what actions regulated entities would take in response to the plan amendments as discussed and disclosed in Chapter 16 (Sections 16.1, Introduction; 16.2, Lower San Joaquin River Alternatives—Other Indirect Actions; and 16.7, Cumulative Impacts) and Chapter 18, Summary of Impacts and Comparison of Alternatives (Sections 18.1, Introduction; 18.2.1, Summary of Alternatives and Impact Analysis; and 18.2.2, Significant and Unavoidable Impacts). Please see Master Response 8.5, Assessment of Potential Effects on the San Francisco Bay Area Regional Water System, for further information related to the RWS service area in the Bay Area.</p> <p>The State Water Board provided substantial evidence for conclusions throughout the SED and Chapter 17. Please see Master Response 1.1, General Comments, regarding substantial evidence. As described in Chapter 17: "Transfers that require the use of state, regional, or a local public agency's conveyance facilities require the owner of the conveyance facilities (e.g., DWR, USBR) to determine that the transfers will not harm any other legal user of water, will not unreasonably affect fish and wildlife, and will not unreasonably affect the overall economy of the county from which the water is transferred." Also, as described in Chapter 16, "water transfers would follow flood control rules and regulations governing releases from reservoirs and as such would not be expected to result in flooding or levee failure as a result of releases during different times of the year from reservoirs because as a result of following flood control rules and regulations channel capacities would not be exceeded. The potential mobilization of sediment and the potential for stream channel alteration and erosion would be considered low given the flows would be within the historic variation." Therefore, the existence of the regulations that limit these effects, combined with the fact that water transfers typically do not occur during high flows (because the water is less likely to be needed and used during high flows and because of flood control rules) means that any increases in flows resulting from</p>

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			<p>the transfers would be well within normal channel capacities (as identified in Chapter 17).</p> <p>Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past, current, and probably future projects. (Cal. Code Regs., tit 14, § 15065, subd. (a)(3).)</p>
3239	236	<p>The proposed revisions to the Bay-Delta plan set forth in Appendix K are unlawful for various reasons, and the Board should decline to adopt them. In addition, the SED must be revised and recirculated. An environmental document must be recirculated when significant new information is added after its release to the public. (Pub. Resources Code, § 15088.5(a).) Significant new information includes:</p> <ul style="list-style-type: none"> - a new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented; - a substantial increase in the severity of an environmental impact would result unless mitigation measures area adopted that reduce the impact to a level of insignificance; - a feasible project alternative or mitigation measure considerably different from others previously analyzed; and - the draft document was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. <p>(Pub. Resources Code, § 15088.5(a)(1)-(4).)</p> <p>As the substance of these comments make clear, the revisions necessary to the SED will include increased severity of environmental impact, considerably different project alternatives, and considerably different mitigation measures. For these reasons, the SED will need to be revised and recirculated.</p> <p>As currently drafted, the SED is fundamentally inadequate. The SED does not analyze the environmental impacts stemming from the Narrative Objective, the program of implementation, methods of compliance, mitigation measures, or a reasonable range of alternatives. The environmental analysis included in the SED is deficient; it is filled with errors, unsupported assumptions, conjecture, internal inconsistencies, and promises to develop appropriate analysis at a later date. Perhaps most importantly, these deficiencies are so fundamental that the SED does not allow for meaningful review of the environmental impacts. For these reasons, Staff is required to redraft and recirculate the SED.</p>	<p>Please see Master Response 1.1, General Comments, regarding the legal basis for SED recirculation, State Water Board approach to analyses (including the program-level evaluation, use of best available science, substantial evidence, and mitigation measures), description and objectives of the plan amendments (including the narrative objective and program of implementation), compliance, LSJR alternatives development, and responses to comments that either make a general comment regarding the plan amendments or do not raise significant environmental issues.</p> <p>The State Water Board has prepared the SED with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes into account environmental consequences (Cal. Code Regs., tit. 14, § 15151).</p>
3239	237	[ATT1: CDFW Unpublished Mossdale data to FishBio 2008-2016.]	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.
3239	238	[ATT2: USFWS Unpublished Chipps Island data to FishBio.]	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.
3239	239	[ATT3: AD Consultants' Report. "SJR Basin Water Temperature and Fish Production Modeling." March 15, 2017.]	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.
3239	240	[ATT4: FishBio Stanislaus off-channel Report 2014.]	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.

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3239	241	[ATT5: Report of Daniel B. Steiner. "San Joaquin River Basin Analysis: Baseline and 40% Unimpaired Requirement." March 20, 2107.]	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.
3239	242	[ATT6: Report of Dr. Susan Paulsen. "Evaluation of the fate of San Joaquin River inflow to the Delta for WY 1966, 1968, and 1988." March 13, 2017.]	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.
3239	243	[ATT7: Hoppin, et al letter re Doubling Goal 10-12-2011.]	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.
3239	244	[ATT8: Unpublished Stanislaus Weir data from FishBio.]	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.
3239	245	[ATT9: Unpublished Tuolumne Weir data from FishBio.]	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.
3239	246	[ATT10: SJRGA v. EPA Court Order. May 25, 2012.]	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.